JERICHO DIAMOND MINE

HAZARDOUS MATERIALS MANAGEMENT PLAN

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TAHERA DIAMONDCORPORATION

JERICHO DIAMOND MINE
HAZARDOUS MATERIALS MANAGEMENT PLAN

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PREAMBLE

The Hazardous Materials Management Plan is effective from start-up of mine construction and applies to the Jericho Diamond Project Mine Site operated by Tahera Diamond Corporation at Carat Lake, Nunavut, all ancillary facilities including the Mine site and diamond processing plant, and all activities associated with operation of the Mine.

The following formal distribution has been made of this Plan:

Nunavut Water Board
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Gjoa Haven, NT, X0E 1J0

Additional copies and updates of this Plan may be obtained by writing to:

Tahera Diamond Corporation
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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE OF THE PLAN

The purpose of this manual is to provide a consolidated source of information on the safe and environmentally sound storage and handling of the major hazardous products used at the Jericho Diamond Mine, except explosives which are detailed in the Ammonium Nitrate and Explosives Management Plan (under separate cover). In combination with the Emergency Response, and Spill Prevention, Countermeasures and Control Plan, the Hazardous Materials Management Plan provides instruction on the prevention, detection, containment, response, and mitigation of accidents resulting from hazardous materials handling.

Materials handling practices at Jericho Diamond Mine will comply with existing regulations to prevent, to the greatest extent possible, both accidental release of these substances to the environment and accidents resulting from mis-handling or mishap. Further, materials handling practices focus on prevention, as does the spill plan, through inspection of facilities by Tahera Diamond Corporation and contractors, periodic drills to test systems, and a program of review and continual improvement combined with training and refresher courses for all employees.

All staff are required to report materials management concerns to their supervisors who may notify the Health and Safety Committee and senior site management. All staff are encouraged to participate in procedures improvements and to bring ideas and suggestions to the Health and Safety Committee so that they may be reviewed and incorporated into procedure revisions as appropriate.

1.2 LEGISLATION GOVERNING HAZARDOUS MATERIALS AT JERICHO DIAMOND MINE

Both federal and territorial legislation regulates hazardous materials that will be used at the Jericho Diamond Mine. Acts, regulations and guidelines are listed below:

Federal

- Transportation of Dangerous Goods Act and Regulations;
- Explosives Act;
- National Fire Code;
- CCME Guidelines for Above-Ground Storage Tanks.

Territorial

- Transportation of Dangerous Goods Act (RSNWT 1988) and Regulations;
- Explosives Use Act and Regulations;

- Fire Prevention Act and Regulations;
- Mine Health and Safety Act and Regulations;
- Work Site Hazardous Materials Information System Regulations;

Relevant acts will be kept on file at the mine site and an overview understanding of their regulation will be given to employees as part of training.

1.3 LIST OF MATERIALS DISCUSSED

Table 1.1 lists the materials discussed in this plan. Additional materials will be added as required; the plan will be amended to reflect changes and additions.

TABLE 1.1
LIST OF MATERIALS COVERED BY THE PLAN

Material	Plan Section
Fuel and lubricants	2.0
Ferrosilicon	4.1
Flocculants and Coagulants	4.2
Hydrofluoric Acid	4.3
Hydrochloric Acid	4.4
Acetone	4.5
Slaked Lime	4.6

1.4 PROCEDURES FOR HANDLING EMPTY PRODUCT CONTAINERS

Many chemical containers are not safe to dispose of directly and must be recycled, or require handling precautions identical to full containers. Attachment 1.1 contains a procedure for handling empty chemical containers. This information is supplemental to training given to chemical handlers through the *Workplace Hazardous Materials Information System*. Chemical users must be familiar with safe handling and storage procedures provided by manufacturers in Material Safety Data Sheets (MSDS). These procedures for the major products used at the Jericho Mine site are contained in this plan for reference.

1.5 PROCEDURE FOR HANDLING USED PETROLEUM PRODUCTS

Used oil is a hazardous waste. All used petroleum products (excepting empty containers – see Attachment 1.1) will be collected in the oil cubes used for delivery of the new product and back hauled during the winter resupply to the petroleum products supplier. Empty petroleum containers will, unless otherwise directed, be stored on site in a designated area and returned to the supplier on back hauls during the winter resupply.

2.0 FUELS AND LUBRICANTS

2.1 HAZARD CLASS AND POTENTIAL IMPACT

Fuels and lubricants that will be at the Jericho Mine are classified as per Table 2.1, which also lists potential environmental impacts.

TABLE 2.1
FUELS AND LUBRICANTS HAZARD CLASSES AND POTENTIAL IMPACTS

Material	Class	Potential Impact
Diesel	3	Water and soil contamination
Motor Oil	Not regulated	Water and soil contamination
Jet Fuel	3	Water and soil contamination
Propane	2	Fire/explosion
Aviation Gasoline	3	Water and soil contamination
Unleaded Gasoline	3	Water and soil contamination
Hydraulic Fluid	Not regulated	Water and soil contamination
Varsol	3	Water and soil contamination
Automotive grease	Not regulated	Negligible risk with proper handling
Ethylene Glycol	Not regulated	Water and soil contamination

2.2 LIST OF PRODUCTS AND ON-HAND QUANTITIES

Table 2.2 lists projected products and on-hand quantities. The list will be updated prior to mine construction.

TABLE 2.2
FUELS AND LUBRICANTS ON-HAND QUANTITIES

Material	Quantity
Diesel	10 million L
Motor Oil	1000 L or less
Jet Fuel	5000 L
Propane	To be determined
Aviation Gasoline	1000 L or less
Unleaded Gasoline	10,000 L
Hydraulic Fluid	1000 L or less
Varsol	205 L or less
Automotive Grease	1000L or less
Ethylene Glycol	205 L or less

2.3 PRODUCT HANDLING AND STORAGE PROCEDURES

2.3.1 Personal Protective Equipment

Personal protective equipment recommended by manufacturers in Material Safety Data Sheets (MSDS) is listed for each product in Table 2.3.

TABLE 2.3
PERSONAL PROTECTIVE EQUIPMENT FOR FUEL PRODUCTS

		Personal Protective Equipment	
Product	**Eyes**	**Skin**	**Respiration**
Diesel	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required
Motor Oil	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required
Jet Fuel	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Aviation Gasoline	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Unleaded Gasoline	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Hydraulic Fluid	For splash protection use chemical goggles	None usually required	None usually required
Varsol	For splash protection use chemical goggles	Rubber gloves	None usually required; ensure adequate ventilation
Automotive Grease	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation
Ethylene Glycol	For splash protection use chemical goggles	Neoprene or nitrile gloves; protective garments	None usually required; ensure adequate ventilation

2.3.2 Safe Handling

Table 2.4 lists safe handling procedures for the products listed in Table 2.2

TABLE 2.4
SAFE HANDLING PROCEDURES FOR FUEL PRODUCTS

Product	Handling Procedures
Diesel	Do not get in eyes, on skin or on clothing. Avoid breathing vapors, mist, fume or dust. Do not swallow. May be aspirated into lungs. Wear protective equipment and/or garments if exposure conditions warrant. Wash thoroughly after handling. Launder contaminated clothing before reuse. Use with adequate ventilation. Keep away from heat, sparks, and flames. Store in a well-ventilated area. Store in a closed container. Bond and ground during transfer.
Motor Oil	Wear protective clothing and impervious gloves when working with used motor oils.
Jet Fuel	Avoid skin contact. Launder contaminated clothing before reuse. Store in a flammable liquids area. Store away from heat, ignition sources and open flames.
Aviation Gasoline	See Diesel
Unleaded Gasoline	See Diesel
Hydraulic Fluid	Keep container closed until ready for use.
Varsol	Avoid eye contact. Use with adequate ventilation. Wash thoroughly after handling. Empty container retains residue. Follow label instructions. Avoid repeated skin

TABLE 2.4 SAFE HANDLING PROCEDURES FOR FUEL PRODUCTS	
Product	**Handling Procedures**
	contact. Store in cool, ventilated area, away from ignition sources and incompatibles. Keep container tightly closed.
Automotive Grease	Minimize breathing vapor, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before re-use. Remove contaminated shoes and thoroughly clean before re-use; discard if oil-soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Code. Keep containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants.
Ethylene Glycol	Use adequate ventilation, wear protective gloves and chemical safety goggles if possibility of eye contact. Keep in tightly closed container, stored in a cool, dry, ventilated area. Separate from acids and oxidizing materials. Containers of this product may be hazardous when empty since they retain product residues (vapors; liquids).

2.4 STORAGE LOCATIONS

Storage locations for fuel products are listed in Table 2.5.

TABLE 2.5 FUEL PRODUCTS STORAGE LOCATIONS	
Product	**Storage Location**
Diesel	Fuel farm: bulk of 10 million L; bermed PowerHouse: 5000 L silled tank Construction: 1000 L bermed tank at crusher (waste dump 1 or 2) Exploration Camp: 1000 L in barrels Airstrip: 250 L silled tank Mechanical Shop: 1000 L silled tank Explosives Truck Shop: 1000 L silled tank
Motor Oil	Mechanical Shop: 500 L in barrels Power House: 205 L in barrel Exploration Camp: 205 L in barrel
Jet Fuel	Airstrip: 5000 L in barrels Helipad (exploration camp): 1000 L in barrels
Propane	Accommodation complex: tank size to be determined
Aviation Gasoline	Airstrip: 1000 L in barrels
Unleaded Gasoline	Fuel Farm: 10,000 L bermed tanks Exploration Camp: 205 L in barrel
Hydraulic Fluid	Mechanical Shop: 500 L in barrels Power House: 205 L in barrel

TABLE 2.5 FUEL PRODUCTS STORAGE LOCATIONS	
Product	**Storage Location**
	Plant: 205 L in barrel
Varsol	Mechanical Shop: 205 L in barrel and solvent recycler
Automotive Grease	Mechanical Shop: 50 – 20 L pails
Ethylene Glycol	Mechanical Shop: 205 L in barrel

2.5 INSPECTION

Table 2.6 lists the inspection schedule to be followed. All inspections will be logged with the date and time of inspection, facility inspected, and the name of the person making the inspection.

TABLE 2.6 INSPECTION SCHEDULE FOR PETROLEUM STORAGE SITES	
Fuel Tanks	Quarterly by the mine contractor Operating Supervisor; annually by Tahera's Environmental Manager
Diesel Generator Building	Monthly by the mine contractor Operating Supervisor as part of internal environmental audit
Other Fuelling Stations	Weekly by the mine contractor Operating Supervisor as part of internal environmental audit
Spill Kits	Quarterly by the mine contractor Operating Supervisor; annually by Tahera's Environmental Manager
Other hazardous materials storage	Monthly by the mine contractor Operating Supervisor when materials are on site

Table 2.7 lists inspection procedures to be used for containment facilities.

TABLE 2.7 INSPECTION PROCEDURES FOR PETROLEUM STORAGE SITES	
Fuel Tanks	Repair leaks and report promptly. Inspections will be reported and filed with the mine contractor Operating Supervisor and Tahera's Environmental or Lands Manager.
Diesel Generator Building	Inspections will be reported and filed as above.
Other Fuelling Stations	Inspections will be reported and filed as above.

Any accidental damage to containment structures will be inspected immediately and appropriate repairs undertaken. The extent of damage will be reported in writing to the mine contractor Operating Supervisor and Tahera's Diamond Processing Plant Engineer, or alternate, as well as remedial repairs affected together with the date of repairs and any follow up inspection.

2.5 FUEL TRUCK TRANSFER PROCEDURES

Fuel tanks in the main fuel farm will be filled by a contract supplier and fuelling is the contractor's responsibility. Fuel transfer will take place inside the bermed area; general procedures to be followed are presented below. For fuelling station tanks, if they are used, similar procedures will be followed:

1. Before fuel transfer verify that:

a. all fuel transfer hoses have been connected properly and couplings are tight;

b. transfer hoses are not obviously damaged;

c. fuel transfer personnel are familiar with procedures;

d. for fuelling stations, personnel are located at both the fuel truck and fuel transfer tank(s) and have the ability to shut off fuel flow manually; and

e. a means of communication has been established between the two people transferring fuel.

A high liquid level shutoff device can be substituted for the person at the delivery tank. In which case operation of the shutoff should be verified each time it is used.

2. Transfer fuel as per established procedures of the fuelling contractor.

3. Contractor (or mine employee in the case of fuelling station tanks) will report any accidents or spills immediately to the mine contractor Operating Supervisor or Diamond Processing Plant Engineer. Either the Supervisor or Engineer will provide a written report to Tahera's Environmental Manager.

A contract supplier will fill fuel tanks in the main fuel farm; fuelling is the contractor's responsibility. Details on fue transfer are discussed in the Jericho Spill Prevention and Emergency Response Plan included in this document.

3.0 PROCESSING PLANT CONSUMABLES

3.1 FERROSILICON

3.1.1 Hazard Class and Potential Impact

Ferrosilicon is not a hazardous substance. There is negligible potential for impact with proper handling.

3.1.2 On-Hand Quantities

During full production of the processing plant, 120 tonnes of ferrosilicon will be used annually. Ferrosilicon will be transported by truck to site during the annual winter supply.

3.1.3 Product Handling and Storage Procedures

3.1.3.1 Personal Protective Equipment

In well-ventilated open areas use a respirator equipped with combination organic vapour/acid gas/HEPA cartridges and dust/mist prefilter. Wear protective gloves and safety goggles; avoid contamination of working clothing.

3.1.3.2 Safe Handling

Avoid generation of airborne dusts. Keep dry when storing for long periods of time. Avoid adding wet product to molten metal.

3.1.4 Storage Locations

Ferrosilicon will be stored covered adjacent to the processing plant.

3.2 FLOCCULANTS AND COAGULANTS

3.2.1 Hazard Class and Potential Impact

Magnafloc 156 flocculant (formerly Percol E-10, and listed as such in previous versions of this plan) will be used in the processing plant. If require, Magnafloc 368 (formerly Percol 368 coagulant) may also be used. Neither have hazardous ingredients, as classified by the *Transportation of Dangerous Goods Regulation*. Impacts if products are handled properly will be negligible. Products will be used in a controlled drainage area and any spill that escaped the plant would be contained and not reach a water body. Coagulants are potentially toxic to fish. There will be negligible risk of the coagulant reaching fish-bearing waters in toxic concentrations.

3.2.2 List of Products and On-Hand Quantities

Two tonnes of Magnafloc 156 will be required annually. The amount, if any, of coagulant is to be determined.

3.2.3 Product Handling and Storage Procedures

3.2.3.1 Personal Protective Equipment

For both products, use splash goggles where eye contact may occur. Use gloves to prevent prolonged skin contact. Use a dust mask if handled in bulk to prevent inhalation of airborne particles.

3.2.3.2 Safe Handling

Dust generated in handling of Magnafloc 156 and 368 can be explosive if sufficient quantities are mixed in air, in which case ignition sources should be avoided.

3.2.4 Storage Locations

Both products will be stored in a dry area on a concrete floor in the processing plant.

3.3 HYDROFLUORIC ACID

3.3.1 Hazard Class and Potential Impact

Hazard class for hydrofluoric acid under *Transportation of Dangerous Goods Regulation* is 8 and 6.1 (corrosive and poisonous substances). Only small quantities of hydrofluoric acid will be stored on site and in a controlled area. Therefore the potential for environmental impact is negligible with proper handling. Safety of chemical handlers is the major concern with this product.

3.3.2 On-Hand Quantities

Up to 50 L may be stored on site.

3.3.3 Product Handling and Storage Procedures

4.3.3.1 Personal Protective Equipment

Hydrofluoric acid should be used in an area with local ventilation. If the exposure limit of 3 ppm is exceeded a full facepiece respirator with an acid gas cartridge may be worn. Wear protective clothing, including boots or safety shoes with polyvinyl chloride or neoprene. Use chemical goggles and/or a full face shield. Wear coveralls with long sleeves, gauntlets and gloves of PVC or neoprene.

3.3.3.2 Safe Handling

Keep in tightly closed polyethylene containers. Store in a cool, dry place with adequate ventilation separated from other chemicals. Protect from physical damage. The storage area for hydrofluoric acid will be constructed for containment and neutralization of spills. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid).

3.3.4 Storage Locations

Hydrofluoric acid will be kept in a locked, corrosion-resistant cabinet in the processing plant area where it is used. Only people trained to use the product and aware of safety precautions required will have access to hydrofluoric acid.

3.4 HYDROCHLORIC ACID

3.4.1 Hazard Class and Potential Impact

Hydrochloric acid is a Class 8 (corrosive) substance. With proper handling, potential for environmental impact is negligible. The product will be stored in a controlled drainage area. The primary concern is for safety of chemical handlers.

3.4.2 On-Hand Quantities

Up to 100 L of hydrochloric may be stored on site.

3.4.3 Product Handling and Storage Procedures

3.4.3.1 Personal Protective Equipment

Use in an adequately ventilated area to keep levels below 5 ppm. If the exposure limit is exceeded, a full facepiece respirator with an acid gas cartridge may be worn. Wear rubber or neoprene gloves, impervious boots, apron or coveralls, as needed in areas of unusual exposure to prevent skin contact. Use chemical safety goggles and/or a full face shield where splashing is possible.

3.4.3.2 Safe Handling

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. When opening metal containers, use non-sparking tools because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid).

3.4.4 Storage Locations

Hydrochloric acid will be stored in a controlled area in the processing plant near where it will be used for rough diamond cleaning. Only persons with training in handling the product will have access to it.

3.5 ACETONE

3.5.1 Hazard Class and Potential Impact

Acetone is a Class 3 (flammable liquid) product. Since small quantities will be kept on hand in a controlled drainage area, the potential for environmental impact is negligible with proper handling.

3.5.2 On-Hand Quantities

Up to 50 L may be on hand at the mine.

3.5.3 Product Handling and Storage Procedures

3.5.3.1 Personal Protective Equipment

Use only in a well-ventilated area; avoid breathing the fumes. Above 500 ppm a half-face organic vapor respirator may be worn. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Use chemical safety goggles and/or a full face shield where splashing is possible.

3.5.3.2 Safe Handling

Protect against physical damage. Store in a cool, dry, well-ventilated location, away from any area where the fire hazard may be acute. Separate from incompatibles (concentrated nitric and sulphuric acid mixtures, oxidizing materials, chloroform, alkalis, chlorine compounds, acids, and potassium t-butoxide). Containers should be bonded and grounded for transfer to avoid static sparks. Storage and use areas are to be marked "**No Smoking**". Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid).

3.5.4 Storage Locations

Acetone will be stored in a controlled, ventilated area of the processing plant. Access will be limited to persons trained in the safe use of the product.

3.6 SLAKED LIME (CALCIUM HYDROXIDE)

3.6.1 Hazard Class and Potential Impact

This product is not regulated under the *Transportation of Dangerous Goods Regulation*. Calcium hydroxide will be stored in a controlled drainage area under cover. The potential for environmental impact with proper handling is negligible.

3.6.2 On-Hand Quantities

Up to 10 tonnes may be stored on site (immediately following the winter resupply).

3.6.3 Product Handling and Storage Procedures

3.6.3.1 Personal Protective Equipment

Use in a well-ventilated area. Chemical splash goggles and a full face shield are advised. Wear resistant gloves such as natural rubber, neoprene, or nitrile rubber to prevent skin contact. Wear impervious clothing and boots. Where over exposure (> 5 mg/m^3) is documented, a dust/mist and fume respirator is advised.

3.6.3.2 Safe Handling

Store in closed containers in a dry, well-ventilated area. Containers of this material may be hazardous when empty. Since emptied containers retain product residues (vapor, solid), all hazard precautions given in the MSDS sheet must be observed.

3.6.4 Storage Locations

Slaked lime will be stored in a covered area at the processing plant.

3.7 HAZARDOUS WASTES

3.7.1 Petroleum Contaminated Soils, Snow and Ice

Handling and disposal of petroleum contaminated soils, snow and ice are covered in the landfarm management plan for the Jericho Mine. All these materials will be treated on site or shipped off site for treatment at the discretion of the plant manager as discussed in the landfarm management plan.

3.7.2 Waste Oil

Waste oil will be collected from generation sites and placed in waste oil cubes to be backhauled during the winter resupply. An inventory will be kept of the approximate volume of waste oil accumulated between resupply periods. This will be the responsibility of the environmental co-ordinator or designate.

3.7.3 Small Volume Hazardous Wastes

Table 3.1 lists expected small volume hazardous wastes, their temporary storage location and ultimate disposal.

TABLE 3.1
SMALL VOLUME HAZARDOUS WASTE MANAGEMENT

Waste	Temporary Storage	Disposal
Used paint	Hazardous materials building on pallets in a segregated area	Backhaul to a licensed disposal contractor
Used Oil filters/grease cartridges	Hazardous materials building in steel drum(s) on pallets in a segregated area	Backhaul to supplier for disposal
Used Rags and sorbents	Temporarily stored in steel drum in mechanical shops; depending on volume moved to hazardous materials building in a segregated, well ventilated area	Backhaul to licensed disposal contractor

4.0 INVENTORY MANAGEMENT

Bulk materials, including those products discussed in this plan, will be transported to the Jericho Mine site over the Lupin winter road each year. Storage will be in areas indicated above. The division managers will reconcile total amounts received against amounts ordered. The senior manager for each division will regulate use:

- mining by the mine superintendent;
- processing by the plant manager; and
- catering by the catering manager.

4.1 FUELS AND LUBRICANTS

Fuel and gasoline use will be automatically metered as it is distributed from bulk tanks. The metered volumes will be summarized weekly and reconciled against manual dipping of the tanks. The exception will be use for power generators where weekly fuel use will be recorded.

Jet fuel and aviation fuel will be dispensed from 205 L barrels as required under the supervision of aircraft personnel. Use and on hand volumes will be reconciled monthly, or more frequently during high use periods.

Lubricant and other petroleum products will be inventoried monthly.

4.2 PROCESSING PLANT CONSUMABLES

Processing plant consumables will be reconciled on receipt. A daily consumables sheet will be filled by the senior dayshift plant operator and provided to the plant manager.

5.0 INSPECTION

5.1 FUELS AND LUBRICANTS

The plant manager is ultimately responsible for petroleum storage inspection at the Jericho Diamond Mine. The plant manager will co-ordinate with the mine superintendent and the catering manager with respect to any fuels or lubricants used in their areas of responsibility. An inspection procedure for petroleum storage containers was outlined in the Jericho Project Spill Prevention and Emergency Response Plan attached to this document. Inspection schedules are listed in the spill prevention document.

Table 5.1 lists the inspection schedule to be followed:

TABLE 5.1
INSPECTION SCHEDULE FOR PETROLEUM STORAGE SITES

Fuel Tanks	Quarterly by the plant manager; annually by Tahera's Environmental Manager
Diesel Generator Building	Monthly by the plant manager as part of internal environmental audit
Other Fuelling Stations	Weekly by the plant manager, or designate, as part of internal environmental audit
Spill Kits	Quarterly by the plant manager or designate; annually by Tahera's Environmental Manager
Other hazardous materials storage	Monthly by the plant manager when materials are on site

All inspections will be logged with the date and time of inspection, facility inspected, and the name of the person making the inspection.

Table 5.2 lists inspection procedures to be used for containment facilities:

TABLE 5.2
INSPECTION PROCEDURES FOR PETROLEUM STORAGE SITES

Fuel Tanks	Repair leaks and report promptly. Inspections will be reported and filed with the mine superintendent or plant manager and Tahera's Environmental or Lands Manager.
Diesel Generator Building	Inspections will be reported and filed as above.
Other Fuelling Stations	Inspections will be reported and filed as above.

Any accidental damage to containment structures will be inspected immediately and appropriate repairs undertaken. The extent of damage will be reported in writing to the mine superintendent and plant manager, or alternate, as well as remedial repairs affected together with the date of repairs and any follow up inspection.

5.2 PROCESSING PLANT CONSUMABLES

Processing plant operators are responsible for daily inspection (on each shift) and operation of consumables storage facilities in the plant. Any problems will be noted and reported to the plant manager. The plant manager will be responsible for weekly or monthly inspections of plant consumables and storage areas.

6.0 RECORDS

A procedure for tracking chemical purchase and use has been developed for the Jericho Mine site. A copy of the procedure is shown in Attachment 6.1. Specific records requirements are discussed further in this section.

6.1 FUELS AND LUBRICANTS

Records of fuels and lubricants are required by the Canadian Council of Ministers of the Environment (CCME) and the Fire Marshal (under the *National Fire Code*). Records will be kept under the supervision of the plant manager, in consultation with the mine superintendent, for the following:

- reconciled bulk inventory from winter resupply;
- weekly use summaries;
- weekly reconciliation for each storage tank;
- overfill alarm tests;
- pressure tests (if applicable);
- inspections and maintenance checks of storage tank system, piping and delivery system;
- any alteration to the system;
- reports of leaks or losses;
- reports of spill responses; and
- records of training.

6.2 PROCESSING PLANT CONSUMABLES

The plant manager is responsible for reconciling winter resupply inventory. The plant operators will keep daily records of use. Weekly and monthly summaries will be provided to the plant manager for records keeping.

7.0 TRAINING

Some training requirements will apply to all staff and contractors at the Jericho Diamond Mine. Additional job-specific training may be required as outlined in this section. All staff will receive the following training:

- WHMIS;
- emergency and spill response; and
- operations overview.

Mine employees will receive additional training in mine safety as specified by the NWT *Mine Health and Safety Act and Regulations*. This will be the responsibility of the mine contractor; Tahera Diamond Corporation will ensure compliance.

Plant employees will receive additional training specific to their area of work and duties, including safe operating practices, safe handling and storage of chemicals, and so forth. This training will be the responsibility of Tahera Diamond Corporation.

Catering employees job-specific training, if required, will be the responsibility of the catering contractor.

Periodically, Jericho staff will carry out fire drills. Drills will be arranged so as not to disrupt work and will test emergency response procedures. Results of drills will be recorded and forwarded to the mine and plant managers and the Health and Safety Committee. Drill results may indicate additional, or refresher, training is required. Safety Committee recommendations will be enacted expeditiously.

Emergency first-responders, e.g., medical staff, mine rescue staff, etc. will periodically test their emergency response procedures. Reports on drills will be provided to the mine and plant managers for action as required.

7.1 FUEL AND LUBRICANTS HANDLERS

Fuel and lubricants handlers will be expected to be conversant with relevant MSDS. As well, these personnel will be given training in the following:

- transportation of dangerous goods (TDGA);
- Tahera's fuel handling procedures (outlined in Section 2.0);
- spill response and cleanup procedures for petroleum (see Jericho Project Spill Prevention, Countermeasures and Control Plan in the Environmental Impact Statement, Appendix D.2.4, for more details); and
- emergency response, especially fire fighting procedures.

7.2 PLANT EMPLOYEES

In addition to the training indicated in the introduction to Section 8.0 above, plant operators may receive TDGA training, if appropriate. Plant employees will be trained in spill and emergency response to a dam break, as they will be the first responders for such an emergency. Training in operation of the processed kimberlite containment area (PKCA) will also be provided; a PKCA operations manual will be developed once detailed engineering has been completed.

8.0 PLAN EVALUATION AND CONTINUAL IMPROVEMENT

Despite careful planning, it is highly probable that certain components of the Hazardous Materials Management Plan will need to be modified. It will therefore be necessary to audit or review the plan to pinpoint those components that need to be corrected, adjusted, or upgraded. Most important will be review of aspects of the plan affecting safety of employees at the facility and the general public. Not only will the operational aspects of the plan, but any paperwork that deals with the plan, be reviewed. A goal will be to continuously audit all aspects of the plan for effectiveness.

Formal evaluations of the Hazardous Materials Management Plan will be documented, deficiencies noted in the report and progress in addressing deficiencies tracked in writing. Responsibilities to address deficiencies and accountabilities will be assigned and deadlines for addressing required changes will be set. The Jericho Mine plant manager will assume overall responsibility for the process.

REFERENCES

Tahera Corporation. 2003. Jericho Diamond Project Final Impact Statement.

ATTACHMENTS

ATTACHMENT 1.1
USED CHEMICAL CONTAINERS
HANDLING AND DISPOSAL PROCEDURE

PROCEDURE FOR HANDLING AND DISPOSAL OF EMPTY CHEMICAL CONTAINERS

1. Purpose

1.1. To ensure that chemical containers are properly handled so that they do not impact the environment or injure employees.

1.2. To encourage the reuse and recycling of empty chemical containers.

2. Scope

2.1. This procedure covers any empty container (or one with residue) that housed a chemical that might have an impact on the environment or human health.

2.2. This procedure covers all types of hazardous chemicals or fuels whether they are in the liquid, solid, or gaseous/vapor state.

3. Responsibilities

3.1. It is the responsibility of the chemical user to ensure that the chemical container has been properly cleaned.

3.2. The environmental department will audit the container cleaning operation to ensure that the procedure is being followed.

3.3. The procurement department will arrange contracts with chemical suppliers to reuse as many containers as possible.

4. Procedure

Since most empty chemical containers may still have some residue, they must be handled properly to minimize injury and impact to the environment (see MSDS for the particular chemical). In many cases, the residues in the containers result in a hazardous waste classification.

4.1. Training

Responsible employees will be trained concerning this procedure and personal protective equipment (PPE) provided when this training is carried out. If the employees don't understand or appreciate what they are doing, there will be containers going out in the trash with residual chemicals. This may result in heavy fines and possible environmental damage.

4.2. Complete Use

It is very important to remove as much of the chemical as possible. This may require inversion for a period of time or scraping or chipping. Drain racks are commonly used for this phase of the process.

4.3. Handling of Residual

The residue will be used in the plant operation, if possible. If this cannot occur, then the residue will probably have to be treated as hazardous waste and should not be placed in the common landfill. If liners are present, they are also usually treated as hazardous waste.

4.4. Container Cleaning/Washing

Depending on the residual, it may be possible to wash out the container and cap. This washing is usually done three times (triple rinse). The wash solution may have to be treated as hazardous waste.

4.5. Testing

The container will be tested after the washing. For example, if an acid or base was in the container before, then pH paper could be used. pH meters are another option to ensure adequate washing has occurred.

4.6. Inversion

After washing the container, it should be inverted. A drain rack will allow all residual fluid to exit the container.

4.7. Return of Container

If possible, the container should then be returned to the chemical supplier, broker, or recycler. This is preferable to land disposal in terms of the environment and associated liabilities.

ATTACHMENT 6.1
CHEMICAL TRACKING PROCEDURE

PROCEDURE FOR TRACKING OF CHEMICALS

Tracking of chemicals is an essential component of a comprehensive environmental management system. Being aware of chemicals that are planned, purchased, stored, and used, and that become hazardous wastes is the essence of the system. Key components of the tracking system include an inventory, important information about the chemical, and a mass balance.

1. Purpose

1.1. To make sure all chemicals are identified and accounted for in all phases of the operation.

1.2. To reduce the volume and/or toxicity of chemicals on-site.

1.3. To detect early any significant leak or spill of chemicals.

2. Scope

2.1. This procedure covers chemicals used in mining, processing, catering/janitorial, and all other aspects of the operation.

3. Responsibilities

3.1. The purchaser of the chemical is responsible for notifying the environmental department when a new chemical is introduced into the operation. The purchaser is also responsible for tracking of chemical quantities and reporting this to the environmental department.

3.2. The environmental department is responsible for keeping facility-wide inventories of chemicals by type and quantity. The environmental department must also compare this data to emissions and discharges to determine if leaks have occurred.

4. Procedure

4.1. Identify Responsible Individual

A person who is responsible for all chemical tracking at the site will be identified. Many people may be involved; however, one individual should coordinate the overall effort for the entire organization.

4.2. Inventory

Inventory the chemicals planned and on-site and enter this information into a software system. For example, it should be indicated whether the chemical is planned or on-site. The quantity of the chemical in use, in storage, and being discharged needs to be recorded on an ongoing basis. The discharged amount would be in accordance with permits and regulations and include that to sewers, water bodies, air, and landfill. The amounts presently being recycled, reused, or sold should also be added into the inventory and so designated.

4.3. Other Information

Additional information should be entered into the software system, however, this may require some research into material safety data sheets or calls to the manufacturer. For example, the composition of the chemical along with Chemical Abstract System (CAS) numbers should be added. Hazard rating information should also be added.

4.4. Ongoing Review and Entry of Information

There will be on-going review of invoices, shipping documents, manifests, plans, and other information, which is added to the software system. The system should track, balance and account for, all chemicals. This helps to ensure that some have not leaked or been spilled from their containers.

4.5. Enforcement of Chemical Purchase Procedures

As all the numbers are obtained, there may be cases where it is found some individuals are not following the chemical purchase procedures. When this happens they will be reminded of the procedure.

4.6. When the Numbers Don't Add Up

If the mass balance shows that there are significant volumes of chemicals unaccounted for some additional research will be needed. If it is not just an error in calculation, it might be a leaking storage tank or a spill.