

APPENDIX G.8.9

Hazardous Materials and Hazardous Waste Management Plan



Baffinland Iron Mines Corporation

BIM-5200-PLA-0007 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT PLAN

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TRACK CHANGES TABLE

Index of Major Changes/Modifications in Revision 7

Item No.	Description of Change	Relevant Section
1	Migrated to new plan template and reordered sections accordingly	All Sections
2	Updated purpose information	1.0
3	Added to federal regulations list and updated TDGA class information	2.1.1
4	Removed definitions table and added abbreviations table	3.0
5	Included additional AN storage and transportation information	4.1.1
6	Added sewage sludge disposal information and updated safe handling practices	4.2
7	Added containment information for drummed and bulk fuel storage	5.4.1
8	Edits and inclusions to Table 3 - Hazardous Waste Management Methods	5.4.4
9	Added environmental and geotechnical monitoring information	6.1
10	Updated regulatory reporting requirements	6.3
11	Added document review information	7.0
12	Created Roles and Responsibilities table	8.0
13	Added training and competency information	9.0
14	Updated related documents section	10.0

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1. PURPOSE

As required by the 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-MRY2131 (Type B Water Licence) that have been issued for the Mary River Project (Project), Baffinland has developed a Hazardous Materials and Hazardous Waste Management Plan (Plan). The Plan shall be regularly assessed and revised based on changes to Project infrastructure, operational procedures, and protocols. Updates to this Plan shall be completed in accordance to the terms and conditions of Baffinland's Type 'A' Water Licence, Type 'B' Water Licence, the Commercial Lease – Q13C301 (Commercial Lease), and Project Certificate No. 005 – Amendment No. 1 (Project Certificate) and any subsequent requirements that may be issued.

The purpose of the Plan is to identify Baffinland's framework for effective management of hazardous materials and hazardous wastes generated throughout the Project site at this phase of the mine lifecycle. This Plan provides guidance on the management of Hazardous Materials and Hazardous Wastes (HMHW) from the generation point to final disposal, including identification, characterization, collection, handling, segregation, processing, packaging, transport, interim storage and final treatment or disposal. The plan also provides guidance and instructions for the prevention, detection, containment, spill response, and mitigation of accidents that could result from handling hazardous materials and hazardous waste

Tables of concordance with the applicable Type A and Type B Licences Conditions and Authorizations issued for the Project and are provided in Appendix B.

The Plan is based on the following recognized industry best management practices (BMP's) established for the management of hazardous materials and hazardous waste generated at Project sites:

- Identify hazardous materials and hazardous waste inventories;
- Characterize HMHW and assess the potential safety and environmental hazards associated with hazardous materials and hazardous waste;
- Assign oversight and outline the responsibilities and accountabilities for the management of hazardous materials and hazardous waste;
- Identify methods for the transportation, storage, handling and use of hazardous materials and hazardous waste;
- Identify safe and effective short-term storage and disposal mechanisms;
- Prepare, assess and review contingency and emergency response plans;
- Facilitate and ascertain effective training programs for management, workers, and contractors whose responsibilities include handling hazardous materials and hazardous wastes;

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- Maintain and review records of hazardous material consumption and hazardous waste generation, including incidents in order to anticipate and avoid impacts on personal health and the environment.

2. APPLICATION

The Plan applies to all Baffinland departments and prescribes roles and responsibilities for Baffinland employees and contractors at Project sites to ensure that hazardous material and hazardous waste management is conducted in a safe, efficient and environmentally compliant manner that minimizes the potential for adverse impacts to the environment.

2.1 REGULATORY REQUIREMENTS

Hazardous materials used and hazardous wastes generated at the Project will be manufactured (i.e. explosives), transported, stored, and handled in compliance with applicable federal and territorial regulations. The following federal and territorial legislations provide specific requirements for the management of the different types of hazardous materials and hazardous wastes at the Project:

2.1.1 Federal

- Hazardous Products Act (part III) and associated Hazardous Products Regulations (WHMIS – Federal)
- Controlled Products Regulation (also WHMIS)
- Cross-border Movement of Hazardous Waste and Hazardous Recyclable Material Regulations
- Transportation of Dangerous Goods Act and Regulations (TDGA and TDGR). The TDGA classifies hazardous materials into the following nine primary classes:
 - Class 1 – Explosives
 - Class 2 – Gases
 - Class 3 – Flammable liquids
 - Class 4 – Flammable solids
 - Class 5 – Oxidizing Substances and Organic Peroxides
 - Class 6 – Poisonous (toxic) and Infectious Substances
 - Class 7 – Radioactive Materials
 - Class 8 – Corrosives
 - Class 9 – Miscellaneous Products or Substances and Organisms
- Explosives Act.
- National Fire Code.
- Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products (CCME, 2015).
- Environmental Emergency Regulations (2019)

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2.1.2 Territorial

- Transportation of Dangerous Goods Act (TDGA) (RSNWT 1988) and Regulations.
- Explosives Use Act and Regulations.
- Fire Prevention Act and Regulations.
- Mine Health and Safety Act and Regulations.
- Environmental Protection Act and all other applicable territorial regulations and guidelines.

2.2 RELATIONSHIPS TO OTHER BAFFINLAND MANAGEMENT PLANS & POLICIES

This Plan is intended for use in conjunction with the following Plans; more information is also provided in Appendix B – Tables of Concordance with Applicable Permits and Licenses.

- Air Quality and Noise Abatement Management Plan (BIM-5200-PLA-0005)
- Diesel E2 Plan - Milne Port (BIM-5200-PLA-0017)
- Diesel E2 Plan - Mary River (BIM-5200-PLA-0019)
- Emergency Response Plan (BIM-5000-PLA-0005)
- Environmental Protection Plan (BIM-5200-PLA-0003)
 - Operational Environmental Standards (OESs) that are relevant to this Plan are identified in Table 1.
- Explosives Management Plan (BAF-PH1-830-P16-0009)
- Fresh Water Supply, Sewage and Wastewater Management Plan (FWSSWMP; BIM-5200-PLA-0022)
- Health, Safety and Environment Policy (BIM-5000-POL-0001)
- Interim Mine Closure and Reclamation Plan (BIM-5200-PLA-0026)
- Oil Pollution Emergency Plan – Milne Port (BIM-5200-PLA-0028)
- Oil Pollution Prevention Plan (BIM-5200-PLA-0015)
- Spill Contingency Plan (BIM-5200-PLA-0012)
- Surface Water and Aquatic Ecosystems Management Plan (BIM-5200-PLA-0009)
- Sustainable Development Policy (BAF-PH1-800-POL-0002)
- Terrestrial Environmental Management and Monitoring Plan (BIM-5200-PLA-0010)
- Waste Management Plan (BIM-5200-PLA-0013)
- Waste Sorting Guidelines (BIM-5200-GUI-0002)

Environmental Protection Plan (EPP) Operational Environmental Standards (OESs) that are relevant to this WMP are identified in Table 1. As required, where there is a modification to a relevant OES, this WMP will be revised to reflect that change.

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TABLE 1 RELEVANT OPERATIONAL ENVIRONMENTAL STANDARDS

Section	Title/ Description
4.5	Geotechnical Drilling Operations
4.6	Equipment Operation and Mobilization
4.7	Fuel Storage and Handling
4.14	Solid Waste Management
4.15	Wastewater Treatment
4.16	Hazardous Materials and Waste Management
4.17	Road Construction and Borrow Development
4.19	Road Traffic Management
4.21	Exploration Drilling Operations
Appendix N	Off-Site Waste Disposal Log

Baffinland's Sustainable Development Policy (BAF-PH1-800-POL-0002) identifies Baffinland's overall commitment internally and to the public to operate in a manner that is environmentally responsible, safe, fiscally responsible and respectful of the cultural values and legal rights of Inuit.

Baffinland's Health, Safety and Environment Policy (BIM-5000-POL-0001) is the company's commitment to achieve a safe, healthy and environmentally responsible workplace.

All employees and contractors must comply with the contents of both above-mentioned policies, which are included in Appendix A.

3. DEFINITIONS AND ABBREVIATIONS

3.1 ABBREVIATIONS

Statement	Definition
CCME	Canadian Council of Ministers of the Environment
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
COO	Chief Operating Officer
CWS	Canada Wide Standards
EPP	Environmental Protection Plan
ERP	Emergency Response Plan
ERT	Emergency Response Team
FWSSWMP	Fresh Water Supply, Sewage and Wastewater Management Plan
GN	Government of Nunavut
HMHW	Hazardous Materials and Hazardous Waste
HWB	Hazardous Waste Storage Berms
IMDG	International Marine Dangerous Goods
NWB	Nunavut Water Board
NR	Not Regulated
OES	Operational Environmental Standards
OWTF	Oily Water Treatment Facility

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Statement	Definition
PPE	Personal Protective Equipment
QIA	Qikiqtani Inuit Association
SDS	Safety Data Sheet
SCP	Spill Contingency Plan
SWAEMP	Surface Water and Aquatic Ecosystems Management Plan
TCLP	Toxicity Characteristic Leaching Procedure
TDG	Transportation of Dangerous Goods
WHMIS	Workplace Hazardous Materials Information System
WMP	Waste Management Plan

3.2 DEFINITIONS

Statement	Definition
Putrescible Waste (Domestic Waste)	Wastes that degrade very rapidly, i.e., plants, food scraps or animal remains. Household waste subject to rapid degradation or rapid biological breakdown. May contain food wastes..
Industrial Waste	Solid waste not subject to degradation, has potential to cause contamination through release of surface contamination such as from hydrocarbons.
Inert Waste	Waste which is neither chemically nor biologically reactive and will not decompose
Hazardous Material	Materials deemed hazardous due to chemical or physical characteristics that can interact with human health or the environment. Typical new, refined products still suitable for their intended purpose (e.g. new fuels, lubricants, etc.)
Hazardous Waste	Any hazardous material that can no longer be used for its intended use is a hazardous waste. Wastes generated 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.

4. PROJECT HAZARDOUS MATERIALS AND WASTE

4.1 CLASS 1 - EXPLOSIVE MATERIALS AND WASTE

In supporting the overall Mary River project development, the use of explosives is required to produce construction aggregates and during ore mining. The use of bulk and pre-packaged emulsion explosives will be used based on the expected site conditions.

Ammonium nitrate (AN) is used in the manufacture of commercial blasting explosives, and is an important raw material in the manufacture of other products such as nitro-glycerine, water gels/slurries, and other types of blasting emulsions. AN is a stable, inorganic, solid compound. It is completely soluble in water and must be kept dry to remain effective for its intended purpose. AN, when in solution, can be highly toxic to fish and can enhance the potential for eutrophication in the aquatic receiving environment (ECCC, 2013).

While AN is classified as a hazardous product, its storage and handling at Project sites does not represent significant risk when proper precautions are taken.

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At the Project sites, a qualified explosives contractor (Dyno Noble Baffin Island Inc.) manages AN products and other explosives-related materials. AN storage sea containers (filled with 20 - 1,000 kg Flexible Intermediate Bulk Containers – FIBC (totes) are stored in a safe designated area away from water bodies and from the explosives storage magazines as per regulatory requirements, best management practises and the project Explosives Management Plan (Dyno Noble Baffin Island, 2021).

Individual AN totes are handled when required for the preparation of explosives and are managed as per the Explosives Management Plan – Baffinland (Feb 2021) that was developed by Dyno Noble Baffin Island..

In Canada, the production, storage and use of AN and explosive materials are subject to strict precautionary measures under the Explosives Act and Regulations, and the Canada Transportation Act (TDG/IMDG), and Ammonium Nitrate Storage Facilities Regulations. The Explosives Act is administered by the Explosives Regulatory Division (ERD) of Natural Resources Canada. Storage, use and handling of blasting materials is strictly regulated in Nunavut. All explosives handling, use and storage is completed on-site by Dyno Nobel Baffin Island Inc. and in accordance with the Mary River Project: Explosives Management Plan– Baffinland (Feb 2021).

The storage of AN is also captured by the Canadian Environmental Protection Act and consequently the Environmental Emergency Regulations, therefore requiring an Emergency Response Plan.

The purpose of the Explosives Management Plan is to outline the systems, procedures and best practices that will minimize environmental impacts, specifically impacts to water quality and wildlife during the period where blasting operations are conducted.

4.1.1 Ammonium Nitrate Storage and Handling

Explosive handling facilities and infrastructure to support this work includes:

- One modular emulsion manufacturing plant at the mine site
- One 40x100 foot garage and emulsion loading building
- One 20 x 40 foot AN loading building
- Two AN handling modules and auger systems
- Storage areas for Ammonium Nitrate (in 1000 kg tote bags, stored inside weatherproof shipping containers) near the emulsion plant at the mine site, km80 and at km97.
- Storage for pre-packaged explosives at magazine depots which are separate from the emulsion plant at the mine site
- Raw materials storage inside shipping containers, located near the Milne port, at km97 and at the mine site.

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For additional information pertaining to material information, onsite storage locations and handling procedures of AN, see the Dyno Nobel Baffin Island Inc. Emergency Response Plan, provided in Appendix C.

All on-site transportation is done in accordance with the Mines Act and Regulations as well as with the Transportation of Dangerous Goods Act. Non-process vehicles (i.e. skid steers, loaders, pick-up trucks etc.) are maintained in sound mechanical condition and equipped with safety equipment as required under mine site policy/regulations. Process Vehicles are maintained in accordance with internal maintenance schedules and will be subject to tank certifications under CAN/CSA B620-03.

4.1.2 Emulsion Storage and Handling

Emulsion is stored in a single, 36,000 kg capacity tank within the emulsion loading garage at the Dyno Nobel Emulsion Plant. Smaller quantities may be stored in two (2) bulk emulsion trucks (10,000 kg capacity each) which are parked in the garage at the Dyno Nobel Emulsion Plant when not in use.

Smaller quantities of AN emulsion pre-packaged explosives will be used to begin development of quarry sites. Pre-packaged AN emulsions pose minimal risk to the environment when handled according to manufactures specifications, In the event of a spill, it would be responded to as per the Environmental Emergency Plan.

Table 2 outlines the maximum cumulative quantities of explosives and ammonium nitrate Baffinland stores at the Mary River Project.

TABLE 2 MAXIMUM QUANTITIES OF EXPLOSIVES MATERIALS AT PROJECT SITES

Material	Purpose	Storage Type	Max. Quantity at Site at any Time
Pre-Packaged Explosives	Explosive agent	Magazines and Seacans	800,000 kg
Ammonium Nitrate	Polymer	20,000 kg per Seacan	8,000,000 kg

4.2 SEWAGE SLUDGE

Sewage sludge generated by Project activities will be managed by the principles and procedures provided in Baffinland's FWSSWMP (BIM-5200-PLA-0022). Sewage sludge generated at Project sites from waste water treatment facilities is incinerated or backhauled for off-site disposal. Sewage sludge may also be disposed of in the landfill with the appropriate approvals from authorities and potentially applied to landfarm operations to enhance bio-treatment of contaminated soils. Appropriate PPE is required for workers likely to have exposure to treated sewage sludge, including goggles, face shields, respirators, liquid-repellent coveralls and gloves, worn as per manufacturer instructions, and in accordance with the minimum PPE requirements outlined in Baffinland's Personal Protective Equipment

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Standard. Hand-washing stations with clean water and sanitizing soap are readily available where contact with sewage sludge occurs.

4.3 FUELS, COOLANTS AND LUBRICANTS

Hydrocarbon products and chemicals such as combustible diesel fuels, gasoline, antifreeze, a, lubricants, and cutting oils are widely used at Project sites for power generation, heating, and vehicle operation and maintenance. The transportation, storage, and handling of these products are regulated by both federal and territorial legislation. Regular inspections of storage and distribution facilities are completed to verify mechanical soundness and to prevent leaks and the uncontained release of hydrocarbon products. Table 3 outlines the TDG classification, management method and final disposal for hazardous materials and hazardous wastes at the Project. Refer to the manufacturers SDS for safe handling procedures for hydrocarbon products.

Fuelling activities of storage tanks located at Project Bulk Fuel Storage Facilities (Milne Port and Mine Site Tank Farms) shall be conducted by fully-trained and qualified personnel and in accordance with the Fuel Tanker Offload to Shore Tanks – Milne Inlet Procedure (BAF-PH1-310-PRO-0010), and the Bulk and Equipment Re-Fuelling Procedure (BAF-PH1-350-PRO-0010).

4.4 HYDROCARBON CONTAMINATED SOILS

Soils contaminated by hydrocarbons from spills and Project decommissioning activities are recovered and deposited at Project landfarm facilities for bioremediation or sent off site to licensed facilities for treatment.

The Milne Port Landfarm Facility consists of two geomembrane lined containment cells. The larger (3,383 m³) west cell (landfarm) is used as a landfarm for the containment and bio treatment of hydrocarbon contaminated soils. Treated soils that meet prescribed criteria will be used as landfill cover material or for other purposes. The smaller (929 m³) east cell is used for the containment of hydrocarbon contaminated snow or ice generated during the winter months and the treatment of contaminated water during the summer months using the Oil Waste Treatment Facility (OWTF), if required. Monitoring will be completed at several stages of the treatment process to ensure discharges to the environment are in compliance with the water quality discharge criteria stipulated in Baffinland's Type 'A' Water Licence.

The Mary River Landfarm Facility is located northwest of the Landfill Facility at the Mine Site. This landfarm is for storing and treating soils in two separate lined cells. Future expansion may be for storing ice and snow contaminated with hydrocarbons in a separate lined cell. Impacted hydrocarbon water may be temporarily stored in any cell until treatment on site or is backhauled for offsite disposal.

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Contaminated soils are placed and managed during summer months for remediation through natural microbiological and evaporative processes. Soil that has reached acceptable levels of hydrocarbon biodegradation and meets remediation criteria provided in the Environmental Guideline for Contaminated Site Remediation (GN, 2009) can then be removed and transferred to the landfill or some other appropriate use. The landfarm facilities are operated in accordance with Nunavut government guidelines and Baffinland's Landfarm Operation, Maintenance and Monitoring Manual (BIM-5200-MAN-0001). Periodic inspections and sampling will be conducted to assess the efficiency of the biodegradation process and adequately characterize the soils. If the landfarms are at capacity, any additional contaminated soil will be packaged accordingly and backhauled off site to a licenced facility in southern Canada.

5. HAZARDOUS MATERIALS AND WASTE LIFE CYCLE APPROACH

The intent of the HMHWMP is to implement a hazardous materials minimization approach that focuses on the principles of Lifecycle Management with the goal of managing hazardous material from procurement, to delivery, to the Project site, throughout use, and to ultimate disposal. The approach is to identify supply, transportation, storage and handling, recycle, and waste disposal of hazardous materials and waste. Baffinland is committed to ensuring proper lifecycle management of all hazardous materials used at Project sites.

An inventory of SDSs for materials and chemicals on the Project site can be found on the Baffinland SharePoint website at <http://healthandsafety.baffinland.com/SitePages/Home.aspx>.

5.1 TYPES OF HAZARDOUS MATERIALS/ WASTES

Project activities require the use of the following types of classified hazardous materials:

- Waste hydrocarbons and hydrocarbon products – fuel, lubricants, and solvents used for equipment operation and maintenance
- Any hazardous material that can no longer be used for its intended use is a hazardous waste
- Explosives – ammonium nitrate and high explosives used for blasting
- Laboratory chemical wastes – various by-products classified as hazardous waste and chemicals used in the assay laboratory
- Liquid chemical waste – battery acid, paint, etc.
- Solid chemical waste – dry batteries, fluorescent lights, etc.
- Electronic waste (e-waste)
- Biomedical waste
- Ozone depleting substances – refrigerants, fire suppressants, etc.
- Compressed gas cylinders

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5.2 APPROVAL

Hazardous or potentially hazardous materials and products with SDSs are reviewed and authorized prior to use at Project sites, in accordance with Baffinland's SDS Approval and Management Procedure (BAF-PH1-810-PRO-0025). Requisitions completed for new materials require a product approval form which is required to be reviewed and approved by Health and Safety, and the Environment department. The product approval process involves consideration for more suitable alternative products, potential for permit/regulation applicability, management requirements, and clean-up and storage requirements.

5.3 DELIVERY

Hazardous materials are delivered to the Project via commercial carriers in accordance with the requirements of the TDGA. Carriers are licensed and inspected as required by the Department of Transportation. All required permits, licences, and certificates of compliance are the responsibility of the carrier. All shipments must be properly identified and placarded. Shipping papers are required to be accessible and include information describing the substance, immediate health hazards, fire and explosion risks, immediate precautions, fire-fighting information, procedures for handling leaks or spills, first aid measures, and emergency response telephone numbers.

Transportation companies are required to develop a spill prevention, control, and countermeasures plan to address the materials they are transporting. In the event of a release during transport, the commercial transportation company is responsible for first response, clean-up, and reporting.

5.4 HAZARDOUS MATERIALS AND HAZARDOUS WASTE IDENTIFICATION, HANDLING AND STORAGE

In adherence with Baffinland's EPP, hazardous materials and hazardous waste must be stored in secondary containment. The secondary containment must be of sufficient size to contain a minimum of 110% of the volume capacity of the largest tank or storage container. Types of secondary containment are seacans, drums contained within over-pack drums, industrial spill containment units, spill trays, hazardous waste berms and sealed surfaces i.e. concrete pads. In compliance with Baffinland's Type 'A' and Type 'B' water licences, hazardous materials and hazardous waste must be stored over 31m away from the ordinary high water mark of any water body.

Emergency response procedures developed for the release of chemical substances at Project sites are provided in Baffinland's Spill Contingency Plan (SCP; BIM-5200-PLA-0012). The SCP provides appropriate response procedures for accidental spills or releases of hazardous materials to minimize immediate risks to human health and the environment. Spill kits are located inside hazardous materials and waste storage areas and throughout the Project site. The SCP provides emergency spill kit locations, and inventories). Should the spill of a

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hazardous material or waste occur, Baffinland or its assigned representative will oversee the response, clean-up, relevant reporting, removal of impacted material, temporary storage, transportation and disposal of the material at an approved off-site hazardous waste disposal or treatment facility.

5.4.1 Hazardous Materials Identification, Handling and Storage

When hazardous materials arrive at Project sites, federal WHMIS requires proper labelling of products, and the availability of product information in the form of SDSs. In addition, awareness training for site personnel on how to identify and handle hazardous materials is completed as necessary.

Baffinland has constructed and continues to operate its fuel storage and dispensing facilities in accordance with applicable guidelines and regulations including the CCME Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products (2015), Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (Canadian Environmental Protection Act, 1999 SOR/2008-197 June 12, 2008) and National Fire Code of Canada as provided in Part D, Item 24 of Baffinland's Type 'A' Water Licence. At all Project sites, drummed fuel is placed within engineered lined containment areas, or within seacans. Project bulk fuel facilities are equipped with lined secondary containment berms, engineered to comply with the CCME *Environmental Code of Practice for Aboveground Storage Tank Systems Containing Petroleum Products* (2015).

5.4.2 Hazardous Waste Identification, Handling and Storage

Once consumed or no longer can be used for its intended use, residual hazardous materials become hazardous waste. Hazardous wastes include liquids or solids designated as hazardous wastes under federal or provincial regulations (e.g., hydrocarbon liquids, used batteries, various chemicals, coating materials and a wide variety of other materials including any containers containing residual amounts of hazardous materials). Unidentified chemicals and/or materials generated at Project sites are considered to be hazardous waste (unless otherwise identified) and are disposed of accordingly. Hazardous waste is required to be clearly labelled, and at no time shall hazardous waste be combined with other solid non-hazardous waste. Waste oil generated from Project activities is handled, stored and disposed of according to the GN's Environmental Guidelines for Used Oil and Waste Fuel (GN, 2012). Biological hazardous wastes are generated at the medical clinic and first aid stations. While quantities are small, biological hazardous wastes are packaged, labelled and transported for disposal at an approved off-site disposal facility, or incinerated onsite. Smoking within 10 meters of hazardous waste storage locations is prohibited.

Hazardous waste generated at Project sites is handled by trained personnel according to relevant standard operating procedures, job hazard assessments, and other applicable documents (e.g., the EPP and environmental permits).

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As required by the Commercial Lease, quarterly hazardous waste inventories for hazardous wastes stored in HWBs at Project sites are submitted to the QIA.

Table 3 outlines the TDG classification, management method and final disposal for hazardous materials and hazardous wastes at the Project.

5.4.3 Hazardous Waste Containers

Hazardous wastes generated at Project sites may be temporarily stored in containers until they can be transported for storage at designated on-site hazardous waste storage locations (e.g. HWBs). The following waste storage requirements apply to most hazardous waste:

- Store in original container when possible or in containers manufactured to store hazardous waste
- Ensure containers are sealable and undamaged
- Store in 16 gauge (or lower) metal or plastic drums, or other appropriate containers
- Label according to WHMIS and TDG guidelines
- Keep containers closed or sealed at all times unless in use
- Protect containers from damage and weather
- Store in secure area with controlled access
- Train personnel in appropriate handling practices and
- Store in a manner to prevent spills to environment

5.4.4 Hazardous Waste/Material Storage Areas

Hazardous waste storage areas must meet the following criteria:

- Storage areas for hazardous wastes are located at a minimum of thirty-one (31) metres from the ordinary high water mark of any water body
- Storage areas for hazardous waste are lined and bermed facilities (HWBs) constructed to contain the waste and prevent discharge to the surrounding environment
- Waste within the storage area is segregated by chemical compatibility to ensure the safety of personnel and the environment;
- Only personnel trained in waste handling procedures are authorized to enter Project hazardous waste storage areas
- Regular inspections of storage areas for hazardous waste are completed and documented. Hazardous waste storage containers must be placed so that each container can be inspected for signs of leaks or damage. Leaking or damaged containers will be removed and their content transferred to a sound container.
- The type and quantity of waste in the storage area is documented;

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- Storage sites have emergency response equipment appropriate for spill response for the hazardous waste stored at that location.
- Storage sites are registered as required by regulations.

To comply with the conditions in the Type 'A' Water Licence, Baffinland will provide to the NWB quantities of contaminated soils, water and waste generated at Project sites in the submission of the Annual Report.

TABLE 3 HAZARDOUS WASTE MANAGEMENT METHODS

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	Hazardous Waste	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 with open top.	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 is received by the Environment Department to dispose in landfill.	Onsite landfilling
Batteries, wet (lead - acid)	Chemical	Hazardous. TDG regulated as “Batteries, wet, filled with acid, class 8, UN 2794”	Collect in wood crates with dunnage (i.e. loose wood or similar material) between the layers in workplace sorting areas. Vehicle batteries should be drained of power and terminals should be covered with electrical tape. Store full wood crates in the hazardous waste storage areas until final disposal.	Offsite disposal
Batteries, Lithium ion.	Hazardous Waste	Hazardous. TDG regulated as “Lithium Batteries, Class 9, UN 3090” and “Lithium	Collect and store batteries separately in water-tight containers with chalk (CaCO ₃), lime powder (CaO) or Vermiculite. Store in a sea container with proper identification away from other	Offsite disposal

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Waste Material	Waste Type	Classification	General Management Method	Final Disposal
		Batteries Contained In Equipment; or Lithium Batteries Packed With Equipment, Class 9, UN 3091"	flammable and combustible materials. Batteries should be drained of power and terminals should be covered with electrical tape. Care must be taken to ensure that the batteries are not damaged while awaiting disposal.	
Batteries, rechargeable (NiCad, Mercury, Lithium, Silver-Oxide)	Hazardous Waste	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, then in open top drums. Store in the waste berm until final disposal. Computer batteries should be brought to the IT Department.	Offsite disposal
Batteries, dry (alkaline)	Hazardous Waste	Hazardous. Not TDG regulated.	Disposal bins (same as for rechargeable batteries) are located at various locations inside the main accommodation facilities. Segregate and transfer to different 20L pails, 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)
Chemicals – spent lab reagents	Chemical	Hazardous. Shipping TDG instructions should follow SDS recommendations.	Management method should follow SDS recommendations.	Offsite disposal
Cigarette butts	Chemical	Hazardous. Not TDG regulated.	Collect in cigarette butts receptacles outside each main entrance.	Offsite disposal/ 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 /Landfilling

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Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Contaminated Soils	Petroleum	Hazardous. Not TDG regulated	Store and remediate on site in landfarm facilities	Onsite treatment/Offsite disposal if necessary
Contaminated snow, ice	Petroleum	Hazardous. Not TDG regulated	Store at landfarm facilities (contaminated snow dump) and treat using onsite oil/water separator.	Onsite treatment
Contaminated water	Petroleum	Hazardous. Not TDG regulated	Collected 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 store at landfarm facilities (contaminated snow dump) and treat using onsite oil/water separator.	Onsite treatment
Diesel fuel	Petroleum	Hazardous. TDG regulated as "Diesel, Class 3, UN 1202, FP 39°C"	Collected 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 purposes.	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
Electronic Equipment	Hazardous Waste	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 placed in E-waste bins located at the accommodations facilities or brought to the IT Department, or placed in a Quatrex bag in a contained storage facility until offsite shipment for recycling or final disposal. Batteries shall be removed from equipment and managed accordingly.	Offsite recycling or disposal
Fluorescent Lamps – bulbs and tubes	Hazard Waste	Hazardous in large quantities (trace amount of mercury). Not TDG regulated.	Bulbs disposal bins are located at various locations inside the main accommodations facilities. Repack in original or reused boxes. Store tubes in	Onsite processing/

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Waste Material	Waste Type	Classification	General Management Method	Final Disposal
			recycling container. Store in designated location until offsite shipment for recycling.	Offsite disposal
Filters – Lube oil, fuel	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
Gasoline	Petroleum	Hazardous. TDG regulated as “Gasoline, Class 3, UN 1203, FP - 39°C”	Collected in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal. Not considered a waste unless contaminated by a substance that makes it unusable as a fuel.	Offsite disposal
Glycol	Chemical	Hazardous. Not TDG regulated.	Collected in trays, drums, or pumped via pipeline. Store in closed top drums or 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 (i.e. deposited in barrels at satellite camps – Bruce Head) will be stored in closed drums in the hazardous waste storage areas until final disposal.	Offsite disposal
Hydraulic fluid	Petroleum	Hazardous. Not TDG regulated.	Collected 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. Routine ash sampling and testing will be conducted to classify incinerator ash generated by the Project.	Onsite landfilling/ Offsite disposal (if hazardous)
Jet A Fuel	Petroleum	Hazardous. TDG regulated as “Aviation gas, UN 1863, FP 39°C”	Collected in trays, drums, or pumped via pipeline. Store in closed top drums in the hazardous waste storage areas until final disposal. Not considered 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 seacans until offsite disposal.	Incineration/ Offsite disposal

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Waste Material	Waste Type	Classification	General Management Method	Final Disposal
Lube Oil	Petroleum	Hazardous. Not TDG regulated.	Collected in trays, drums, or pumped via pipeline. Store in 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
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
Plastics – oil/ hydrocarbon containers, contaminated berm liner	Petroleum	Hazardous. Not TDG regulated.	Drain fluid into appropriate tote or drum. Collect in white Quatrex bags. Store in the hazardous waste storage areas until final disposal.	Offsite disposal
Unusual waste	To be determined	To be determined	Contact the Environment Department. 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 deemed appropriate to landfill or backhaul off site.	Onsite landfilling

5.5 HAZARDOUS WASTE TRANSPORTATION OFF-SITE

Hazardous waste generated at Project sites is shipped off-site to approved hazardous waste disposal and recycling facilities. Hazardous waste will not be transported to any community hamlets. Hazardous waste storage and shipping containers will have appropriate containment measures. Manifests will be prepared for materials shipped off-site and shipping receivers are required to maintain chain-of-custody records. Shipping will be undertaken by those trained in TDG. Hazardous waste storage and handling areas are routinely inspected for leaks, spills, and the implementation of appropriate containment measures.

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Baffinland will maintain records of all waste backhauled from Project sites and confirmation of proper disposal through the use of waste manifest tracking systems and registration with the Government of Nunavut. Records of waste disposal activities will be available to the NWB and CIRNAC upon request and are provided in the Type 'A' Annual Report.

6. MONITORING AND REPORTING REQUIREMENTS

6.1 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MONITORING

Individual departments are responsible for maintaining clean, safe and environmentally acceptable work areas. Departments are expected to conduct and document regular inspections of their work areas and facilities to ensure the commitments and expectations regarding health, safety and environment are being met or exceeded. Inspection documentation shall be made available to Environmental personnel conducting periodic inspections or to external inspectors, regulators, and agencies conducting inspections under the terms and conditions of Baffinland's licences, permits, authorizations, leases, and other regulatory requirements.

In addition to departmental inspections, the Environment Department will conduct routine compliance inspections throughout the Project, including the Project's hazardous materials and hazardous wastes facilities, to confirm personnel are operating in accordance with Baffinland's water licences, permits, authorizations, leases, and other regulatory requirements. Environment Department inspections will be conducted to confirm overall conformance with the requirements of this HMMWMP, the EPP, and any other applicable standard operating procedures. Inspection forms will be used to document inspection findings and required corrective actions. Inspection results will be used for internal operational monitoring and compliance tools to promote continuous improvement in Project environmental performance and stewardship initiatives. These forms are integrated into the EPP and other operating procedures/work instructions. The Compliance Inspections Procedure (BAF-PH1-830-PRO-0009) provides a set of operational standards that will ensure environmental compliance inspections are performed safely in all operational areas. The Compliance Inspections Procedure (BAF-PH1-830-PRO-0009) outlines requirements to ensure compliance inspections are documented and that realized and potentially adverse environmental conditions are promptly identified and recorded for dissemination and corrective actions. Regular hazardous materials audits will also be completed by the waste management coordinators where waste is generated to ensure hazardous waste streams are properly segregated.

Items of note related to this management plan that are regulatory inspected are listed below, and further details can be found in the Compliance Inspections Procedure (BIM-5200-SOP-0001).

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Biannual geotechnical inspections of engineered facilities designed to contain water or waste, including secondary containment facilities, landfarms and HWB components of the hazardous waste management system, are conducted as prescribed by the Type 'A' Water Licence by a third-party Professional Engineer. Based on the findings of the geotechnical inspections, maintenance will be completed as required and follow-up actions implemented.

6.2 REGULATORY REPORTING

Submission of quarterly and annual reports, containing the following information, will be completed to meet the requirements specified by the Type 'A' and Type 'B' water licences, Commercial Lease, and the Project Certificate:

- Status and locations of Project waste management facilities
- Quantities of hazardous materials and hazardous wastes transported off-site for disposal
- The location and name of the disposal facility (onsite and offsite) for each hazardous materials and hazardous wastes type;
- The date hazardous wastes were transported off-site for disposal;
- Quantities of hydrocarbon contaminated soils and water processed at treatment facilities
- Other information as requested by regulators

Baffinland will maintain records of all waste backhauled from the Project and confirmation of proper disposal through the use of waste manifest tracking systems and registration with the Government of Nunavut. Records of waste disposal activities will be available to the NWB and CIRNAC upon request.

Results of the Geotechnical Inspections will be submitted to the NWB within sixty (60) days of the inspection, as stipulated in the Type 'A' Water Licence, and also provided to the applicable regulatory agencies in the Type 'A' and NIRB annual reports.

Inspection and maintenance records will be maintained onsite and provided to CIRNAC or the NWB upon request. Baffinland will provide at least ten (10) days notice to CIRNAC prior to planned discharges from any waste management facility, oily water/wastewater treatment facility, sewage treatment facility, and any other relevant facilities associated with the Project. The notice shall include the estimated volume proposed for discharge and the location and description of the receiving environment.

7. ADAPTIVE MANAGEMENT

Baffinland is committed to continuous 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

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other mitigating measures if warranted. Adaptive management strategies for waste management activities at the Project will be based on operational, health and safety, and environmental monitoring results.

Housekeeping and operational measures have and will continue to be instituted. As part of the EPP, work procedures will continuously be adapted accordingly to reduce the use of hazardous materials and hazardous waste generated at Project sites. Regular scheduled inspections of hazardous materials and hazardous waste storage facilities along with the non-compliance system described in Section 7 will ensure continual improvement and adoption of hazardous materials and waste management strategies throughout the lifecycle of the Project.

As per the requirements of Baffinland's HSE Management Framework (BAF-PH1-830-STD-0001), Baffinland will conduct and document reviews of the HMHWMP on a regular basis. Such reviews will ensure integration of waste monitoring results with other aspects of the Project and the implementation of adjustments or amendments as required. These reviews also provide a formal mechanism to assess the effectiveness of achieving Baffinland's objectives and maintaining on-going compliance with Project permits and authorizations.

8. RESPONSIBILITIES

Role	Responsibility
General Manager	<ul style="list-style-type: none"> Responsible for the oversight for all Project operations and allocating the necessary resources for the operation, maintenance and management of Project hazardous materials and hazardous waste management facilities. Ensure adherence to this HMHWMP, and that all departmental managers and superintendents understand the contents of the HMHWMP. Ensuring the preparation, submission and execution of the HMHWMP.
Port & Logistics Manager or Designate	<ul style="list-style-type: none"> Responsible for import and documentation of hazardous materials to site, and providing support to the Site Services Department in regards to shipping hazardous wastes offsite for disposal at licensed waste disposal facilities.
Site Services Manager or Designate	<ul style="list-style-type: none"> The Site Services Manager or designate is accountable for the overall hazardous materials and hazardous waste management system, including the operation, maintenance and management of Project hazardous materials and hazardous waste management facilities. Specifically, the Site Services Manager or designate shall: <ul style="list-style-type: none"> Implement the HMHWMP and associated management plans, procedures, operating manuals, etc. and ensure applicable documents are followed by personnel responsible for hazardous materials and hazardous waste management system operations.

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Role	Responsibility
	<ul style="list-style-type: none"> ○ Ensure personnel responsible operating and managing Project hazardous materials and hazardous waste management facilities and operations are properly trained and competent to perform their assigned responsibilities. ○ Ensure personnel training records are maintained onsite and available to be provided to regulators upon request. ○ Responsible for the operation, maintenance and management of Project hazardous materials and waste management facilities (containment berms, incinerators, and landfarm facilities), and for supporting operations.
Site Services Supervisor (Waste Management Coordinator)	<ul style="list-style-type: none"> • The Site Services Supervisor or Waste Management Coordinator is responsible for the implementation of the operational and management practices for Project incinerators, containment berms, and landfarm facilities, landfill facilities and for supervising operations in accordance with applicable management plans, procedures, manuals, etc. Specifically, the Site Services Supervisor / Waste Management Coordinator shall: <ul style="list-style-type: none"> ○ Work in conjunction with the Site Services Superintendent in executing hazardous materials and waste management system operating procedures and operating manuals. ○ Ensure hazardous materials and waste management facilities and operations are conducted in compliance with relevant procedures and associated documents ○ Submitting hazardous materials and hazardous waste documentation to the Environment Department ○ Conduct periodic waste audits to ensure waste streams are being properly segregated;
Site Services Operators	<ul style="list-style-type: none"> • The Site Services Operator, under the general supervision of the Site Services Supervisor, are responsible for operating Project hazardous materials and hazardous waste facilities in accordance with applicable procedures, manuals, manufacturer instructions, etc. Site Services incinerator, and landfarm operators are also responsible for the following; <ul style="list-style-type: none"> ○ Operating Project incinerators in accordance with the Incinerator Operation Procedure (BAF-PH1-320-PRO-0002) and guidance documentation provided by the manufacturer. <ul style="list-style-type: none"> ▪ Conducting visual inspections of incinerator waste prior to incineration to confirm proper waste sorting and conformance with the Project's Waste Sorting Guidelines (BIM-5200-GUI-0002); ▪ Combining waste streams to achieve incinerator waste loads with appropriate waste compositions to ensure optimal incineration of Project waste; ▪ Recording waste volumes, waste type and date/time of burns in the incinerator logs. ▪ Coordinating with the Environment Department to ensure timely sampling and characterization of ash

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Role	Responsibility
	<ul style="list-style-type: none"> Operating Project landfarm facilities in accordance with the Landfarm Operation Maintenance and Monitoring Manual (BIM-5200-MAN-0001). Inspecting incoming contaminated soils and directing facility users to proper/active stockpile locations. Inspecting incoming waste to the landfill
Project Employees and Contractors	<ul style="list-style-type: none"> All Project employees and contractors are responsible for complying with the requirements of this HMMWMP in the management of all hazardous materials and waste
Environment Department	<ul style="list-style-type: none"> The Environment Manager or designate will work with the Site Services Manager to ensure that hazardous materials and hazardous waste management activities comply with the Type 'A' and Type 'B' water licences and other relevant requirements. Conducting regular compliance inspections of Project hazardous materials and hazardous waste management facilities to confirm conformance with the Project's established operational and management practices and reporting any identified deficiencies to the Site Services department for corrective action; Supporting Site Services Department Waste Audits as required; Providing environmental awareness training to Project employees and contractors, including hazardous materials and hazardous waste management practices Reporting data and results of Project hazardous materials and hazardous waste monitoring programs to the appropriate regulators and stakeholders Support the Site Services department in scheduling stack emissions tests for Project incinerator if requested. Support Site Services in optimizing soil remediation processes and rates and sampling remediating soils to monitor remediation progress. Support Site Services in the treatment of storm water/effluent collected in the Project hazardous waste berms, and landfarm and contaminated snow containment facilities. Sampling incinerator ash, maintaining an ash sample tracking log, and informing the Site Services Supervisor when laboratory results are received if incinerator ash is suitable for disposal at the landfill facility. As required by the Commercial Lease between QIA and Baffinland, quarterly hazardous waste inventories for hazardous wastes stored in Hazardous Waste Storage Berms (HWBs) at Project sites are submitted Hazardous or potentially hazardous materials and products with external SDSs are reviewed and authorized prior to use at Project sites, in accordance with Baffinland's SDS Approval and Management Procedure (BAF-PH1-810-PRO-0025). Requisitions completed for new materials require a product approval form which is required to be reviewed and approved by the Health and Safety, and the Environment Ddepartments. The product approval process involves consideration for more suitable alternative products, potential for permit/ regulation violation, and clean-up and storage requirements.

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Role	Responsibility
Health & Safety Department	<ul style="list-style-type: none"> The Health & Safety Department is responsible for conducting routine inspections of Project hazardous materials and hazardous waste management facilities to confirm conformance with the Project's established operational and management practices, as it relates to the health and safety of Project personnel. Identified deficiencies will be reported to the appropriate department for corrective action. Hazardous or potentially hazardous materials and products with external SDSs are reviewed and authorized prior to use at Project sites, in accordance with Baffinland's SDS Approval and Management Procedure (BAF-PH1-810-PRO-0025). Requisitions completed for new materials require a product approval form which is required to be reviewed and approved by the Health and Safety, and the Environment Departments. The product approval process involves consideration for more suitable alternative products, potential for permit/ regulation violation, and clean-up and storage requirements.

9. PRE-REQUISITE COMPETENCY SKILLS

Baffinland is committed to preventing the release of hazardous materials and hazardous wastes to the environment and incidents resulting from non-conformances. Baffinland has developed and implemented programs for employee training, facility inspection, drills and exercises to evaluate these systems, and procedural review to address deficiencies, accountability, and allow for continual improvement. All new employees receive environmental awareness and general spill training as part of the Project's onboarding on-site orientation. In addition, the Project's EPP is a reference document that provides concise guidance to Project personnel regarding the implementation of appropriate standards for protecting the environment and minimizing adverse environmental effects. EPP training for personnel occurs as part of Baffinland's continuous education and awareness training. Emergency spill response training is completed in conjunction with Baffinland's ERP. To facilitate efficient and effective response to overall emergency response and preparedness, Project personnel who are members of the Emergency Response Team receive advanced training to respond effectively to releases of hazardous materials. Refer to the SCP (BIM-5200-PLA-0012) for additional information regarding spill response training.

All site personnel are required to obtain a general level of environmental awareness, and understanding of their obligations regarding compliance with Baffinland's regulatory requirements, commitments and best practices. Personnel responsible for hazardous materials and hazardous waste management activities receive additional hazardous materials management and hazardous waste training, as required, to ensure they are competent to perform their assigned duties and responsibilities in accordance with applicable procedures, manuals, manufacturer instructions, etc. Department managers (or designate) are responsible for ensuring personnel training records are maintained onsite and available to be provided to regulators upon request.

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Review and modifications to training and awareness initiatives/programs are completed regularly based on training needs and regulatory requirements.

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10. RELATED DOCUMENTS

This Plan is intended for use in conjunction with the following Plans and Regulations; more information is also provided in Appendix B – Concordance Tables.

- BIM-5200-GUI-0002 - Waste Sorting Guidelines
- BIM-5200-MAN-0001 - Landfarm Operation, Maintenance and Monitoring Manual
- BIM-5200-MAN-0002 - Landfill Maintenance and Operation Manual
- BIM-5000-PLA-0005 - Emergency Response Plan
- BIM-5200-PLA-0003 - Environmental Protection Plan (EPP)
- BIM-5200-PLA-0005 - Air Quality and Noise Abatement Management Plan
- BIM-5200-PLA-0009 - Surface Water and Aquatic Ecosystems Management Plan
- BIM-5200-PLA-0010 - Terrestrial Environmental Management and Monitoring Plan
- BIM-5200-PLA-0013 - Waste Management Plan
- BIM-5200-PLA-0015 - Oil Pollution Prevention Plan
- BIM-5200-PLA-0017 - Diesel E2 Plan - Milne Port
- BIM-5200-PLA-0019 - Diesel E2 Plan - Mary River
- BIM-5200-PLA-0022 - Fresh Water Supply, Sewage, and Wastewater Management Plan
- BIM-5200-PLA-0026 - Interim Mine Closure and Reclamation Plan
- BIM-5200-PLA-0028 - Oil Pollution Emergency Plan – Milne Port
- BIM-5200-PLA-0012 - Spill Contingency Plan (SCP)
- BIM-5000-POL-0001 - Health, Safety and Environment Policy
- BAF-PH1-800-POL-0002 - Sustainable Development Policy
- BAF-PH1-310-PRO-0010 - Fuel Tanker Offload to Shore Tanks – Milne Inlet Procedure
- BAF-PH1-320-PRO-0002 - Incinerator Operation Procedure
- BAF-PH1-350-PRO-0010 - Bulk and Equipment Re-Fueling Procedure
- BAF-PH1-810-PRO-0025 - SDS Approval and Management Procedure

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BAF-PH1-830-P16-0009 - Explosives Management Plan

BAF-PH1-830-STD-0001 - HSE Management Framework

BIM-5200-SOP-0001 - Compliance Inspections Procedure

Canadian Council of Ministers of the Environment (CCME), 2015. Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products. (PN 1326).

Environment and Climate Change Canada (ECCC), 2008. Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations. (SOR/2008-197).

Environment and Climate Change Canada (ECCC), 2013. Guideline for release of ammonia in wastewater effluents. Available at: <https://www.canada.ca/en/environment-climate-change/services/canadian-environmental-protection-act-registry/publications/guideline-release-ammonia-wastewater-effluents/guide.html>.

Government of Nunavut (GN), 2009. Environmental Guidelines for Contaminated Site Remediation. Revised March 2009. Available at: <https://www.gov.nu.ca/documents/contaminated-site-remediation-2010>.

Government of Nunavut (GN), 2010a. Environmental Guideline for the General Management of Hazardous Waste. Revised October 2010. Available at: <https://www.gov.nu.ca/environment/documents/general-management-hazardous-wastes-2010>.

Government of Nunavut (GN), 2010b. Environmental Guideline for Waste Paint. Revised November 2010. Available at: <https://www.gov.nu.ca/environment/documents/waste-paint-2010>.

Government of Nunavut (GN), 2011a. Environmental Guideline for Waste Batteries. Revised January 2011. Available at: <https://www.gov.nu.ca/environment/documents/waste-batteries-2011>.

Government of Nunavut (GN), 2011b. Environmental Guideline for Waste Solvents. Revised January 2011. Available at: <https://www.gov.nu.ca/environment/documents/waste-solvent-2011>.

Government of Nunavut (GN), 2011c. Environmental Guideline for Ozone Depleting Substances. Revised April 2011. Available at: <https://www.gov.nu.ca/documents/ozone-depleting-substances-2011>.

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Government of Nunavut (GN), 2011d. Environmental Guideline for Waste Antifreeze. Revised January 2011. Available at: <https://www.gov.nu.ca/environment/documents/waste-antifreeze-2011>.

Government of Nunavut (GN), 2011e. Environmental Guideline for Waste Asbestos. Revised January 2011. Available at: <https://www.gov.nu.ca/documents/waste-asbestos-2011>.

Government of Nunavut (GN), 2012. Environmental Guidelines for Used Oil and Waste Fuel. Revised June 2012. Available at: <https://www.gov.nu.ca/environment/information/used-oil-and-waste-fuel>.

Government of Nunavut (GN), 2014. Environmental Guideline for Biomedical and Pharmaceutical Waste. Issued on March 2014. Available at: <https://www.gov.nu.ca/environment/information/biomedical-and-pharmaceutical-waste-0>.

Nunavut Impact Review Board (NIRB), 2020. In the matter of the Nunavut Land Claims Agreement, Nunavut Land Claims Agreement Act, S.C., 1993, c. 29 Article 12, Part 5 and In the matter of an application by Baffinland Iron Mines Corporation for development of the Mary River Project Proposal in the Qikiqtani Region of Nunavut, NIRB Project Certificate No. 005. Amendment No. 3 dated June 18, 2020.

Nunavut Water Board (NWB), 2015. Type A Water Licence No. 2AM-MRY1325 Amendment No. 1 .

Nunavut Water Board (NWB), 2021. Type B Water Licence No. 2BE-MRY2131.

Qikiqtani Inuit Association (QIA) and Baffinland Iron Mines Corporation (QIA and Baffinland), 2013. The Mary River Project, Commercial Lease – Q13C301 between Qikiqtani Inuit Association and Baffinland Iron Mines Corporation. September 6, 2013.

Revised Statutes of the Northwest Territories (RSNWT), 1988. Transportation of Dangerous Goods Act (TDGA). Available at: <https://www.justice.gov.nt.ca/en/files/legislation/transportation-of-dangerous-goods/transportation-of-dangerous-goods.a.pdf>

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APPENDIX A SUSTAINABLE DEVELOPMENT POLICY & HEALTH, SAFETY AND ENVIRONMENT POLICY

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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.

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 four pillars of our corporate responsibility strategy are:

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

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

Environment

- Baffinland employs a balance of the best scientific and traditional Inuit knowledge to safeguard the environment
- We apply 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. 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

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

Sustainable Development Policy



- 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

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.

A handwritten signature in dark ink, appearing to read "Brian Penney".

Brian Penney
Chief Executive Officer
March 2016

	Health, Safety and Environment Policy	Issue Date: May 3rd, 2019 Revision: 3	Page 1 of 4
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Baffinland Iron Mines Corporation

Health, Safety and Environment Policy

BAF-PH1-800-POL-0001

Rev 3

Approved by: Brian Penney

Title: Chief Executive Officer

Date: May 3rd, 2019

Signature: 

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	Health, Safety and Environment Policy	Issue Date: May 3rd, 2019 Revision: 3	Page 2 of 4
	Company Wide	Document #: BAF-PH1-800-POL-0001	

DOCUMENT REVISION RECORD

Issue Date MM/DD/YY	Revision	Prepared By	Approved By	Issue Purpose
05/07/15	0	EM	TP	For Use
03/07/16	1	JS	BP	Minor edits
04/20/18	2	TS	SA/BP	Minor edits
05/03/19	3	TS	BP	Minor edits

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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.

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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
May 2019

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Baffinland Iron Mines Corporation

Health, Safety and Environment Policy

BAF-PH1-800-POL-0001

Rev 2

Approved By: Brian Penney

Title: Chief Executive Officer

Date: April 20th, 2022

Signature: 

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- 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.
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- Respect for the communities in which we operate is the basis for productive relationships.

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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
April 2022

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APPENDIX B CONCORDANCE TABLES

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Table 4 and 5 show the terms and conditions of the Project's Type 'A' Water Licence (2AM MRY1325 – Amendment No. 1) and the Type 'B' Water Licence (2BE-MRY2131), and the location of each item within the HMHWMP.

TABLE 4 CONCORDANCE TABLE WITH TYPE 'A' WATER LICENCE TERMS AND CONDITIONS

Part	Number	Condition	Section
D	20	The Licensee shall prevent any chemicals, fuel or wastes associated with the undertaking from entering any Water body.	Section 4.1 Section 4.4 Section 5.4
F	4	The Board has approved with the issuance of the licence, the Plan entitled "Baffinland Iron Mines Corporation Mary River Project Hazardous Materials and Hazardous Waste Management Plan", dated April 22, 2013.	N/A
F	5	The Licensee shall locate areas designated for waste disposal at a minimum distance of thirty-one (31) meters from the ordinary High Water Mark of any water body such that the quality, quantity or flow of water is not impaired, unless otherwise approved by the Board in writing.	Section 5.4.4 Section 7.1
F	11	The Licensee 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 for the deposit by the Licensee at the Hamlet's appropriately licensed facilities. The Licensee shall provide at least ten (10) days' notice to the Inspector prior to planned Discharges from any Waste Management Facility, Oily Water/Wastewater Treatment Facilities, Sewage Treatment Facilities, and any other relevant facilities associated with the Project. The notice shall include the estimated volume proposed for Discharge and the location and description of the receiving environment.	Section 5.4.4
F	13	The Licensee shall remove any waste generated from temporary and permanent shelters along the tote road and along the railway corridor for treatment at appropriately licenced Waste Management Facilities.	Section 7.1
	28	The Licensee shall remove from the project site, all hazardous wastes generated through the course of the Construction and Operations Phases, for disposal at an approved Waste Disposal Facility.	Section 5.4.4
F	29	The Licensee shall maintain records of all Waste backhauled from the Mary River Project and confirmation of proper disposal through the use of Waste manifest tracking systems and registration with the Government of Nunavut (GN), Department of Environment. These records shall be made available upon request, to an Inspector or the Board.	Section 7.1

TABLE 5 CONCORDANCE TABLE WITH TYPE 'B' WATER LICENCE TERMS AND CONDITIONS

Part	Number	Condition	Section
D	7	The Licensee shall backhaul and dispose of all hazardous wastes, waste oil and non-combustible waste generated through the course of operation at a licensed waste disposal facility.	Section 5.4.4
D	8	The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste. These records shall be made available to an Inspector or the Board upon request.	Section 7.1

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APPENDIX C DYNO NOBEL EMERGENCY RESPONSE PLAN

(Available at the Dyno Facility Onsite)

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Site Wide	Next Review date: 2026-01-31	Revision: 7
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 **BAFFIN ISLAND**

DYNO

Dyno Nobel

Baffin Island

EMERGENCY RESPONSE ASSISTANCE PLAN

DYNO NOBEL Baffin Island INC.
EMERGENCY RESPONSE ASSISTANCE PLAN
Emergency Response Notification

1. In the event of an emergency Mary river Site Security/MRT will be notified first at:

Radio:

- Radio Channel: EMERGENCY and or SS TAC (Site Services/Security)
- Call “Code 1, Code 1, Code 1”
- State Name
- Emergency Details
- Location
- **Phone:**
- Security 647-253-0596 Ext 6047

2. Dyno Nobel Baffin island on site plant will be contacted at:
(647) 253 0596. Ext 6067

3. Off-Site notification:

	NAME	HOME	CELL
1.	NFLD Hardrok (24hr emergency)	(709) 754-4900	
2.	Jim Kasemets	(709) 632-4007	(709) 632-4007
3.	Roland Walsh	(709) 699-8987	(709) 765-6031
4.	Mark Gillis	(709) 634-2993	(709) 640-7969
5.	Kevin McDonald	(902) 341-2181	(902) 848-6849

Revision and Distribution

An updated copy of this ERAP must be kept in the following locations. Revisions to this ERAP must be reviewed and signed-off on by all who possess a copy:

Emulsion Plant Office	Mary River Site Security
DNBI Pick-ups – LTP040 & LTP043	Mary River MRT
DNBI Loader – LDR020	NHR Office – Corner Brook, NL
Emulsion Trucks – RC913 & RC914	NHR Office – St. John's, NL

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EMERGENCY ACTION

Fire

Fire not involving explosives or ammonium nitrate (AN)

In the event of a fire not involving explosives or ammonium nitrate, Mary River Site Security will be notified of a “CODE ONE” on either the “Emergency” or “SS TAC” channel, or by phone at (647) 253-0596 ext. 6047. Fires which do not involve explosives or ammonium nitrate will be extinguished using normal fire-fighting procedures.

Fire involving explosives or AN

No attempt will be made to fight fires involving explosives or equipment containing explosive residue (AN included). The plant will be shut down and evacuated to the muster station (shown in Appendix C). After a verified head count all individuals will evacuate and blockade the main gate as shown on map to ensure no one enters. When all employees are out of harm’s way, personnel will call a “CODE 1” on radio channel “Emergency” or “SS TAC” or call Security by phone at 647-253-0596 (extension number 6047).

The procedure for plant site evacuation is given in the Plant Evacuation Procedures section (page 6). In all cases, keep away from the gases and smoke released by the fire.

Detonation

In the event of a detonation at the plant, the emergency plan will go into effect immediately, starting with complete evacuation of the plant site. See page 6 of this ERAP.

Lightning

If lightning approaches the plant, remove all personnel to the main gate until all clear. See page 6 of this ERAP. If lightning approaches while the explosives truck is in pit, the truck should return to plant, time permitting, and follow the evacuation procedure. If there is no time to return to plant, leave the truck in the pit and notify the pit supervisor. Evacuate all pit personnel from the pit until the lightning passes.

Spills

Ammonium Nitrate

Ammonium nitrate for use at the Mary River Project is stored in containers in two locations; the KM 97 laydown and smaller quantities at the emulsion plant. The AN prill is stored in 1,000 kg tote bags, 20 of which are stored double-stacked in each of the 20' containers. No AN is stored outside at any time. AN is only withdrawn from the containers when required by plant production. It is loaded directly into the AN Handling Module of the plant to minimize any exposure of the product to the environment (See Appendix C)

Small spills will be swept up with plastic dust pan and broom and emptied in plastic cans marked AN only, to be either recycled in the plant or disposed of in blast holes. Large spills will be dealt with on an individual basis depending upon size of spill. Efforts will be made to contain spill and area will be secured before clean up begins.

Emulsion

Emulsion is stored in a single, 36,000 kg capacity tank within the emulsion loading garage (see the site plan in Appendix C). Smaller quantities may be stored in the two bulk emulsion trucks (10,000 kg capacity each) which are parked in the garages when not in use in the mine.

Small spills will be scooped up with non-sparking shovels and placed in bags, transported to magazine site at KM 105.5, to be stored until ready for disposal in blast holes. Large spills will be dealt with on an individual basis depending upon size of spill. Efforts will be made to contain spills and an area will be secured before clean-up begins. This may involve pumping of large spills into a tanker or scooping up product with shovels.

Oils, fuels, etc.

Methods of spill containment in all fuel/lubricant storage areas within the plant are in use to ensure spills are adequately contained before they occur. However, in the event of a spill outside of the designated storage areas, spills will be diked and absorbent pads used to collect the spill. Residual product not capable of being reused will be contained, collected with adequate amounts of soil absorbent to solidify the material and render it inert.

PLANT EVACUATION PROCEDURES

Evacuation

In the event that a fire involving explosives/AN, or a detonation occurring at the plant, the site must be immediately evacuated. Personnel must report to the muster point (noted on the site plan in Appendix C) where a head-count is to be conducted. When all personnel are accounted for, personnel must proceed to the main gate.

A “Code 1” alert must be broadcast on radio channel “Emergency” or “SS TAC” as soon as it is safe to do so. After repeating “code one, code one, code one”, state your name, location and nature of the emergency. Indicate that there is a fire/detonation at the emulsion plant and no firefighting measures are to be taken. Security will re-broadcast this message to ensure all personnel on site are aware. Inbound or outboard air traffic must be halted or redirected.

As the landfill area is within the danger radius of a fire/detonation at the plant, plant personnel should sweep the landfill on their way out the emulsion plant road to ensure all personnel are clear of this area.

Guarding

The road to the emulsion plant must be guarded at the location given on the overall site plan in Appendix C. **NO ONE IS PERMITTED TO RE-ENTER THE AREA UNTIL AN “ALL-CLEAR” IS GIVEN.** If BIM employees are required to stand guard, Dyno Nobel Baffin Island (DNBI) employees will provide direction.

Response

It is the responsibility of Dyno Nobel Baffin Island management to direct the emergency response to a fire involving explosives/detonation at the plant. If no management personnel are on site, this will be coordinated through by the most senior DNBI employee on site. As previously stated, **the only response to a fire involving explosives/detonation**

at the plant is evacuation of the plant and guarding of all access points until the danger has passed.

RESOURCES

Milne Inlet - Port Site Complex			
For Outside caller - Main line # 647-253-0598 then Dial the Extension			
Name	Position/Department	Phone Number	Internal Ext
MRT	MRT	647-253-0598	4219
Health and Safety Coordinator	Health and Safety	647-253-0598	4122

Mary River			
For Outside caller - Dial 647-253-0596 +ext.			
Name	Position/Department	Phone Number	Internal Ext
Security Lead	Scarlet Security	(647) 253-0596	6047
MRT	MRT	(647) 2	6020
Environment Manager	Environment	(647) 253-0596	6016
Health and Safety Superintendent	Health and Safety	(647) 253-0596	6006

Outside resources include:

Emergency Services Dispatch	(867) 979-5662
R.C.M.P	1 (800) 979-1111
CANUTEC	(613) 996-6666
NRCAN Explosives Regulatory Division	(613) 948-5200
Environment Canada	1 (866) 283-2333

APPENDIX A: FIRE FIGHTING INFORMATION

MATERIAL	RECOMMENDED FIRE-FIGHTING METHODS	SPECIAL CONSIDERATION
Ammonium Nitrate - 83% solution colourless	Use flooding amounts of water in early stages of fire. Keep upwind. This is an oxidizing agent which supports combustion and is an explosive hazard if heated under confinement that allows high pressure buildup. Evacuate to designated area if fire cannot be controlled.	Toxic oxides of nitrogen are given off during combustion. Fire-fighters require positive pressure self-contained breathing apparatus. Avoid contaminating with organic materials.
Ammonium Nitrate Prill - odourless white to light tan crystalline solid	Use flooding amounts of water in early stages of fire. Keep upwind. This is an oxidizing agent which supports combustion and is an explosive hazard if heated under confinement that allows high pressure buildup. Evacuate to designated area if fire cannot be controlled.	Toxic oxides of nitrogen are given off during combustion. Fire-fighters require positive pressure self-contained breathing apparatus. Avoid contaminating with organic materials. Many powdered metals such as Al, Sb, Si, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, Sn Zn and brass react violently and explosively with fused AN below 200 degrees C. Sensitivity to detonation increases when heated.
N-17	Flash Point: Not applicable Extinguishing Media: Not applicable	Wear self-contained breathing apparatus and protective clothing. No unusual fire explosion hazard.
L-2 Clear to pale yellow liquid. Very little if any odor.	Use water, CO ₂ , or Dry chemical	Fire fighters must be equipped to prevent breathing vapors or fumes of combustion. Highly toxic gases may result from exposure to fire or high temperatures.

APPENDIX A: FIRE FIGHTING INFORMATION

MATERIAL	RECOMMENDED FIRE-FIGHTING METHODS	SPECIAL CONSIDERATION
Citric Acid Odourless, white or opaque crystals	Use water, Dry chemical, Alcohol or carbon dioxide	When heated to decomposition, citric acid emits acrid smoke. Fire fighters must wear self-contained breathing apparatus with full piece operated in positive pressure mode.
Fuel Oil (No. 2 diesel) dyed or pale yellow liquid with petroleum odour	Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel from fire. Use foam, dry chemical or water spray to extinguish fire. Avoid spraying water directly into storage container due to danger of boilover.	Avoid strong oxidizing agents.
5168D Emulsifier dark viscous liquid with hydrocarbon odour Sodium Thiocyanate Colourless crystals with slight ammoniacal odour	Use carbon dioxide or dry chemicals on small fires. Use foam (alcohol, polymer or ordinary) and water spray for large fires. Use dry chemical, water spray, water fog, carbon dioxide, foam or sand/earth to extinguish fire.	May form oxides of nitrogen upon thermal decomposition. Positive pressure self-contained breathing apparatus is required for fire-fighters. Contact with strong acids or oxidizing agents or combustion may generate toxic concentrations of sulphur dioxide, oxides of nitrogen, cyanides or hydrogen sulphide.
Sodium Nitrite white or slightly yellow solid	Apply aqueous film forming foam (AFFF) according to manufactures instructions or water in the form of fog for large fires. Use carbon dioxide or dry chemical media for small fires.	Thermal decomposition products include toxic oxides of nitrogen. Sodium nitrite promotes combustion. May explode if heated above 537 degrees Celsius.
Acetic Acid clear colourless liquid with sharp vinegar odour	Use water spray, dry chemical, carbon dioxide or alcohol foam to extinguish fire. Eliminate all nearby sources of ignition since flammable hydrogen gas will be liberated upon contact with some active metals.	Avoid alkalis, oxidizing or reducing materials and nitric acid.

APPENDIX A: FIRE FIGHTING INFORMATION

MATERIAL	RECOMMENDED FIRE-FIGHTING METHODS	SPECIAL CONSIDERATION
Nitric Acid water white to slightly yellow liquid with nitrogen dioxide odour	Use an all purpose type AFFF foam according to manufacturers instructions. Carbon dioxide or dry chemical media for small fires. If only water is available, use it in the form of a fog.	Combustibles can have an increased flammability after contact with nitric acid. Nitric acid reacts with metals to liberate flammable hydrogen gas. Toxic oxides of nitrogen may also be liberated.
Caustic Soda, Anhydrous Odourless, white granular solid	Do not use water, foam, Carbon Dioxide, Dry Chemical. Use media appropriate for surrounding fire and or materials. Remove containers from fire zone wherever possible.	Avoid direct contact of this product with water as this can cause a violent exothermic reaction. Use self-contained breathing apparatus and protective clothing.
Ethylene Glycol Colourless liquid with mild odour	Extinguish fire with water fog, carbon dioxide or dry chemical. Direct application of water or foam into container may cause violent frothing and boilover.	Never use welding or cutting torch on or near drum (even empty or with small residue) because product can ignite spontaneously.

APPENDIX B: ENVIRONMENTAL RELEASE PROCEDURES

MATERIAL	SPILL AND LEAK PROCEDURES	WASTE DISPOSAL
Ammonium Nitrate - 83% solution colourless	<ul style="list-style-type: none"> - Prevent spills from entering water courses. Contain by dyking with earth or other inert material. Allow to freeze. Shovel into clean, non-combustible container. Wash remaining trace residues with water. Wear rubber gloves and chemical goggles to minimize contact with the skin and eyes. - Refer to Ekati Spill Contingency plan – section V page 55 for details on procedures for spills resulting from fuelling of equipment at fuel stations. 	- Dispose of recovered material in approved landfill or other waste disposal facility.
Ammonium Nitrate Prill - odourless white to light tan crystalline solid	- Remove source of heat and ignition. Sweep or shovel spill into a clean, non-combustible container. Wash remaining trace residues with water. Wear rubber gloves and safety glasses to minimize contact with skin and eyes.	- Re-use if possible or dispose of as is in approved facility. Otherwise, dissolve in large amount of water. Add soda ash and mix and neutralize with 6M HCl to produce neutralized sludge. Sludge can then be buried in approved landfill. Sludge incineration requires scrubbing capability for oxides of nitrogen.
N-17 Clear to light blue liquid, sharp vinegar odor	Wear appropriate protective clothing and respiratory protection. Contain spills and avoid discharging into sewer or streams. Neutralize small spills with soda ash or lime. Absorb with vermiculite or other inert material.	- Re-use if possible, otherwise dispose of in approved landfill or other waste disposal facility
Citric Acid Odourless, white or opaque crystals	Sweep up material and place in tightly closed container in a cool, dry and well ventilated area. Avoid discharge into sewer and surface water. Spills to waterways will cause PH depression.	In accordance with Provincial and Federal regulations

APPENDIX B: ENVIRONMENTAL RELEASE PROCEDURES

MATERIAL	SPILL AND LEAK PROCEDURES	WASTE DISPOSAL
L-2 Clear to pale yellow liquid. Very little if any odor	Wear appropriate chemical resistant clothing including rubber gloves, rubber boots. Contain spill and keep out of sewer, storm drains, surface water and soil. Keep away from incompatible materials.	- Dispose of recovered material in approved landfill or other waste disposal facility. Check with Provincial and Federal regulation.
Fuel Oil (No. 2 diesel dyed or pale yellow liquid with petroleum odour.	- Eliminate any source of ignition. Prevent spills from entering water courses. Contain with sand or earth. Recover with pump or inert adsorbent material into clean container. Wear safety glasses and rubber gloves to prevent contact with the eyes and skin.	- Dispose of recovered material in approved landfill or other waste disposal facility.
5168D Emulsifier dark viscous liquid with hydrocarbon odour	- Contain with sand or earth. Recover with inert adsorbent material and transfer into clean container. Wear chemical goggles and rubber gloves to prevent contact with the eyes and skin. Wash area with suitable detergent and rinse with water.	- Dispose of recovered material in approved landfill or other waste disposal facility.
Sodium Thiocyanate Colourless crystals with slight ammoniacal odour	- Sweep or shovel spill into a clean container. Prevent spills from entering any water courses. Wash remaining trace residues with water. Wear rubber gloves and chemical goggles to minimize contact with skin and eyes.	- Dispose of recovered material in approved landfill or other waste disposal facility.
Sodium Nitrite white or slightly yellow solid	- Sweep or shovel into clean, non-combustible drum. Remove any flammable materials and sources of ignition. Flush remaining trace residues with water. Wear chemical goggles and rubber gloves to minimize contact with the eyes and skin.	- Dispose of recovered material in approved landfill or other waste disposal facility.

APPENDIX B: ENVIRONMENTAL RELEASE PROCEDURES

MATERIAL	SPILL AND LEAK PROCEDURES	WASTE DISPOSAL
Acetic Acid clear colourless liquid with sharp vinegar odour	- Eliminate any source of ignition. Prevent spills from entering water courses. Contain with sand, earth or other inert adsorbent material. Transfer into clean, non-combustible container. Wash remaining trace residues with water. Wear chemical goggles and rubber gloves to prevent contact with the eyes and skin.	- Neutralize with soda ash or lime. Dispose of recovered material in approved landfill or other waste disposal facility.
Nitric Acid water white to slightly yellow liquid with nitrogen dioxide odour	- Eliminate any source of ignition. Prevent spills from entering water courses. Contain with sand, earth or other inert adsorbent material. Transfer into clean, non-combustible container. Wash remaining trace residues with water. Wear chemical goggles and rubber gloves to prevent contact with the eyes and skin.	- Neutralize with soda ash or lime. Dispose of recovered material in approved landfill or other waste disposal facility.
Caustic Soda, Anhydrous Odourless, white granular solid	- Sweep or shovel into clean, non-combustible drum. Neutralize the area carefully with weak acid to PH of 6 to 9. Neutralization is expected to be exothermic. Effervescence may result.	Neutralize the area carefully with weak acid to PH of 6 to 9. - Dispose of recovered material in approved landfill or other waste disposal facility
Ethylene Glycol Colourless liquid with mild odour	- Prevent spills from entering water courses. Contain with sand, earth or other inert adsorbent material. Transfer into clean, non-combustible container. Wash remaining trace residues with water. Wear chemical goggles and rubber gloves to prevent contact with the eyes and skin.	- Dispose of recovered material in approved landfill or other waste disposal facility.



