Baffinland Iron Mines Corporation

WASTE MANAGEMENT PLAN

BAF-PH1-830-P16-0028

Rev 4

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DOCUMENT REVISION RECORD

Issue Date MM/DD/YY	Revision	Prepared By	Approved By	Issue Purpose
04/2013	0	A.G	S.P	Approved for Use
09/2013	1	C.G	S.P	Approved for Use
03/25/2014	2	NK	JM	Issued for Use
03/20/2015	3	NK	JM	Issued for Use
03/07/2016	4	LW	JM	Issued for Use

TRACK CHANGES TABLE

A review and update of the Waste Management Plan has been undertaken, the following revisions have been completed.

Index of Major Changes/Modifications in Revision 4, March 2016:

Item No.	Description of Change	Relevant Section
1	Remove Abbreviations	N/A
2	Updated to include 2016 Work Plan	Section 1.2
3	Added Table 1-1: Projected 2016 Solid Waste Disposal Quantities	Section 1.2
4	Removed Terms and Conditions of Baffinland's Commercial Lease and Type A and Type B Water Licences	Section 1.4
5	Removed Section 1.6: Relationship to Other Management Plans	Section 1.6
6	Removed Section 1.7: 2015 Work Plan Marginal Closure Cost Summary	Section 1.7
7	Removed Section 1.8: Update to this Management Plan	Section 1.8
8	Updated Baffinland's Health, Safety and Environment Policy	Section 2.1
9	Updated Baffinland's Sustainable Development Policy	Section 2.2
10	Removed Section 3: Targeted VEC's	Section 3
11	Removed Section 4.4.6: Unset Concrete and Concrete wash water from Mixing and Transportation of Concrete	Section 4.4.6
12	Removed Table 5.1: Baffinland Iron Mines Corporate Senior Management	Section 5
13	Updated to include Revised Baffinland's Mary River Organizational Chart	Section X
14	Removed Section 5.5: Construction	Section 5.5
15	Removed Section 5.6: Operation and Closure	Section 5.6
16	Remove Section 6: Performance Indicators and	Section: 6
17	Updated 2016 Work Plan	Appendix B
18	Updated Site Layout drawings	Appendix B

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1 INTRODUCTION

1.1 PURPOSE AND SCOPE

As required by Baffinland Iron Mines Corporation's (Baffinland) Type A Water Licence No. 2AM-MRY1325 Amendment No. 1 (Type A Water Licence) and Type B Water Licence No. 2BE-MRY1421 (Type B Water Licence) for the Mary River Project (Project), a review of Project Environmental Management and Monitoring Plans (EEMPs) was completed. This Waste Management Plan (Plan) was updated to meet the requirements of the Type A and B water Licences. Further and continual modifications and revisions to this Plan shall be completed based on future work scope modifications, waste management procedures, and associated approvals. Updates to this Plan shall be completed in accordance to the terms and conditions of Baffinland's Water Licences, QIA Commercial Lease – Q13C301, issued September 6, 2013, the amended Project Certificate No. 005 issued by the Nunavut Impact Review Board (NIRB) and any subsequent requirements which may be issued. Tables of concordance with applicable Licences and Authorizations are provided in Appendix A.

The purpose of this Plan is to identify Baffinland's framework for effective waste management. This includes identifying the roles and responsibilities of its employees and contractors and as well as procedures for handling, storing and disposing of solid wastes generated at Project sites to ensure that it is conducted in a safe, efficient and environmentally compliant manner that minimizes the potential for adverse impacts to the environment

This Plan identifies wastes generated at Project sites including, inert and non-hazardous solid wastes, construction debris, and domestic waste. The management of hazardous wastes (e.g. used oils, contaminated fuel and antifreeze, used chemical products, biomedical waste and spill clean-up materials) is provided in Baffinland's Hazardous Materials and Hazardous Waste Management Plan (BAF-PH1-830-P16-0011). The management of sewage effluent and sludge is provided by Baffinland's Fresh Water, Sewage and Wastewater Management Plan (BAF-PH1-830-P16-0010).

This Plan also identifies the various disposal methods prescribed to waste types generated at the Project in addition to providing monitoring controls and strategies for adaptive management and continuous improvement.

The following infrastructure has been constructed at Project sites to handle, store, transport and dispose of Project waste:

- Waste management facilities at Mary River and Milne Port to facilitate incineration, waste sorting and storage;
- Open-burning Facilities at Mary River and Milne Port;
- Landfill facility at Mary River; and

- Landfarm Facility at Milne Port.

1.2 2016 Work Plan Update

To support the activities identified in the 2016 Work Plan (refer to Appendix B), Baffinland plans to conduct waste management activities and operate waste management infrastructure as described within this Plan. The expected annual quantity of solid wastes to be disposed of during 2016 was established from survey volumes measured in 2015, as well as an analysis of projected activities. Estimated quantities of solid waste to be disposed of at the Landfill Facility are provided in Table 1-1.

TABLE 1-1: PROJECTED 2016 SOILD WASTE DISPOSAL

Project Site	Waste Storage Area	Vol. of Solid Waste to be Disposed (m^3)
Mary River – Mine Site	Landfill Facility	2,000
	Total	**2,000**

1.3 Definitions

Project:	The necessary tasks and work executed during the lifespan of the Project at the Project Site, including the construction, operation, closure and reclamation phases, of the Project.
Site:	The areas occupied by the Project facilities (permanent or temporary) during the construction, operation, closure and reclamation phases of the Project.
Contractor:	A person or business which provides goods, material, equipment, personnel, and/or services to Baffinland Iron Mines Corporation under terms specified in a contract.
Waste:	The residual waste material (hazardous, non-hazardous or Putrescible) generated during the construction, operation, closure and reclamation phases of the Project.
Hazardous Waste:	The wastes generated during the lifespan of the Project that present a threat to the human health or the environment because they exhibit one or more of the following characteristics: corrosive, reactive, explosive, toxic, inflammable, or biologically infectious.
Non-Hazardous Waste:	The wastes generated during the lifespan of the Project that do not present a threat to human health or the environment.
Putrescible Wastes:	The wastes generated during the lifespan of the Project that degrade very rapidly, i.e., plants, food scraps or animal remains.

Incinerator Waste:	Waste identified as suitable for incineration based on incineration technology used on-site, applicable regulations and project approvals. Includes: food waste, domestic waste, packaging waste, wood waste, absorbents, and some types of filters (e.g., air filters)
Clean Wood Products:	Clean untreated wood waste including wood or timber, not suitable for recycling or reuse, which is substantially free of glue, petroleum based materials, other chemicals, or contains other non-wood chemical products.
Opacity	Opacity is the degree to which the exhaust gases reduce the transmission of light and obscure the view of any object in the background. It is expressed as a percentage representing the extent to which an object viewed through the gases is obscured. Although not an emission standard, opacity provides an indication of the general performance of the incinerator during normal operation.

1.4 Regulatory Requirements

The following Acts and Regulations provide specific requirements for the management of non-hazardous solid waste generated at the Mary River Project:

- Territorial Lands Act 1985;
- Territorial Land Use Regulations;
- Nunavut Waters and Nunavut Surface Rights Tribunal Act 2002;
- Canadian Environmental Protection Act;
- Safety Act, Occupational Health and Safety Regulations;
- National Fire Code;
- Public Health Act; and
- Fisheries Act.

Due to the complexities and the number of acts and regulations involved, the Government of Nunavut has published a number of Guidelines to assist waste generators to effectively develop waste management plans for activities completed at Project sites (refer to Table 3-8).

2 BAFFINLAND POLICIES

2.1 HEALTH SAFETY AND ENVIRONMENT (HSE) POLICY

This Baffinland Iron Mines Corporation Policy on Health, Safety and Environment is a statement of our commitment to achieving a safe, healthy and environmentally responsible workplace. We will not compromise this policy for the achievement of any other organizational goals.

We implement this Policy through the following commitments:

- Continual improvement of safety, occupational health and environmental performance
- Meeting or exceeding the requirements of regulations and company policies
- Integrating sustainable development principles into our decision-making processes
- Maintaining an effective Health, Safety and Environmental Management System
- Sharing and adopting improved technologies and best practices to prevent injuries, occupational illnesses and environmental impacts
- Engaging stakeholders through open and transparent communication.
- Efficiently using resources, and practicing responsible minimization, reuse, recycling and disposal of waste.
- Reclamation of lands to a condition acceptable to stakeholders.

Our commitment to provide the leadership and action necessary to accomplish this policy is exemplified by the following principles:

- As evidenced by our motto “Safety First, Always” and our actions Health and safety of personnel and protection of the environment are values not priorities.
- All injuries, occupational illnesses and environmental impacts can be prevented.
- Employee involvement and active contribution through courageous leadership is essential for preventing injuries, occupational illnesses and environmental impacts.
- Working in a manner that is healthy, safe and environmentally sound is a condition of employment.
- All operating exposures can be safeguarded.
- Training employees to work in a manner that is healthy, safe and environmentally sound is essential.
- Prevention of personal injuries, occupational illnesses and environmental impacts is good business.
- Respect for the communities in which we operate is the basis for productive relationships.

We have a responsibility to provide a safe workplace and utilize systems of work to meet this goal. All employees must be clear in understanding the personal responsibilities and accountabilities in relation to the tasks we undertake.

The health and safety of all people working at our operation and responsible management of the environment are core values to Baffinland. In ensuring our overall profitability and business success every Baffinland and business partner employee working at our work sites is required to adhere to this Policy.

Brian Penney
Chief Executive Officer
March 2016

2.2 BAFFINLAND SUSTAINABLE DEVELOPMENT POLICY

At Baffinland Iron Mines Corporation (Baffinland), we are committed to conducting all aspects of our business in accordance with the principles of sustainable development & corporate responsibility and always with the needs of future generations in mind. Baffinland conducts its business in accordance with the Universal Declaration of Human Rights and ArcelorMittal's Human Rights Policy which applies to all employees and affiliates globally.

Everything we do is underpinned by our responsibility to protect the environment, to operate safely and fiscally responsibly and with utmost respect for the cultural values and legal rights of Inuit. We expect each and every employee, contractor, and visitor to demonstrate courageous leadership in personally committing to this policy through their actions. The Sustainable Development and Human Rights Policy is communicated to the public, all employees and contractors and it will be reviewed and revised as necessary on a regular basis. These four pillars form the foundation of our corporate responsibility strategy:

1. Health and Safety
2. Environment
3. Upholding Human Rights of Stakeholders
4. Transparent Governance

1.0 HEALTH AND SAFETY

- We strive to achieve the safest workplace for our employees and contractors; free from occupational injury and illness, where everyone goes home safe everyday of their working life. Why? Because our people are our greatest asset. Nothing is as important as their health and safety. Our motto is "Safety First, Always".
- We report, manage and learn from injuries, illnesses and high potential incidents to foster a workplace culture focused on safety and the prevention of incidents.
- We foster and maintain a positive culture of shared responsibility based on participation, behaviour, awareness and promoting active courageous leadership. We allow our employees and contractors the right to stop any work if and when they see something that is not safe.

2.0 ENVIRONMENT

- Baffinland employs a balance of the best scientific and traditional Inuit knowledge to safeguard the environment.
- Baffinland applies the principles of pollution prevention, waste reduction and continuous improvement to minimize ecosystem impacts, and facilitate biodiversity conservation.
- We continuously seek to use energy, raw materials and natural resources more efficiently and effectively. We strive to develop more sustainable practices.
- Baffinland ensures that an effective closure strategy is in place at all stages of project development to ensure reclamation objectives are met.

3.0 UPHOLDING HUMAN RIGHTS OF STAKEHOLDERS

- We respect human rights, the dignity of others and the diversity in our workforce. Baffinland honours and respects the unique cultural values and traditions of Inuit.
- Baffinland does not tolerate discrimination against individuals on the basis of race, colour, gender, religion, political opinion, nationality or social origin, or harassment of individuals freely employed.
- Baffinland contributes to the social, cultural and economic development of sustainable communities in the North Baffin Region.
- We honour our commitments by being sensitive to local needs and priorities through engagement with local communities, governments, employees and the public. We work in active partnership to create a shared understanding of relevant social, economic and environmental issues, and take their views into consideration when making decisions.
- We expect our employees and contractors, as well as community members, to bring human rights concerns to our attention through our external grievance mechanism and internal human resources channels. Baffinland is committed to engaging with our communities of interest on our human rights impacts and to reporting on our performance.

4.0 TRANSPARENT GOVERNANCE

- Baffinland will take steps to understand, evaluate and manage risks on a continuing basis, including those that may impact the environment, employees, contractors, local communities, customers and shareholders.
- Baffinland endeavours to ensure that adequate resources are available and that systems are in place to implement risk-based management systems, including defined standards and objectives for continuous improvement.
- We measure and review performance with respect to our safety, health, environmental, socio-economic commitments and set annual targets and objectives.
- Baffinland conducts all activities in compliance with the highest applicable legal & regulatory requirements and internal standards.
- We strive to employ our shareholder's capital effectively and efficiently and demonstrate honesty and integrity by applying the highest standards of ethical conduct.

4.1 FURTHER INFORMATION

Please refer to the following policies and documents for more information on Baffinland's commitment to operating in an environmentally and socially responsible manner:

Health, Safety and Environment Policy
Workplace Conduct Policy
Inuktitut in the Workplace Policy
Site Access Policy
Hunting and Fishing (Harvesting) Policy
Annual Report to Nunavut Impact Review Board
ArcelorMittal Canada Sustainability and Corporate Responsibility Report

If you have questions about Baffinland's commitment to upholding human rights, please direct them to contact@baffinland.com.

Brian Penney
Chief Executive Officer
March 2016

3 PROJECT WASTE MANAGEMENT

Baffinland has implemented, and continues to improve upon, a waste minimization program that focuses on the principles outlined in EHS Management System Framework Standard (BAF-PH1-830-STD-0001). Remaining waste is disposed of in a non-hazardous Landfill Facility, incinerated, or shipped off-site to an approved licenced waste disposal facilities.

Records of all backhauled wastes from Project sites are maintained on-site and confirmation of proper disposal through the use of Waste manifest tracking systems and registration with the Government of Nunavut, Department of Environment will be obtained. These records are made available upon request, to an Inspector or the Board.

3.1 WASTE IDENTIFICATION

A summary of the types of waste expected to be generated by the Project, and disposal method, are provided below.

Tables 3-1 and TABLE 3-2 provide the waste types generated at the Project sites and the prescribed disposal method(s). Table 3-3 presents the estimated quantities of waste generated for the 2016 Work Plan. Table 3-4 summarizes Project waste management facilities.

3.2 WASTE MANAGEMENT METHODS

Waste remaining after application of waste minimization strategies are managed in a practical and environmentally responsible manner utilizing the following methods appropriate for each waste type generated:

- Waste sorting at all generation points (refer to Appendix C);
- Incineration of non-hazardous combustible wastes (refer to Appendix D);
- Authorized open burning of untreated wood, cardboard and paper products (refer to Appendix E);
- Landfilling of inert non-combustible wastes (refer to Appendix F);
- Temporary storage and off-site shipping of hazardous and recyclable waste materials (refer to Hazardous Materials and Hazardous Waste Management Plan, BAF-PH1-830-P16-0011);
- On-site treatment for contaminated soil from hydrocarbon spills at the Landfarm Facility (refer to Hazardous Materials and Hazardous Waste Management Plan, BAF-PH1-830-P16-0011); and
- On-site treatment of contaminated water and snow generated from hydrocarbon spills using a contaminated snow containment berm and oily water separator (refer to the Hazardous Materials and Hazardous Waste Management Plan, BAF-PH1-830-P16-0011).

TABLE 3-1: WASTE DISPOSAL BY GENERATION LOCATION

Source	Waste Description	Waste Type	General Disposal Method
Offices	Computers and other electronic wastes, fluorescent lights	Recycle	Off-site recycling or disposal
	Waste paper	Combustible/ non-hazardous	Incineration
Wastewater treatment facility	Biological sludge (dried solids)	Combustible/ non-hazardous	Incineration
Maintenance complex	Used batteries, waste hydrocarbon products, engine oil, oil filters, glycols, aerosol cans, refrigerants, solvents, etc.	Hazardous	Off-site recycling or disposal, possible reuse of fuel and oil for heating and other uses.
	Scrap metal, rubber, plastic	Inert	Landfill
Laboratory	Chemical laboratory wastes, toxic substances	Hazardous	Off-site recycling or disposal
Domestic waste from accommodation facilities and kitchens/cafeterias	Accommodation facility garbage, food wastes	Combustible/ non-hazardous	Incineration
Inert waste from construction sites and materials from operations	Treated wood, plastics, cement, sand, used construction materials, metal, pipes, glass, insulation, etc.	Inert	Landfill
	Untreated wood/cardboard	Combustible/ non-hazardous	Incineration (Cardboard)/ open burning
Medical facility	Biomedical wastes	Hazardous	Biomedical off-site disposal
Incinerator	Ash (placed in closed drums)	Inert	Landfill (if non-hazardous)
Fuel spill	Hydrocarbon-contaminated soil	-	On-site treatment using landfarm facility
Fuel spill	Hydrocarbon-contaminated snow/water/ice	-	On-site treatment and reuse of product if practical

TABLE 3-2: WASTE HANDLING AND DISPOSAL BY WASTE TYPE

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Absorbents – and other similar spill response material	Petroleum	Hazardous if used for a spill clean-up. Not TDG regulated.	Collect in white Quatrex bags. Store full bags in the hazardous waste storage areas until final disposal.	Offsite disposal
Activated Carbon	Petroleum	Hazardous. Not TDG regulated	Collect in white Quatrex bags. Store in the hazardous waste storage areas until final disposal.	Offsite disposal
Aerosol Cans	HHW	Hazardous. TDG regulated as "Aerosol, Flammable, Class 2.1, UN 1950"	Disposal bins located at various locations inside the main facilities, and at the waste management building. Store full drums in the hazardous waste storage areas in open top drums.	Offsite disposal
Appliances	Inert/ Chemical	May be hazardous.	Appliances may contain ozone depleting substances (refrigerator) or electronic boards. May require removal of hazardous components before final disposal in the landfill. Manage accordingly. Store in contained location until approval by Environment to dispose in landfill.	Landfill
Batteries, wet (lead - acid)	Chemical	Hazardous. TDG regulated as "Batteries, wet, filled with acid, class 8, UN 2794"	Collect in black Quatrex bags in workplace sorting areas. Vehicle batteries should be drained of power and terminals should be covered with electrical tape. Stacked layers of vehicle batteries should be separated by a layer of cardboard. Store full bags in the hazardous waste storage areas until final disposal.	Offsite disposal
Batteries, rechargeable (NiCad, Mercury, Lithium, Silver-Oxide)	HHW	Hazardous. Small household-type batteries are generally not TDG regulated.	Disposal bins (same as for alkaline batteries) are located at various locations inside the main accommodation facilities. Segregate per type and transfer to different 20L pails. Transfer to 20L pail, then in open top drums. Store in the hazardous waste berm until final disposal. Computer batteries should be brought to the Environment Office.	Offsite disposal
Batteries, dry (alkaline)	HHW	Hazardous. Not TDG regulated.	Disposal bins (same as for rechargeable batteries) are located at various locations inside the main accommodation facilities. Transfer to 20L pail, then in open top drums. Store in the hazardous waste storage areas until final disposal.	Offsite disposal
Biomedical Waste – Sharps, human anatomical, blood, and body fluids	Biomedical	Biomedical hazard.	Contain and store in suitable biohazard containers at the medical office until disposal.	Offsite disposal
Calcium Chloride	Chemical	Hazardous. Not TDG regulated.	Collect and store in white Quatrex bags.	Offsite disposal or use as dust suppressant on roads (as authorized)

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Cardboard	Inert	Non-hazardous	Suitable for open-burning, incineration or disposal in the landfill. Store accordingly in adequate container before final disposal. Incinerate if in contact with food.	Open-burning/ Landfill
Cement	Inert	Non-hazardous, inert waste.	May be used as a landfill cover if crushed.	Landfill
Chemicals – spent lab reagents	Chemical	Hazardous. Shipping TDG instructions should follow MSDS recommendations.	Management method should follow MSDS recommendations.	Offsite disposal
Cigarette butts	Chemical	Hazardous. Not TDG regulated.	Collect in cigarette butts receptacles outside each main entrance.	Incineration
Compressed gas cylinders	Chemical	Hazardous. TDG regulation varies depending on gas.	Safely empty cylinders of all gases. Store away from sources of heat and ignition. Return containers to manufacturer for reuse following TDG procedures. When not shipped offsite, remove valves and purge cylinder with compressed air or inert gas. Dispose of as metal.	Offsite reuse /Landfill
Contaminated Soils	Petroleum	Hazardous. Not TDG regulated	Store and remediate on site in the Landfarm Facility.	Onsite treatment
Contaminated snow, ice	Petroleum	Hazardous. Not TDG regulated	Store in contaminated snow dump adjacent to Landfarm Facility. Treatment in oil/water separator.	Onsite treatment
Contaminated water	Petroleum	Hazardous. Not TDG regulated	Collect in trays, drums, or pumped via pipeline. Store in closed top drums or bladders in hazardous waste storage areas until treatment in oil/water separator. Or deposit at Milne Port contaminated snow containment berm.	Onsite treatment
Diesel fuel	Petroleum	Hazardous. TDG regulated as "Diesel, Class 3, UN 1202, FP 39°C"	Collect in trays, drums, or pumped via pipeline. Store in closed top drums in hazardous waste storage areas until final disposal. Not a waste unless contaminated by a substance that makes it unusable as a fuel. Diesel not suitable as mobile fuel can be used for heating values.	onsite recovery/ Offsite disposal
Drums – empty	Petroleum	Hazardous. Not TDG regulated	Empty drums frequently contain residuals. Drain content of drum in adequate container. Crush and package drums on pallets.	Offsite disposal
Drums – residuals	Petroleum	Hazardous. Considered the same hazard as original product.	Drum residuals are to be collected in different containers for reuse (diesel, jet A, oil) or disposal (antifreeze or other product). Reuse diesel and oil for heating and other uses.	Onsite recovery/ Offsite disposal

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Electronic Equipment	HHW	Hazardous. Not TDG regulated. May contain heavy metals.	Typical electronic wastes consist of used computers, cell phones, cameras, TVs and monitor screens, media players, switches, and testing equipment. Electronic wastes shall be brought to the Environment Office or placed in a Quatrex bag in a contained storage facility until offsite shipment for recycling or final disposal. Batteries shall be removed of equipment and managed accordingly.	Offsite recycling or disposal.
Fluorescent Lamps – bulbs and tubes	HHW	Hazardous in large quantities (trace amount of mercury). Not TDG regulated.	Bulbs will be brought to the Environment Department to be processed using an onsite bulb eater that crushes the bulbs and captures residual mercury vapour. Crushed bulbs and filters generated by the bulb eater will be sent off site for final disposal in sealed drums/barrels.	Onsite processing /Offsite disposal
Filters – Lube oil	Petroleum	Hazardous. Not TDG regulated.	Drain and crush filters. Collect in open top drums and store in the hazardous waste storage areas until final disposal offsite.	Offsite disposal
Food Waste/ Putrescible	Domestic	Non-hazardous	Collect in plastic bags. Store in animal proof steel bins outside kitchens. Incinerate each or every other day.	Incineration
Gasoline	Petroleum	Hazardous. TDG regulated as "Gasoline, Class 3, UN 1203, FP -39°C"	Collect in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal. Not a waste unless contaminated by a substance that makes it unusable as a fuel.	Waste fuel will be sent offsite for disposal.
Clean Glass	Inert	Non-hazardous, inert waste	Collect and store in landfill bins.	Landfill
Glycol	Chemical	Hazardous. Not TDG regulated.	Collect in trays, drums, or pumped via pipeline. Store in closed top drums or 1000L totes in the hazardous waste storage areas until final disposal.	Offsite disposal
Grease	Petroleum	Non-hazardous	Store in open top drums in the hazardous waste storage areas until final disposal.	Offsite disposal
Human Waste	Domestic	Hazardous. Not TDG regulated	Human waste that cannot be treated by onsite WWTP will be stored in closed top drums in the hazardous waste storage areas until final disposal.	Offsite disposal
Hydraulic fluid	Petroleum	Hazardous. Not TDG regulated.	Collect in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal.	Offsite disposal
Incinerator Ash	Inert/ Chemical	Usually inert, if non-hazardous.	Composition of incinerator ash will depend on the wastes that were incinerated. Stored in open top drums. Non-hazardous ash will be landfilled. Hazardous ash will be shipped offsite for final disposal.	Landfill/ Offsite disposal (if hazardous)

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Jet A Fuel	Petroleum	Hazardous. TDG regulated as "Aviation gas, UN 1863, FP 39°C"	Collect in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal. Not a waste unless contaminated by a substance that makes it unusable as a fuel. Jet A not suitable as aviation fuel can be used for heating purposes.	Onsite recovery/ Offsite disposal
Kitchen Grease/Oil	Domestic	Non-hazardous.	Collect in closed-top drums or 20L pails in a sea container outside the kitchen. Suitable for incineration or stored in sea cans until offsite disposal.	Incineration/ Offsite disposal
Lube Oil	Petroleum	Hazardous. Not TDG regulated.	Collect in trays, drums, or pumped via pipeline. Store in 1000L totes in the hazardous waste storage areas until final disposal. Possible reuse as heating oil or other uses in approved furnaces.	Onsite reuse/ Offsite disposal
Metal	Inert	Non-hazardous, inert waste	Collect and store in landfill bins.	Landfill
Methanol	Chemical	Hazardous. TDG regulated as "Methanol, Class 3, UN 1230, P.G. II"	Collect in UN certified container. Store in the hazardous waste storage areas until final disposal.	Offsite disposal
Oily rags and similar debris	Petroleum	Not hazardous if used for cleaning. Classified as absorbent if used to clean-up spills	Suitable for incineration. Collect in drums at workplace sorting areas. Bring to incinerator and disperse between waste loads.	Incineration
Ozone Depleting Substances (ODS, i.e. air conditioning and refrigerant gases)	Chemical	Hazardous.	ODS must be removed by certified technician before disposal of unit. ODS must be stored as per instructions from certified technician.	Offsite disposal
Paint	Petroleum	May be hazardous if oil based.	Collect in white Quatrex bags. Store in the hazardous waste storage areas until final disposal.	Offsite disposal
Paper Products	Domestic	Non-hazardous	Collect in incinerator waste bins. If product is cardboard, manage accordingly.	Incineration
Plastics – food packaging, bags, etc	Domestic	Non-hazardous	Collect in garbage bags.	Incineration
Plastics – oil/ hydrocarbon containers, contaminated berm liner	Petroleum	Hazardous. Not TDG regulated.	Drain fluid in appropriate tote or drum. Collect in white Quatrex bags. Store in the hazardous waste storage areas until final disposal.	Offsite disposal
Plastics – bulky	Inert	Non-hazardous	Collect and store clean containers or other clean component in landfill bins.	Landfill
Plastics – PVC	Inert	Non-hazardous	Collect and store in landfill bins.	Landfill
Plastics – Styrofoam	Inert	Non-hazardous	Collect in white Quatrex bags. Store in landfill bins.	Landfill

Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Textiles	Inert	Non-hazardous	Collect and store in landfill bins. Incinerate if textiles came in contact with food.	Landfill/ Incineration
Tires	Inert	Non-hazardous	Collect and store in laydown. If shredded, tires may be useful as a landfill cover.	TBD
Unusual waste	To be determined	To be determined	Bring to the Environment Office, if size permits. Proper management and disposal will be determined on a case-by-case basis.	To be determined
Vehicles	Inert/ Petroleum/ Chemical	Non-hazardous if drained of all fluids.	Drain all fluids and dispose appropriately. Store in laydown area until approval to dispose in landfill by the Environment Department.	Landfill
Wood - scraps	Inert	Non-hazardous, inert waste	Collect and store in landfill bins. Suitable for incineration if in small amount.	Landfill/ Incineration
Wood - treated	Inert	Non-hazardous, inert waste	Collect and store in landfill bins.	Landfill
Wood - untreated	Inert	Non-hazardous, inert waste	Collect and store in untreated wood bin.	Open-burning

TABLE 3-3: ESTIMATED DOMESTIC SOLID NON HAZARDOUS WASTE GENERATION

Waste	Waste Description	Disposal Method	Est. Total Annual Production[1] (tonnes)
Organic	Kitchens	Incinerator	318
Paper	Packaging/Offices	Incinerator/On-site landfill	91
Plastic	Offices/Camps	Incinerator/On-site landfill	65
Cardboard	Packaging/Camps	Incinerator	69
Cloth	Camps	Incinerator	21
Multi-Material	Packaging/Camps	Incinerator/On-site landfill	15
Metal	Packaging	On-site landfill	9
Glass	Camps	On-site landfill	8
Wood	Packaging	Incinerator	6

1. Composition based in part on 2011 Mary River Waste Audit results (Aug 27 - Aug 29), Assume 50% of waste generated to be domestic

3.3 Project Waste Flow

Waste flow block diagrams have been developed for Milne Port and Mary River waste streams and are provided in Appendix G. Project waste streams are illustrated by their storage and treatment paths.

3.3.1 Generation Points

Waste generated at Project sites is sorted and collected. To facilitate efficient and effective waste management, waste is required to be disposed of in labelled receptacles based on waste-type and disposal

methods outlined in Table 3-1 and as provided in Baffinland's Waste Sorting Guidelines (refer to Appendix C).

Project waste is managed to ensure that it is prevented from entering water bodies. Areas designated as waste disposal or storage locations are located at a minimum distance of thirty-one (31) metres from the ordinary high water mark of any water body.

3.3.2 Waste Collection

Collection of wastes form Project sites, including permanent shelters along the Tote Road is completed by Project Site Services Personnel trained in Baffinland's Waste Sorting Guidelines (refer to Appendix C) and transported to the appropriate Waste Management Facility where it is sorted (visual inspection) upon arrival to ensure proper segregation.

3.3.3 Waste Management Facilities

Waste Management Facilities are located at Mary River and Milne Port. Each Facility is comprised of a heated all- season building and adjacent laydown areas that provide the following ancillary, functions (refer to Table 3-4):

- A central depot where waste will be managed, properly processed, packaged, labelled, inventoried, secured (e.g., on pallets) and stored for sealift or reuse on site;
- Incinerators (refer to Section 3.5);
- Concrete floors for containment;
- Large bay doors for transferring waste and equipment; and
- Drum crushing machine (Mary River).

Waste oil storage tanks and burners (planned to be installed), as well as oil filters draining and crushing machines are located at Project Mobile Maintenance Facilities.

TABLE 3-4: MARY RIVER PROJECT WASTE MANAGEMENT FACILITIES SUMMARY

Location	Facility Type	Components	Function
Mine Site Milne Port	Waste Management Buildings	• Heated waste management building • Incinerator	A central depot where hazardous waste and waste suitable for incineration generated across the site is managed, properly processed, packaged, labeled, inventoried, and treated prior to storage.
Mine Site Milne Port	Waste Storage Areas	• Secure lined and bermed secondary containment • Used tire storage area	A central depot where hazardous waste, ash, and used tires are stored prior to final disposal off-site or on-site.
Milne Port	Landfarm/Contaminated Snow Containment Pond	• Two engineered geomembrane lined containment cells	The larger west cell is used as a landfarm for the biotreatment of contaminated soil. The smaller east cell is used for the containment of hydrocarbon contaminated snow collected during winter operations.

Location	Facility Type	Components	Function
Mine Site	Landfill	• Licensed Landfill facility • Gated and locked area	Disposal of inert, non-combustible and non-hazardous wastes.
Mine Site Milne Port	Open Burn Areas	• Gated and locked area • Burn box (modified sea-can)	Disposal method for untreated wood, cardboard, and paper products generated on-site.

3.4 Waste Handling and Minimization by Category

This Plan has been developed to ensure that Baffinland's waste management strategies focus on implementing the principles of reduction, recovery, reuse and recycling throughout the Project lifecyde, through the following initiatives:

- Grubbed organic soil material;
- Used oil re-use;
- Non-hazardous waste – construction materials;
- Domestic waste from accommodations complexes;
- Sewage;
- Hazardous waste; and
- Office paper.

3.4.1 Grubbed Organic Soil Material

During land disturbances required for Project operations, grubbed organic soil material will be collected and stockpiled for future reclamation efforts following the decommissioning of facilities or closure of operations.

3.4.2 Used Oil Re-use

Used oil is generated from mechanical equipment use and maintenance activities. Used oil is collected and transported to secondary containment where it is stored in 1,000 L totes. There is potential for use of used oil in waste oil burners (refer to Appendix H). Oil that cannot be reused on-site is shipped off-site as described in the Hazardous Materials and Hazardous Waste Management Plan (BAF-PH1-830-P16-0011). Waste oil used for fuel burner feedstock, will comply with Government of Nunavut's *Environmental Guideline for Used Oil and Waste Fuel (June 2012)* and impurity levels identified in TABLE 3-5.

TABLE 3-5: MAXIMUM LEVELS OF IMPURITIES IN USED OIL/FUEL BURNER FEEDSTOCK

Impurity	Maximum Concentration (ppm)	
	Used Oil	Waste Oil
Cadmium	2	2
Chromium	10	10
Lead	100	100
Total Organic Halogens (as chlorine)	1000	1500
Polychlorinated Biphenyls	2	2
Ash Content	-	0.6% by weight

3.4.3 Non-Hazardous Waste Materials - Construction

Disposal of Project construction waste material including packing and building materials, cables and wiring and other miscellaneous items (e.g., used tools, equipment, etc.) generated during construction activities is completed according to waste type. Most construction waste is segregated into the following waste streams:

LUMBER

Lumber is generated by unpacking and from the disposal of temporary supports/infrastructure. Where possible, shipments are received on pallets that can be reused onsite. Other clean lumber waste is stacked and made available for reuse or burned on-site as per Baffinland's Open Burning of Untreated Wood, Cardboard and Paper Products Procedure (BAF-PH1-300-PRO-0001) (refer to Section 3.6). Chemically treated lumber is separated and, if it cannot be reused onsite, it is disposed of at the Landfill Facility.

PLASTICS

Polyethylene film and other construction plastics include packaging (containers), insulation, pipelines, wire sheath and various other construction consumables. Ad-hoc opportunities for recycling these materials will are investigated and where practical materials are reused, otherwise, they are disposed of at the Landfill Facility.

STEEL AND SCRAP METAL

Steel and scrap metal waste is separated from the other solid waste produced during construction activities by those who generate it. If it is determined to be economically feasible, steel and other scrap metal waste will be shipped off-site for recycling, otherwise it will disposed of at the Landfill Facility.

MISCALLANEOUS CONSTRUCTION WASTE

All other non-hazardous construction waste is segregated at its source into categories, based on potential for recycling, such as metal containers, plastics and corrugated board. If these materials are not suitable for reuse on-site, they are disposed of that the Landfill Facility.

3.4.4 Domestic Waste from Accommodations Complexes

Accommodations complexes house Project personnel in addition to providing meals and other domestic support facilities (e.g. office and recreation facilities). Wastes generated from these facilities are similar in nature to general residential domestic waste, and are comprised of higher percentage of organic (food) wastes.

Project domestic waste is collected in secure containers and removed daily. All containers containing food waste or items potentially contaminated by food (e.g. food packaging) is required to be secured in animal-proof storage waste bins or sea cans to prevent access by wildlife.

Accommodations Complex Manager(s) maintain responsibility for waste management, including source separation and disposal, of waste generated at Project accommodation complexes in accordance with Baffinland's Waste Sorting Guidelines (refer to Appendix C).

3.4.5 Sewage

Sewage generated by Project activities is managed by the principals and procedures provided in Baffinland's Fresh Water, Sewage and Wastewater Management Plan (BAF-PH1-830-P16-0010).

3.4.6 Hazardous Waste

Hazardous waste generated by project activities is managed by the principals and procedures provided in Baffinland's Hazardous Waste Management Plan (BAF-PH1-830-P16-0011).

3.4.7 Miscellaneous Refuse

Disposal of miscellaneous items (e.g., tools, equipment, electronics, clothing, etc.) requiring special handling is completed by the owner/generator under the direction of the Environment Department. Large items containing components of variable waste types are required to be broken-down and disposed of in accordance with Baffinland's Waste Sorting Guidelines (refer to Appendix C).

Mechanical/equipment parts are drained of oil or other fluids prior to disposal. Drained fluids are disposed of in accordance with Baffinland's Hazardous Materials and Hazardous Waste Management Plan (BAF-PH1-830-P16-0011).

3.4.8 Office Paper

White paper waste (e.g. printer paper) generated at the Project accommodations complexes and ancillary offices is collected for recycling. The following procedures have been implemented to reduce the amount of paper waste generated on site:

- Electronic distribution – Electronic forms and notifications increase the amount of desk/shelf space available;
- Double-Sided Printing – When practical ensure all documents are double sided. Double-sided printing has been set as default on all office copiers;
- Print Only the Pages You Need – Rather than printing the entire document consider saving the file electronically as well as cutting and pasting relevant information. Only reprint pages of documents that have been revised rather than the full document;
- Reuse – Collect single-sided paper in a bin so that it could be reused for printing, faxing or scratch pad;
- Route Hardcopy Memos and Newsletters – Instead of making numerous copies, route one copy around the office or post in a centralized area; and
- Copier Maintenance – Only qualified personnel are permitted to complete maintenance on copiers and printers.

3.5 INCINERATORS

Combustible non-hazardous wastes generated at Project sites is incinerated to minimize the negative impacts of attraction vectors to wildlife. Project incinerators are located in Waste Management buildings at Milne Port and Mary River and are identified on the Site Layouts (refer to Appendix B). Incinerator volume capacities are provided in Table 3-6.

TABLE 3-6: INCINERATOR ALLOCATION

Site	Incinerator Waste Produced (t/day)	Incinerators Type	Total Capacity (as per design basis)
Mine Site	1.23	ECO 2TN Mobile Incinerator	2 tonnes
Steensby Port	0.09	500 lbs./Batch Incinerator	0.5 tonnes
Milne Port	0.50	ECO 2TN Mobile Incinerator	2 tonnes

The primary project incinerator model, ECO 2TN Mobile Incinerator, Operating and Maintenance (O&M) Manual is provided in Appendix D. All incinerators have the option of using a liquid waste system to burn waste petroleum products such as used oil or off-spec fuels, which would decrease diesel requirements but would increase power consumption. Larger or additional incinerators may be brought on-line as required to meet the Project's needs during construction or expansion. Prior to commencing any incineration of on-site project wastes, Baffinland will conduct a stack test immediately following the commissioning of each temporary and permanent incinerator. Stack test results will be reported to the NIRB and Environment Canada annually as required. All incinerator systems will operate in accordance with the Government of Nunavut's *Environmental Guideline for the Burning and Incineration of Solid Waste (GN, January 2012)*. This includes all regulatory guidelines, operating procedures and best management practices whenever feasible.

Incinerator waste is segregated according to the Incinerator Operation Procedure (BAF-PH1-320-PRO-0002) to ensure that only suitable materials are incinerated to achieve a complete burn-cycle. Incineration of hazardous wastes, non-combustible materials, or treated wood products is prohibited. The incineration of plastics will be minimized to the maximum extent practicable. Incineration of some food-related and other plastics is unavoidable; however, best efforts are made to reduce/prevent incineration of plastics containing chlorine molecules, which can generate dioxins and furans.

3.5.1 PERSONNEL TRAINING PROGRAMS FOR INCINERATOR OPERATION

Only personnel trained in the Incinerator Operation Procedure (BAF-PH1-320-PRO-0002) are permitted to operate Project incinerators. The incinerator manufacturer is requested to provide on-site specialized training as required.

3.5.2 Air Emissions

Air emission standards establish limits on the levels of contaminants that can be released to the atmosphere. These standards are expressed as a concentration in the exhaust gases leaving the stack and are capable of being achieved using available technology or waste diversion practices. The following emission standards apply to solid waste incinerators operating in Nunavut and have been adopted from the Canadian Council of Ministers of the Environment (CCME) Canada Wide Standards for Dioxins and Furans and Mercury Emissions. For existing, new or expanding solid waste incinerators the maximum concentration (corrected to 11% oxygen at stack) of dioxins, furans and mercury in the exhaust gases from the stack are provided in TABLE 3-7.

TABLE 3-7: AIR EMISSION STANDARDS FOR SOLID WASTE INCINERATORS

Parameter	Numeric Standard	Explanation
Dioxins and Furans	80 pg I-TEQ/cubic metre	Unit of measure is picograms of International Toxicity Equivalents per cubic metre of air
Mercury	20 µg/R cubic metre	Unit of measure is micrograms per Reference cubic metre (the volume of gas adjusted to 25°C and 101.3 kilopascals)

Opacity in the incinerator stack should not exceed 5%. While it is not anticipated that opacity levels would exceed 1% to 2% under normal operation, values greater than 5% indicate the incinerator is not performing properly and additional performance evaluation and adjustment are required.

3.5.3 Ash Disposal

The incineration process produces bottom ash as a process residual. Several factors influence this process including the operating conditions in the burn chamber (i.e. temperature, holding time, air turbulence and waste compaction), and the wetness and chemical composition of the waste. Disposal of incinerator bottom ash and other unburned residue from incinerator operations are completed with caution due to physical (e.g., glass, nails) and chemical hazards. Appropriate PPE is required when operating the incinerator and handling the residual ash (Appendix D). Bottom ash will only be handled once it has completely cooled.

Non-hazardous ash from the incineration process is buried within a designated area at the Landfill Facility. Prior to disposal, Toxicity Characteristic Leaching Procedure (TCLP) (Test method 1311 (US EPA) analyses are completed to determine suitability of incinerator ash for disposal at the Landfill Facility. Baffinland's ash sampling procedures are representative of Landfill Facility in-situ conditions. Composite samples of incinerator bottom ash are collected on a periodic basis for analyses and the laboratory results from TCLP analyses are compared to the Government of Nunavut guidelines for solid waste/process residual concentrations suitable for landfills, as described in the Environmental Guideline for Industrial Waste Discharges (refer to Table 3-8). A more intensive short term sampling program is also utilised to audit the routine ash sampling schedule and yield detailed information on small batches of bottom ash one a year.

If laboratory results are below Industrial Waste Discharges guidelines for process residuals, the ash is suitable for landfill disposal. Closed or covered containers are used when transporting bottom ash from the incinerator to the Landfill for disposal. The ash once deposited in the landfill is promptly covered over with material to prevent migration. If monitoring indicates the ash exceeds applicable guidelines and are not suitable for landfilling, an investigation will be undertaken to identify the cause and identify a solution. Ash that does not meet guidelines following TCLP analysis will be reprocessed on-site or transported off-site for disposal at an appropriate facility. Records of analytical results and volumes of ash are maintained on-site, and will be made available upon request.

TABLE 3-8: GUIDELINES FOR SOLID WASTE/PROCESS RESIDUALS SUITABLE FOR LANDFILL DISPOSAL

Parameter	Concentration maximum (mg/L)
Arsenic	2.5
Barium	100
Cadmium	0.5
Chromium	5
Lead	5
Mercury	0.1
Selenium	1
Silver	5
Zinc	500
Carbon Tetrachloride (tetrachloromethane)	0.5
Methyl Ethyl Ketone	200
Polychlorinated Biphenyls (PCBs)	50 (concentration by mass)
Polychlorinated Dibenzo Dioxins and Furans	0.0000015 (I-TEQ)
Tetrachloroethylene	3
Trihalomethanes (Total)	10
Vinyl Chloride	0.2

Source: Guideline for Industrial Waste Discharges in Nunavut, April 2014

3.5.4 Monitoring During Operations

Monitoring of Project incinerators include routine inspections for signs of leakage, corrosion or other physical defects. If defects are identified, an assessment of health, safety, and environment risk are required prior to further operation of the incinerator, and if significant risks are identified, repairs must be completed before the equipment is used again. Pre-operation stack testing conducted in 2013 confirmed conformance with applicable regulations based on a 'typical' waste stream. As required, annual incinerator emission estimates are reported to the NIRB and Environment Canada.

Operation of Project incinerators are monitored using on-line sensors capable of continuous monitoring of combustion processes; this includes temperature in both the primary and secondary burn chambers, as well as in the stack. Temperature readings outside of the normal range provide warning to the operator that the system is not functioning properly. The combustion process monitor is equipped with visible alarms to warn operators of poor incinerator operation.

Incinerator operation records required to be maintained on-site and provided upon request to the Inspector or the Board include:

- Data from the process monitoring instruments;
- Repairs and maintenance performed on the incinerator and monitoring instruments;
- Modifications to operation procedures;
- Quantity, condition and TCLP analysis results of collected bottom ash;
- Operator training; and
- Incinerator logs recorded by operators and provide waste volumes, waste type and date/time of burn.

3.6 Open Burning

Untreated wood, cardboard, and paper products generated on-site are disposed of by authorized open-burning. Open-burning disposal reduces the volume of inert waste disposed at the Landfill Facility. Only waste suitable for open-burning is segregated for open burning disposal. Baffinland's open-burning authorization prohibits the burning of hazardous wastes, non-combustible materials, food waste, plastics, Styrofoam or treated wood products (plywood). To ensure removal of prohibited, secondary waste segregation is completed during the loading process at Project Open-burn Facilities.

Installation of locked gates limit access to Open-burn Facilities to authorized personnel only. Signs have been posted to outline acceptable and unacceptable waste types at Open-burn facilities as well as the Baffinland's standard operating procedure for Open-burning – "*Open Burning of Untreated Wood, Cardboard and Paper Products Procedure*" (refer to Appendix E).

3.6.1 Personnel Training Programs for Open Burning Operation

Site personnel completing open-burning activities are required to be trained on the specific requirements necessary to maintain compliance with Baffinland's Open-burning authorization. Training includes a review of both Baffinland's Waste Sorting Guidelines (refer to Appendix C), as well as the Open Burning of Untreated Wood, Cardboard and Paper Products Procedure (refer to Appendix E). Training records are maintained on-site and provided upon request to the Inspector or the Board.

3.6.2 Ash Disposal

Bottom ash from the open burning of paperboard packing and untreated wood waste is suitable for disposal at the Landfill Facility. Ash is removed from the Open-burn facilities weekly or as required.

3.6.3 Monitoring During Operations

On-going monitoring of Open-burning operations is completed by Environment Department personnel to ensure operator compliance with Baffinland's Open Burning of Untreated Wood, Cardboard and Paper Products Procedure (refer to Appendix E) and Open-burning authorization.

Weekly inspections of Open-burn Facilities are completed to ensure that wastes deposited remain in compliance with the procedure and are maintained in an acceptable condition and residual ash is removed.

Operators are required to document waste type and volume (based on visual estimation of volume to nearest cubic meter) for each burn event.

3.7 Landfill Facility Operations

The Project Landfill Facility is located at Mary River. All inert, non-combustible (plastics, cement, sand, used construction materials, scrap metal, pipes, glass, etc.) waste generated by Project activities are disposed of the Landfill Facility. Non-hazardous waste, including ashes from the incineration and open-burning of clean wood processes, and waste which cannot be salvaged or incinerated, is also deposited at the Landfill Facility. Disposal of all domestic (food) waste, hazardous and biomedical materials at the Landfill Facility is prohibited. Landfill Facility location is identified on the Mary River Site Layout provided in Appendix B. Anticipated quantities of inert waste expected to be deposited at the Landfill Facility in 2016 are provided in Table 4-3.

3.7.1 Landfill Facility Operations

Baffinland Landfill Facility operations and procedures are provided in Landfill Maintenance and Operation Manual (refer to Appendix F).

3.7.2 Personnel Training Programs for landfill Operation

Landfill Facility Operators are trained the Landfill Operations and safety procedures. Training includes a review of both the Waste Sorting Guidelines (refer to Appendix C) and Baffinland's Landfill Maintenance and Operation Manual (refer to Appendix F). Landfill Facility Operator training records are maintained on-site and provided upon request to the Inspector or the Board.

3.7.3 Monitoring During Operation

Routine inspection Landfill Facility operations will be completed to monitor waste volume, type, source, water seepage, etc. Specifically, landfill monitoring will include: Volume and Waste Composition

The annual volume of waste disposed of at the Landfill Facility will be determined by established survey methods.

Water and Soil Sampling The "Guidance Manual on Sampling and Data Management for Contaminated Sites" (CCME 1993) will be followed for all water and soil quality monitoring. Refer to the Site Water Management Plan for surface water sampling locations and procedures.

Ground temperature monitoring

It is anticipated that the active layer will grade into the landfill waste and cover material. Ground temperatures are not expected to increase based on the types of inert wastes to be disposed. During

regular landfill inspections, signs of ground warming will be monitored by watching for evidence of soil creep.

Leachate Monitoring

Leachate production is not expected based on the relatively dry, inert nature of the waste to be placed in the landfill. However, periodic surface water monitoring will detect landfill leachate, in the unlikely event leachate is generated. The water licence(s) provides for monitoring of surface runoff from the facility and provides water quality objectives that must be met.

Inspection and Maintenance

Routine visual inspections are conducted for various components of the Landfill Facility, including the berms, fencing, etc. As required, maintenance is completed. Inspection and maintenance records are maintained on-site and provided upon request to the Inspector or the Board.

3.8 Hazardous Waste Storage and Disposal

Project waste streams are classified as hazardous wastes based on potential risk to human health and safety, property and the environment. Hazardous wastes generated on-site include, but are not limited to: used oils, solvents and paints, used and/or surplus chemicals, biomedical wastes, gas cylinders, electronic waste, batteries, light bulbs and smoke detectors.

Baffinland is responsible for ensuring that all hazardous waste generated on its site is effectively managed from its generated to final disposal. Hazardous waste must be properly stored, transported, treated and disposed. All site personnel (including contractors) are responsible for managing the waste they generate and are required to comply with the procedure provided in this Plan, Baffinland's Hazardous Waste Management Plan (BAF-PH1-830-P16-0011), and are subject to monitoring and enforcement by Baffinland site Personnel.

3.9 On-Site Treatment of Hydrocarbon Contaminated Material

Soils contaminated by hydrocarbons from spills and site decommissioning initiatives are managed as per the Hazardous Materials and Hazardous Waste Management Plan (BAF-PH1-830-P16-0011).

3.10 Oily Water

Oily water generated by Project activities is managed as per Baffinland's Fresh Water, Sewage and Wastewater Management Plan (BAF-PH1-830-P16-0010).

3.11 Ship Waste Management

Baffinland will not accept hazardous waste originating from a ship or vessel entering Milne Port. Non-hazardous waste generated during on-site ship activities are monitored.

3.12 Used Tires

Used tires are a significant waste stream at most mining operations. Project used tires are either stockpiled for shipment off-site (e.g., re -treading, re-use, or disposal) or are disposed of on-site in a segregated area at the Landfill Facility. Investigation into options that increase Project sustainability if used tires can be re-used on site in an environmentally safe manner (e.g. Ballast along containment berms) will be undertaken whenever possible.

3.13 Propylene Glycol

Propylene glycol is used at the Mary River apron and runway for plane de-icing. Although biodegradable, all storage, handling, use and disposal of propylene glycol will be done in contained areas to avoid spills to the environment. Prior to use, propylene glycol is stored in tightly closed containers or tanks in a cool, dry, well-ventilated area away from incompatible substances. Used propylene glycol is collected, and stored in appropriate on-site facilities (Waste Management Facility) in secured containers until it is shipped off-site for disposal.

3.14 Relevant Operational Environmental Standards

Environmental Protection Plan (EPP) (BAF-PH1-830-P16-0008) Operational Environmental Standard (OES) that are relevant to this Plan are identified in Table 3.9. As required, where there is a modification to a relevant OES, This Plan will be revised to reflect that change.

TABLE 3-9: RELEVANT OPERATIONAL ENVIRONMENTAL STANDARDS

Section	Title/Description
2.5	Geotechnical Drilling Operations
2.6	Equipment Operations
2.7	Fuel Storage and Handling
2.14	Solid Waste Management
2.15	Sewage Treatment
2.16	Hazardous Waste Management
2.17	Road Construction and Borrow Development
2.19	Road Traffic Management
2.21	Exploration Drilling Operations
3.7	Off-Site Waste Disposal Log

4 ENVIRONMENTAL RESPONSIBILITIES

4.1 ROLES AND RESPONSIBILITIES

Baffinland's Environment Department is structured into two components; on-site personnel and off–site personnel. The Project's organisational structure is provided in Figure 4-1.

Baffinland's Project Environmental Department provides direction and oversight for environmental activities on-site. Project departmental accountabilities and responsibilities are identified in Table 4-1.

TABLE 4-1: BAFFINLANDS PROJECT SITE ENVIRONMENTAL DEPARTMENT

Baffinland Iron Mines Corporation Site Environmental Department	
Position	**Responsibilities and Accountabilities**
Environmental Manager	• Reports directly to VP Sustainable Development, Health, Safety and Environment and Indirect reporting and coordination with Operations VP and Director Environment • Overall accountability for environmental staff and performance at site • Coordinates implementation and monitors the performance of the Environmental Management System at site • Liaises with the senior management, regulators and stakeholders • Ensures effective monitoring and auditing of environmental performance of departments and contractors on site and identifies opportunities for improvement • Monitors compliance with permits, licenses and authorizations • Ensures all regulatory environmental monitoring and reporting requirements (monthly, annual) are met • Leads and coordinates site permitting requirements. • Initiates and oversees environmental studies • Oversees investigations and reporting of environmental incidents to regulatory bodies, stakeholders and senior management • Reviews and updates environmental management plans
Environmental Superintendent	• Reports to Environmental Manager • Specific accountabilities for environmental monitoring and reporting • Leads investigations and reporting of environmental incidents onsite • Serves as the liaison for regulators during onsite inspections and visits • Provides ongoing environmental education and environmental awareness training to all employees and contract workers • Oversees environmental database management • Prepares updates for management plans
Environmental Coordinator	• Reports to the Environmental Superintendent and Manager • Specific accountabilities for environmental monitoring and reporting • Provides day to day direction to Environmental staff onsite • Serves as a liaison for regulators during onsite inspections and visits. • Provides ongoing environmental education and environmental awareness training to all employees and contract workers • Assists with environmental database management
Environmental Monitor and Technician	• Reports to the Environmental Superintendent or designate • Assists with environmental database management

Baffinland Iron Mines Corporation Site Environmental Department	
Position	**Responsibilities and Accountabilities**
	• Assists with monitoring and sampling activities as per the Project's management plans
QIA Monitor	• Works alongside the Baffinland Environment Department to ensure the proper implementation of all environmental management and monitoring plans • Acts as the QIA liaison for onsite environmental matters
Environmental Support Groups (Consultants, etc.)	• Assists with sampling, monitoring and reporting activities as required by permits, licenses and environmental management plans • Provides technical expertise to various environmental studies

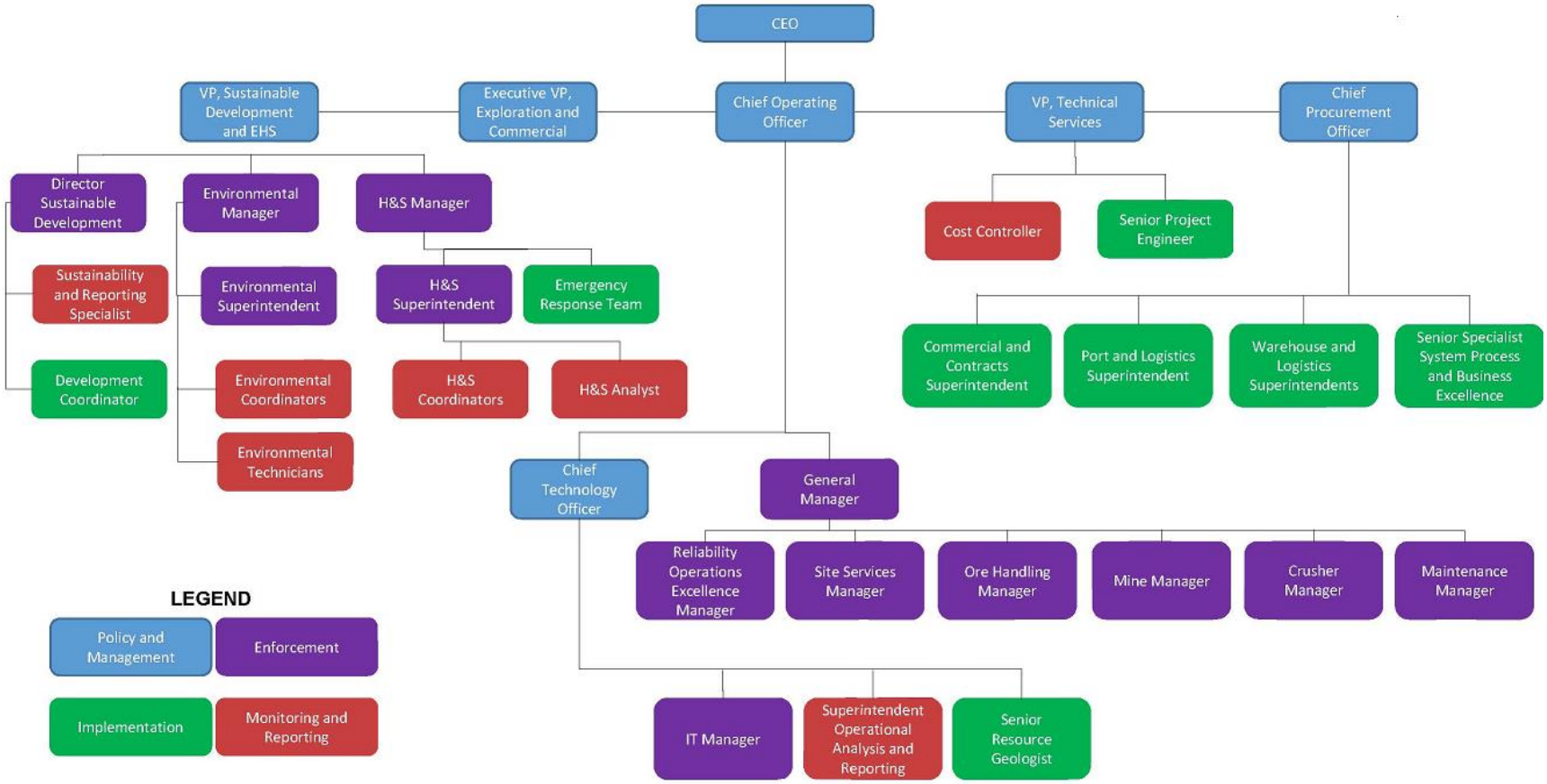

FIGURE 4-1: Mary River Project Organization Chart

4.2 Training and Awareness

Site personnel (including contractors) are required to obtain a general level of environmental awareness and understanding of their obligations pertaining to compliance with the Projects regulatory requirements, commitments and best practices. Site personnel receive prescribed environmental training as part of Baffinland's Mary River Project Site Orientation.

Additional waste management training is provided to individuals and groups of workers assuming specific authority or responsibility for environmental or waste management activities.

Ongoing review of, and modifications to, training and awareness initiatives and programs are completed based on training requirements, audit findings and regulatory framework.

4.3 Communication

Communication methods for the exchange of information across all Project Departments include:

- Formal written correspondence and meetings with stakeholders;
- Site visits by community representatives;
- Design, construction and planning meetings;
- Field inspections and monitoring reports disseminated by the Environmental Manager;
- Electronic communications;
- Tailgate/toolbox meetings;
- Formal written correspondence and meetings with government regulatory bodies; and
- Formal environmental awareness training.

As required information communicated is recorded and filed for future reference. Where appropriate, copies of communications will be forwarded to the Operations Manager(s), and Environmental Manager.

4.4 External Communications

Effective forms of communication include the proactive notification to external stakeholders of Project activity. Project activity updates will be provided to the communities of North Baffin through various means including regular meetings, public notices and radio announcements as appropriate. Baffinland maintains Baffinland Community Liaison Offices (BCLO) to assist in this regard.

5 MONITORING AND REPORTING REQUIREMENTS

5.1 WASTE MONITORING

Waste monitoring includes the visual inspection of the main components of the waste management system (described below) and the measurement and recording of wastes transported off-site. The following information will be reported on an annual basis as currently is the practice:

- The quantities hazardous waste transported off-site for disposal;
- The location and name of the disposal facility for each waste type;
- The date that each was hauled off-site for disposal, for each occasion that these are removed from the site;
- Quantities of non-hazardous inert solid wastes disposed in the landfill; and
- Quantities of hydrocarbon contaminated soils and water processed in treatment facilities.

Inert solid wastes is stored and disposed in a manner that minimizes the opportunity for windblown debris and animal attraction. Waste required to be shipped off-site is recorded using the Off-Site Waste Disposal Log (refer to EPP - Section 3.4).

Waste audits are completed periodically to ensure waste streams are properly segregated.

5.1.1 INCINERATOR MONITORING

Monitoring of incinerator operation ensure proper functioning that appropriate wastes are incinerated as described in Section 3.5 as well as per the Incinerator Operation Procedure (refer to Appendix D).

5.1.2 OPEN BURNING MONITORING

Monitoring of Project open burn activities are completed as described in Section 3.6 and in accordance with Baffinland's Open Burning of Untreated Wood, Cardboard and Paper Products Procedure (refer to Appendix E).

5.1.3 LANDFILL MONITORING

Landfill activities will be monitored as described in section 4.7 as well as per the Landfill Maintenance and Operation Manual (refer to Appendix F) and involves visual inspections to ensure the disposal of inert wastes only, and that adequate cover is provided to contain waste to prevent wind dispersal. Prior to being introduced to the Landfill Facility, new wastes will be managed and monitored for compatibility.

5.1.4 HAZARDOUS WASTE MONITORING

All Hazardous waste will be monitored according the Mary River Project Hazardous Material and Hazardous Waste Management Plan (BAF-PH1-830-P16-0011).

5.1.5 LANDFARM MONITORING

Landfarm activity will be monitored according the Landfarm Operation Maintenance and Monitoring Manual (BAF-PH1-320-T07-0004) provided in the Hazardous Material and Hazardous Waste Management Plan (BAF-PH1-830-P16-0011).

5.2 Operations Monitoring

In addition to specific monitoring and reporting requirements under the regulatory approvals such as the water licence, QIA land lease, land use permits, and fisheries authorization as well as monitoring of project effects, the Environmental Manager will coordinate routine inspections of various aspects of the operations. Routine inspections are conducted to confirm overall conformance with the requirements of the Waste Management Plan, EPP, and standard operating procedures, and will include inspections of Project waste management activities.

Compliance Monitoring Forms are used to document the findings and required actions. These reports are generated as an internal operational management tool to promote continuous improvement in environmental performance and stewardship. Checklists are used as internal operational monitoring and compliance tools. These checklists are integrated into the EPP and other operating procedures/work instructions.

5.3 Data Management

The Environmental Manager is responsible for data management and reporting related to waste management. The data management system includes conducting routine inspections and monitoring, and providing findings to appropriate parties as required.

5.4 Water Licence Reporting

Project waste disposal is regulated by the NWB through the water licensing process, there will be monthly water licence reporting requirements. Submission of annual reports including the following information are completed to meet the requirements specified by the water licence, the NIRB, and the Landowners:

- GPS coordinates and photographic records of waste disposal facilities and status;
- Annual geotechnical inspection recommendations from a geotechnical engineer concerning the performance of lined and bermed waste containment structures;
- Quantities and fate of various types of waste on and off site; and
- Other information as requested by the NWB or NIRB.

Records of waste disposal activities will be available upon request to NWB and Landowner's Inspectors.

5.5 Stakeholder Reporting

Future arrangements regarding reporting could be made through the Inuit Impact Benefits Agreement (IIBA) or other mechanisms; this will be incorporated in future Plan updates.

As required by Baffinlad's Type A Water Licence, Baffinland shall submit to the Board and the Inspector, thirty (30) days prior to the removal and transfer of waste, a declaration of authorization from any community receiving waste from the project, which clearly states that authorization has been granted to Baffinland for the deposition of waste.

6 ADAPTIVE STRATEGIES

Baffinland is committed to continual improvement in its work activities with the aim of reducing risks to the environment and improving operational effectiveness. The strategy employed at Baffinland is regular monitoring supported by operational change and adoption of other mitigating measures if warranted.

Housekeeping and operational measures have been instituted. As part of the EPP, work procedures will continuously be adapted with the goal to reduce, recover, reuse and recycle waste. Regular scheduled inspections of waste management facilities along with the non-compliance reporting system described in Section 7 will ensure continual improvement and adaptation of waste management strategies throughout the life cycle of the Project.

As per the requirements of Baffinland`s EHS Management Framework Standard (BAF-PH1-830-STD-0001), the Company will conduct and document management reviews of its Waste Management Plan on a regular basis. Such reviews will ensure the integration of monitoring results for the waste management plan are integrated with other aspects of the Project and that necessary adjustments are implemented as required. These reviews also provide a formal mechanism to assess the effectiveness of the management in achieving the company's objectives and maintaining on-going compliance with Project permits and authorizations.

7 QA/QC

To comply with Baffinland`s EHS Framework Standard (BAF-PH1-830-STD-0001), regular audits are required to be undertaken to ensure compliance with the current Waste Management Plan and that best management practices are implemented for waste management.

7.1 Incinerators

Project incinerators are installed at Milne Port and Mary River and utilizes dual chamber, variable air flow design technology and is specifically designed for remote camp operations. QA/QC procedures for air emission monitoring are outlined in the Air Quality and Noise Abatement Management Plan (BAF-PH1-830-P16-0002).

7.2 Open Burning

To prevent the release of dangerous toxins and/or emissions only material, such untreated wood and cardboards, is approved for open burning. Regular audits are completed ensure compliance with Baffinland's Open Burning of Untreated Wood, Cardboard and Paper Products (refer to Appendix E). Open- burning records are maintained on-site and are made available upon request, to an Inspector or the Board. .

8 REFERENCES

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