Appendix 1

Waste Management Plan
Diavik Diamond Mine Waste Management Plan

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November 2014
OVERVIEW

Diavik Diamond Mines (2012) Inc. is committed to ensuring that collection, storage; transportation, treatment and disposal of all wastes generated by the project are conducted in a safe, efficient and environmentally compliant manner. The fundamental basis of the plan is the practical and positive management of wastes, incorporating the implementation of a sound waste minimization/reduction program.

REVISION HISTORY

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*On DDMI Intranet under HSEQ MS Element 10
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Introduction

1. Diavik Diamond Mine

The Diavik Diamond Mine is an unincorporated joint venture established by Diavik Diamond Mine (2012) Incorporated (DDMI) and Dominion Diamond Corporation (DDC). DDMI is a wholly owned subsidiary of Rio Tinto plc of London, England. Under the Joint Venture Agreement, DDMI has a 60% participating interest in the project, and DDC a 40% participating interest. DDMI has been appointed Manager and is the corporate entity responsible for conducting project activities.

The Mine is located approximately 300 kilometres (km) northeast of Yellowknife, NT. The Mine (64° 31’ N, 110° 20’ W) is situated on East Island, a 17 square kilometre (km²) island in Lac de Gras, NT. (Figure 1). All major freight is trucked to the Mine over a seasonal winter road from Yellowknife. Worker access is by aircraft to the Mine's private airstrip.

1.1 Effective Date

This plan is an overview of the various waste related management plans in place at the Mine. This plan is effective November 2014. This plan will be reviewed, and updated if required annually on March 31. The first review will be conducted for March 31, 2016.

1.2 Policy

Diavik maintains two overarching policies related to waste management:

- Diavik Health, Safety, Environment and Quality Policy; and,
- Diavik Wildlife Management Policy.

Both policies apply to all DDMI sites, employees, contractors and visitors. The policies are reviewed and updated every two years.

In addition to the above two policies, Diavik’s approach to waste management follows the 4R’s (reduce, reuse, recycle, and recover). Examples of each of the 4R’s in use at Diavik are presented below.

1.2.1 Reduction

Reduction is the elimination or decrease of the volume or toxicity of waste generated. Examples of waste reduction at Diavik include:

- Installation of 9.2 MW windfarm reducing diesel usage and emissions from the Powerhouse.
- Building footprint reduction leading to decreased heating and power requirements.
- Purchasing materials in bulk to reduce material handling and containers.
• Inventory control methods.

• New product approval process, which determines if a less hazardous material substitution is present.

1.2.2 Reuse
Reusing a product more than once for the same or different purpose is effective method of waste reduction. Examples of waste reuse at Diavik include:

• Reuse of Mine Water, Treated Sewage Effluent and Process Water in the Processing Plant to reduce the use of Raw Water from Lac de Gras, to approximately 50% of the water license limit.

• Reuse of waste oil from mobile and stationary equipment to provide heat via a waste oil boiler in the backfill plant, offsetting approximately an equal volume of diesel fuel.

• Remining of waste rock for underground backfill and surface construction.

• Reuse of coarse processed kimberlite as a building material within the processed kimberlite containment facility.

• Reusing empty drums as waste containers.

• Reusing heavy equipment tires as barricades.

• Reuse of parts from surplus equipment.

1.2.3 Recycle
Recycling is the process of remanufacturing materials designated for disposal into the same or different products. Examples of waste products that are sent offsite for recycling at Diavik include:

• Batteries

• Waste Glycol

• Drink Containers

• Copper Wire

1.2.4 Recover
Recovery is the process of extracting materials or energy from waste for other use. Examples of waste recovery at Diavik include:

• Waste heat from electrical power generation is used to heat numerous buildings.
1.2.5 Treatment
The treatment of waste employs methods/processes which reduces the volume, mass, and/or toxicity prior to disposal. Examples of waste treatments at Diavik include:

- Thermal treatment (incineration) of food and camp waste to reduce volume and wildlife attraction.

- Thermal treatment of wood and cardboard to reduce volume.

- Treatment of mine water at the North Inlet Water Treatment Plant prior to discharge into Lac de Gras.

- Treatment of raw sewage at the Sewage Treatment Plant prior to discharge into the Processed Kimberlite Containment Facility for reuse in the Processing Plant.

1.2.6 Disposal
After implementing the above waste reduction strategies (4R's and treatment) there are wastes that require disposal at an approved location/facility. Disposal of waste at Diavik occurs both onsite and offsite. Examples of waste disposal on Site at Diavik include:

- Waste rock;

- Processed kimberlite;

- Treated mine water; and,

- Inert material landfill waste.

Examples of waste disposal off-site at Diavik include:

- Hazardous waste; and

- Used chemicals.
Diavik Health, Safety, Environment and Quality Policy

At Diavik, we are committed to the health and safety of our workforce, environmental protection and quality in the processing of our diamonds. We are committed to creating excellence in our systems to ensure we meet our core values of Integrity, Respect, Teamwork and Accountability. Supported by these values, we believe that all incidents and injuries are preventable. Our goal is zero harm.

To support our Health, Safety, Environment and Quality (HSEQ) policy, we commit to:

- Identify, eliminate, or otherwise control health, safety, environment and quality risks to our people, product, local communities and the environment in which we operate.
- Provide our workforce with the resources they need to achieve our goal of zero HSEQ incidents, injuries and illnesses.
- Comply with all applicable commitments, standards, laws, regulations and other requirements.
- Foster a culture of involvement.
- Support a measurable commitment to quality processes which meets or exceeds our joint venture partner and customer requirements.
- Ensure that HSEQ expectations are clearly communicated and that their management systems are audited.
- Continually seek to reduce the environmental footprint of our operations and related activities.
- Generate sustainable HSEQ performance through long-term, mutually beneficial relationships with our communities and all other stakeholders.
- Be transparent with our workforce, communities, monitoring boards and regulators about incidents that occur within our workplace.

Our vision of excellence is reflected through our people and the product we mine, process and deliver every day. We commit to applying the principles of this policy to continuously improve The Way We Work.

Marc Cameron
President

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Diavik Wildlife Management Policy

As a visitor to this special land, Diavik Diamond Mines (2012) Inc. (DDMI) is dedicated to our commitments and responsibilities to conduct business in a safe and environmentally responsible manner through our comprehensive wildlife monitoring programs and management practices. Wildlife management priorities are integrated into all aspects of our business. We strive to continuously improve our environmental performance and reduce our overall environmental footprint.

The following guiding principles set out Diavik’s Wildlife Management commitments:

• All incidents and interactions with wildlife are reported immediately.
• Every effort is to be made to avoid disturbing wildlife, while still operating in a safe and efficient manner.
• Harassing wildlife, feeding of wildlife and littering are prohibited.
• Sport fishing and hunting by employees and contractors is prohibited during their time at the mine site.
• Employees undergo wildlife orientation and training specific to the wildlife risks in their work area.
• Problem or nuisance wildlife is deterred by trained personnel, and regulatory officials will be consulted where additional actions may be required.
• All traffic and work shall yield the "Right of Way" to wildlife.
• Employees are prohibited from cooking outdoors or storing food/food waste in a manner that attracts wildlife.
• Food waste is incinerated to minimize wildlife attraction
• Waste management requirements are outlined in the Waste Management Plan and seek to minimize wildlife attractants
• Wildlife monitoring requirements are outlined in the Wildlife Monitoring and Management Plan, with a goal to integrate scientific and Traditional Knowledge

As individuals, we personally commit to apply the principles of this policy to continuously improve The Way We Work every single day.

Marc Cameron
President
1.3 **Purpose and Scope**

This Waste Management Plan covers all activities at the Mine, Exploration Sites, and Community Based Monitoring Camp. This plan references other established operational plans that meet the requirements of the MVLWB Guidelines for Developing a Waste Management Plan.

This plan applies to all employees, contractors, and visitors at the Mine site.

1.4 **Project Description**

The project involves the mining of four diamond-bearing Kimberlite pipes. The pipes, designated as A154 North, A154 South, A21 and A418 are located directly off shore of East Island. Open pit mining commenced in 2003.

All mining, diamond recovery, support activities and infrastructure are located on East Island. Approximately 570 people work at the Mine.

The current Mine life is estimated to 2023, producing over 100 million carats.

1.4.1 **Regulatory Authorizations**

The Mine operates under several regulatory authorizations that cover waste including:

- Water License WL2007L2-0003
- Land Leases 76D8-5-2, 76D8-6-2, 76D8-7-2, 76D9-5-2, 76D9-9-2
- Fisheries Authorization SC98001
- Environment Agreement

1.5 **Waste Management Facilities and Locations**

There are a number of waste management facilities located at the Mine. Figure 2 shows the locations of existing and former infrastructure. Each of the detailed Management Plans listed in Section 3 provide greater detail on each facility.
Site Characteristics
The terrain on East Island is characterized by steep-sided bedrock ridges, undulating to strongly rolling slopes consisting of glacial till, ridged eskers and level to depressional glaciolacustrine and organic deposits. The topographic relief is low to moderate, with elevations ranging from 415 meters above sea level (m asl) at the shoreline of Lac de Gras to 445 m asl inland. Most of the terrain features are controlled by shallow bedrock with boulders present on all portions of the island.

The Site is located just north of the diffuse boundary between the widespread discontinuous and continuous permafrost. The Site is situated in a region of low seismicity. There appears to be no regional groundwater flow at the Site due to the combined effects of Lac de Gras acting as a boundary, low topographic relief, and the presence of permafrost. The hydrology of the Site is typical of arctic regions with low precipitation and permafrost. Most precipitation occurs during the winter as snow, which melts and runs off rapidly in early June. On Site, surface water is collected through a number of collection ponds and either transferred to the Processed Kimberlite Containment Storage Facility or the North Inlet for storage or treatment.
Waste Classification

**Waste Classification**

Waste generated at the Mine is classified into two waste streams:

1. Mineral Waste; and,

2. Non-Mineral Waste

Both waste streams can be further sub-divided dependent on the type of waste. Figure 3 outlines waste divisions used at Diavik.
Figure 3: Waste Classification at Diavik

Waste Management Plan

Non-Mineral Waste
- Incinerator
  - Kitchen Waste
  - Office Waste
  - Dormitory Waste
- Hazardous
  - Controlled Products
- Burnable
  - Used Wood
    - Cardboard
    - Paper Air Filters
- Landfill (Inert)
  - Vent Tubing
    - Metal
    - Plastics
    - Ground Support
- Sewage
- Mine Water

Mineral Waste
- Waste Rock
- Processed Kimberlite
Management of Waste

3. Non-Mineral Waste

3.1 Hazardous Materials Management Plan
Status: Version 17.0
Last Update: March 2014
Accountability: Health, Safety, and Environment Department

The Hazardous Materials Management Plan is designed to outline how substances classified and/or deemed to be potentially hazardous (including toxic) will be managed during DDMI’s project life.

3.2 Landfill Management Plan
Status: Version 17.0
Last Update: March 2014
Accountability: Mobile Maintenance and Support Services Department

The Landfill Management Plan is designed to prevent waste from entering the landfill which may attract wildlife or otherwise be harmful to the environment. The Plan outlines what inert materials can be placed in the Landfill while also outlining how additional wastes are managed, including hazardous waste that is shipped offsite and food waste that is incinerated.

3.3 Sewage Treatment Plant Operations Plan
Status: Version 6.0
Last Update: March 2011 (Reviewed Annually)
Accountability: Health Safety and Environment Department

The Sewage Treatment Plant Operations Plan is used as a single source guide by the Water and Wastewater Treatment Plant Operators. The Plan includes plant layout and design, operating guidelines, performance monitoring, contingency planning, and preventative maintenance.

3.4 North Inlet Water Treatment Plant Operations Plan
Status: Version 2.0
Last Update: September 2010 (Reviewed Annually)
The North Inlet Water Treatment Plant Operations Plan is used as a single source guide by the Water and Wastewater Treatment Plant Operators. The Plan includes plant layout and design, operating guidelines, performance monitoring, contingency planning, and preventative maintenance.

4. **Mineral Waste**

4.1 **Waste Rock Management Plan**

Status: Version 6.0

Last Update: March 2011

Accountability: Technical Services Department

The Waste Rock Management Plan describes and outlines the procedure for identifying and segregating blasted country rock (waste rock) during mining to minimize the potential for poor quality drainage. The country rock geology and geochemical characteristics, including acid-generating potential are described. Waste rock classifications based on total sulphur content is used to segregate potentially acid-generating waste rock from non acid-generating waste rock.

4.2 **Processed Kimberlite Containment Facility Operations Plan**

Status: Version 2.1

Last Update: October 2012

Accountability: Technical Services Department

The Processed Kimberlite Containment Facility Operations Plan is used to describe water and solids management within the Processed Kimberlite Containment Facility (PKC). The Plan provides information on facility design and dam construction, facility operations, facility monitoring programs and characterization programs for water, ice, and solids stored within the facility.
Infrastructure Requirements

5. Infrastructure

Infrastructure requirements for waste management are outlined in the various Management Plans listed in Sections 3 and 4.

5.1 Operational Phase Contingency Plan

Status: Version 18

Last Update: March 2014

Accountability: Health, Safety, and Environment Department

The Operational Phase Contingency Plan provides response measures for any unintentional release of hazardous/toxic substances as well as procedures for water management. The Plan defines the responsibilities of key personnel and outlines their duties and required procedures when responding to unintentional releases of products to the environment. The plan has been designed to facilitate effective communication and the efficient cleanup of spills from potentially hazardous materials. The principle objectives of this plan are to:

1. Provide readily accessible emergency information to the clean-up crews, management, and government agencies in the event of any emergency situation;

2. Comply with federal and territorial regulations and guidelines pertaining to the preparation of contingency plans and notification requirements;

3. Comply with company environmental and safety policies;

4. Promote safe and effective recovery of spilled materials; and

5. Minimize environmental impacts of spills to water or land.