

**DIAMONDS NORTH RESOURCES LTD.**

**FUEL SPILL CONTINGENCY PLAN**

**FOR DRILL SITES**

**AND EXPLORATION CAMPS**

**AMARUK PROJECT AREA**

**NUNAVUT**

*Not approved*

*to be*

*resubmitted*

Nunavut Water  
Board  
17.04.2008  
Public Registry

Prepared By: D. Graham Gill

November 30th, 2007

## **Table of Contents**

	Page
Preamble.....	3
1.0 Introduction.....	4
2.0 Site Information.....	4
3.0 Response Organization.....	5
4.0 Reporting Procedure.....	5
5.0 Initial Action.....	7
6.0 Action Plans.....	7
6.1 Spills on land.....	8
6.2 Spills on Snow.....	8
6.3 Spills on Ice.....	9
6.4 Spills on Water.....	9
7.0 Resource Inventory.....	10
8.0 Training/Exercise.....	11

## **APPENDICES**

Appendix I	Spill Kit Contents
Appendix II	Spill Report Form
Appendix III	Material Safety Data Sheets
Appendix IV	Hazardous Waste

## **PREAMBLE**

This Fuel Spill Contingency Plan is effective from the date of issuance of all water licences and land use permits currently being applied for by Diamonds North on its Amaruk property located approximately 50 kilometres south-southwest of Kugaaruk, Nunavut, until the expiry of said licences and permits.

The Fuel Spill Contingency Plan has been prepared for internal company use and distributed to NWB for approval as part of Diamonds North's Water Licence renewal application.

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

D. Graham Gill, P. Geo  
Diamonds North Resources Ltd.  
510-510 Burrard Street  
Vancouver, B.C. V6C 3A8

### **Company Responsible for Undertaking:**

Diamonds North Resources Ltd.  
510-510 Burrard Street  
Vancouver, B.C.  
V6C 3A8

### **Company Representative (Corporate):**

D. Graham Gill, P. Geo.  
V.P. Operations  
Ph: 604 689-2010  
Fx: 604 484-7143

### **Company Representative (On-site):**

Carl Ozyer, Project Geologist  
Phone and fax numbers for camp will be provided when communication contract is finalized.

## **INTRODUCTION**

The purpose of Diamonds North Resources Ltd.'s Fuel Spill Contingency Plan is to provide a plan of action for any spill event during the Company's exploration programs in the Amaruk area of Nunavut. This Plan provides the protocol for responding to spills (or potential spills) that will minimize health and safety hazards, environmental damage and clean-up costs as well as defining responsibilities of response personnel. This Fuel Spill Contingency Plan details the sites that operations will be conducted upon, describes the response organization, action plans, reporting procedures and training exercises in place.

### **2.0 SITE INFORMATION**

#### **1. Amaruk Campsite**

Coordinates: 68° 07 min 43 sec North 90° 04 min 40 sec West

Capacity: 30 people

Structures:

Ten-twelve 14' x 16' wooden/Weatherhaven sleep tents

One 32' x 14' kitchen tent

One 14' x 16" core shack

One 14' x 16' dry

One 14' x 16' first aid tent

One 28' x 14' office tent

Three outhouses plus Pecto facilities for winter/spring use

One generator shack

Three heli-pads

One burn barrel

One fuel cache with Spill Kit per camp site, fuel cache and drill site

Spill response equipment located outside of coreshack

#### **Camp (Siku – Satellite Camp)**

Coordinates: 67° 36 min 20 sec North 92° 28 min 03 sec West

Capacity: 12 people

Structures:

Three - Four 14' x 16' Weatherhaven sleep tents

One 16' x 14' kitchen tent

One 14' x 16' dry

One 14' x 16' first aid tent

One outhouse

One generator shack

One heli-pad

One burn barrel

One fuel cache with Spill Kit per camp site, fuel cache and drill site

Spill response equipment located outside of coreshack

## 2. Drill Sites

Final drill targets have not been defined at this time. Drill site coordinates will be forwarded when known.

Campsite: Aviation and diesel fuel, gasoline to be stored in 45 gal (205 litre) drums.

These will be located a minimum of 31 metres from the normal high water mark and in such a manner that no fuel can enter any such water body.

Fuel Caches  
(Outside of Camp) Aviation and diesel fuel to be stored in fuel caches near drilling operations. Once drilling is complete in one area the fuel cache will be moved to a new location proximal to the next site of drill operations. All fuel will be located a minimum of 31 metres from normal high water mark and in such a manner that no fuel can enter any such water body.

Drill sites: 2-3 barrels of diesel, propane and drill additives to be stored on each drill pad consecutively.

**Note: Spill kits will be provided at each fuel cache, at each operational drill site and at the camp.**

## 3.0 RESPONSE ORGANIZATION

**Camp Technician** - responsible for checking fuel drum conditions and evidence of leakage daily, assuring drip trays are in place and not overflowing; keeping spill kits and absorbent mats in good repair and accessible. If spill or likelihood of a spill occurs the Technician will immediately report to the **Project Supervisor**.

**Pilots and Drill Shift Boss** to report spills or potential spills to the **Project Supervisor**.

**Project Supervisor** will report any spill to the NWT 24-Hour Spill Report Line and initiate cleanup. Project Supervisor will request additional aid from external sources if deemed necessary.

If one or more of these key personnel are absent from the site an alternative person will be named as either Camp Technician or Project Supervisor in the interim.

Names of key personnel to be responsible for activating the spill contingency plan will be made available once crew members have been hired.

#### **4.0 REPORTING PROCEDURE**

Communication in the way of two-way radios will be set-up in the event that if a spill occurs outside of camp at either the drill rig or external fuel cache it can be immediately reported to the Project Supervisor.

All spill kits located at all sources of fuel will have contact information for the NWT Spill Report Line prominently displayed.

A listing of the NWT 24 Hour Spill Report Line as well as other government contacts and company officials will be displayed adjacent to the satellite phone in camp. (See Reporting Procedure and Contacts provided below).

#### **SPILL REPORTING PROCEDURE**

Fill out "SPILL REPORT" form as completely as possible before making the report.  
Report IMMEDIATELY to Yellowknife using the 24-hour Spill Report Line

**24-HOUR SPILL REPORT LINE (867) 920-8130**

**AND TO**

**DIAND WATER RESOURCES INSPECTOR (867) 975-4298**

NOTE: Telephone calls can be made collect by informing the Operator that you wish to report a spill.

RCMP communications may be used if other means are not available.

**Additional Information or Assistance:**

**Regulatory Bodies:**

Government of Northwest Territories  
Pollution Control Division  
Yellowknife

Phone: (867) 873-7654

Department of Indian Affairs and  
Northern Development  
Yellowknife

Phone: (867) 920-8240

Environment Canada (Jim Noble)  
24 Hour Pager  
Yellowknife

Phone: (867) 975-4644

Phone: (867) 920-5131

Fax: (867) 873-8185

Environment Canada  
Iqaluit

Phone: (867) 975-4639

Emergency Pager: (867) 920-5131

Nunavut Water Board

Phone: (867) 360-6338

Fax: (867) 360-6369

Environmental Protection  
Government of Nunavut

Fax: (867) 975-5981

Indian and Northern Affairs Canada  
Water Resources Manager  
Nunavut Regional Office

Phone: (867) 975-4550

Fax: (867) 975-4585

Indian and Northern Affairs Canada  
Land Administration Minister  
Nunavut Regional Office

Phone: (867) 975-4280

Fax: (867) 975-4286

Department of Fisheries and Oceans  
Nunavut Regional Office  
Manager Pollution Control & Air Quality

Phone: (867) 979-8000

Fax: (867) 979-8039

Phone: (867) 975-5907

RCMP Detachment  
Yellowknife

Phone: (867) 669-5100

RCMP Detachment  
Jugaaruk

Phone: (867) 779-0123

**Contractors:**

Discovery Mining Services  
Yellowknife

Phone: (867) 920-4600

EBA Engineering Consultants Ltd.  
Yellowknife

Phone: (867) 873-2287

**Company Contact:**

Diamonds North Resources Ltd.

Phone: (604) 689-2010

**A detailed report on each occurrence must also be filed with the DIAND Water Resources Inspector no later than 30 days after initially reporting the event. The Spill Report Form is attached as Appendix II.**

**5.0 INITIAL ACTION**

- 1.0 Stay alert and consider safety first. Identify the source of leak or spill and the type of product.
- 2.0 Assess the hazards to persons in the vicinity of the spill.
- 3.0 Isolate or remove any potential ignition source.
- 4.0 Control danger to human life if possible.
- 5.0 Assess whether the spill can be readily stopped or brought under control.
- 6.0 If safe (and possible) try to stop the flow.
- 7.0 Report the spill to the Project Supervisor and to the NWT 24-hour Spill Report Line at (867) 920-8130.
- 8.0 Initiate or resume clean up.

## 6.0 ACTION PLANS

The following responses are recommended for fuel spills in differing environments. Depending on the location and size of the exploration program some of the equipment mentioned in the responses listed below will obviously not be located on site but could be transported to the spill if deemed necessary. The most likely scenario for fuel spills in this type of exploration program would include; leaking drums, hydraulic line malfunction and re-fueling operations. It is not anticipated that a spill of more than 45 gallons will occur as no fuel container on-site will exceed this capacity.

### 6.1 *Spills on Land (gravel, rock, soil and vegetation)*

Trench or ditch to intercept or contain flow of fuel or petroleum products on land where feasible (loose sand, gravel and surface layers of organic materials are amenable to trenching/ditching; trenching in rocky substrates is typically impractical and impossible.)

Construct a soil berm downslope of the spill. Use of synthetic, impervious sheeting can also be used to act as a barrier.

Where available, recover spills through manual or mechanical means including shovels, heavy equipment and pumps.

Absorb petroleum residue with synthetic sorbent pad materials.

Recover spilled and contaminated material, including soil and vegetation.

Transport contaminated material to approved disposal or recovery site. Equipment used will depend on the magnitude and location of the spill.

Land based disposal is only authorized with the approval of government authorities.

### 6.2 *Spills on Snow*

Trench or ditch to intercept or contain flow of fuel or petroleum products on snow, where feasible (ice, snow, loose sand, gravel and surface layers of organic materials as amenable to trench/ditching; trenching in solid, frozen ground or rocky substrates is typically impractical and impossible).

Compact snow around the outside perimeter of the spill area.

Construct a dike or dam out of snow, either manually with shovels or with heavy equipment such as graders and dozers where available.

If feasible, use synthetic liners to provide an impervious barrier at the spill site.

Locate the low point of the spill area and clear channels in the snow, directed away from waterways, to allow non-absorbed material to flow into the low point.

Once collected in the low area, options include shoveling spilled material into containers, picking up with mobile heavy equipment, pumping liquid into tanker trucks or using vacuum truck to pick up material.

Where safe, disposal can be done through in-situ combustion with approval from government and safety consultants.

Transport contaminated material to approved disposal site. Equipment used will depend on the magnitude and location of the spill.

### 6.3 *Spills on Ice*

Contain material spill using methods described above for snow, if feasible and/or mechanical recovery with heavy equipment.

Prevent fuel/petroleum products from penetrating ice and entering watercourses.

Remove contaminated material, including snow/ice as soon as possible.

Containment of fuel/petroleum products under ice surface is difficult given the ice thickness and winter conditions. However, if the materials get under ice, determine area where the fuel/petroleum product is located.

Drill holes through ice using ice auger to locate fuel/petroleum product.

Once detected, cut slots in the ice using chain saws and remove ice blocks.

Fuel/petroleum products collected in ice slots or holes can be picked up via suction hoses connected to portable pump, vacuum truck or standby tanker. Care should be taken to prevent the end of the suction hose clogging up by snow, ice or debris.

Fuel/petroleum products that have collected in ice slots may be disposed of by in-situ burning if sufficient holes are drilled in ice. Once all the holes are drilled, the oil which collects in the holes may be ignited. Consult with fire/safety consultants and government authorities to obtain approval.

### 6.4 *Spills on Water*

Contain spills on open water immediately to restrict the size and extent of the spill.

Fuel/petroleum products which float on water may be contained through the use of booms, absorbent materials, skimming and the erection of culvers.

Deploy containment booms to minimize spill area, although effectiveness of booms may be limited by wind, waves and other factors.

Use sorbent booms to slowly encircle and absorb spilled material. These absorbent are hydrophobic (absorb and repel water).

Once booms are secured, use skimmers to draw in hydrocarbons and minimal amounts of water. Skimmed material can be pumped through hoses to empty fuel tanks/drums.

Culverts permit water flow while capturing and collecting fuel along the surface with absorbent materials.

Chemical methods including dispersants, emulsion - treating agents and shoreline cleaning will be considered.

**NOTE:**

1. **Material Safety Data Sheets** for all hazardous materials involved in this project are listed in Appendix III. These MSDS sheets are for all drilling muds, polymers and greases as well as for diesel, propane and gasoline. Some of the products listed are not on site but are included in case these drilling additives are required in the event of poor ground conditions.
2. In-situ combustion is a disposal method available for fuels and petroleum products. In-situ burning can be initiated by using a large size portable propane torch (tiger torch) to ignite the fuel/petroleum products. Highly flammable products such as gasoline or alcohol, or combustible material such as wood, may be used to promote ignition of the spilled product. The objective is to raise the temperature for sustained combustion of the spilled product.  
  
Precautions need to be taken to ensure safety of personnel. Also, spilled product should be confined to control burning. These include area where the spilled material has pooled naturally or been contained via dikes, trenches, depressions or ice slots. Prior to any attempts at in-situ burning, consultation with experts and approval by government authorities are required.
3. Chemical response methods are also available and may include the use of dispersants, Emulsions-treating agents, visco-elastic agents, herding agents, solidifiers, and shoreline cleaning agents.
4. Biological response methods include nutrient enrichment and natural microbe seeding.
5. Site remediation will be completed as per the advice of government authorities.

## **7.0 RESOURCE INVENTORY**

**Resources available on site:**

Trenching/digging equipment in the form of picks and shovels.

Absorbent material (pads)

Pumps

Impervious sheeting (tarps)

Plastic bags, buckets, empty drums for collection of contaminated material.

**Resources available from other sources:**

Larger pumps if necessary; Yellowknife, NT or Rankin Inlet, NU  
Bobcat/excavator; Yellowknife, NT or Rankin Inlet NU

Contact: EBA Engineering Consultants Ltd.  
Phone: (867) 873-2287

Contact: Discovery Mining Services Ltd.  
Phone: (867) 920-4600

Contact: Y&C Enterprises  
Phone: (867) 645-2546

**8.0 TRAINING/EXERCISE**

All contract personnel will be briefed and given a copy of the Fuel Spill Contingency Plan before field operations begin. Mock spill response exercises will be conducted early in the program to ensure response criteria, communication and reporting requirements are met and fully understood.