# SPILL CONTINGENCY PLAN KIKERK/KNIFE LAKE EXPLORATION PROJECT

KNIFE LAKE, WEST KITIKMEOT, NU
DE BEERS CANADA EXPLORATION INC.

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#### 1.0 INTRODUCTION

"De Beers Canada will ... conduct all activities in compliance with applicable legislation and other requirements, providing for the protection of the environment, employees and the public." – De Beers Canada Environmental Policy

The Kikerk/Knife Lake Spill Contingency Plan of De Beers Canada Exploration Inc. (DBCE), which is found on the following pages, shall be in effect from the current date (end of November 2005) until the end of November 2006, and is subject to revision as soon as programme details are finalised and as required thereafter. The Kikerk/Knife Lake Project, which, in its current form, commenced in spring 2000, is comprised of four KL claims and the adjoining TREE 1 claim (Figures 1a and 1b); all five claims have been taken to lease. DBCE is geological Operator of the project on behalf of a joint venture with Rhonda Diamond Corp. Previous drill programmes occurred at Knife Lake in 2000, 2001 and 2004; the currently-planned drill and trenching programme (Figure 1b) is scheduled to occur between May and June 2006. A camp location selected on the east shore of the Upper Tree River (Figure 1a) in 2003 but not used will be activated as a temporary tent camp to support the programme, then the tents removed. The crew will commute 1.5km to/from the worksite. Support services will come from the closest community, Kugluktuk, approximately 140km northwest, as well as from Yellowknife.

Co-ordinates of the property are: latitude  $66^\circ$  40'  $00^\circ$  –  $67^\circ$  30'  $00^\circ$  and longitude  $113^\circ$  04'  $00^\circ$  –  $113^\circ$  20'  $00^\circ$ . The claims are contained within NTS mapsheets 86I/14 and 86P/03.

It also must be noted that the property is remote; no communities are located nearby, and thus no persons other than the camp population (16 to 20) of DBCE geologists and geophysicists, helicopter pilot and engineer, shift-drillers and foreman, cook/first-aid attendant, camp attendant(s), blasting crew and loader operator would be affected in the event of an incident.

The comprehensive DBCE Environmental Management System (EMS), *Appendix 1d* in the current water-use application, is in force in Nunavut, the NWT and in all provinces where DBCE is conducting exploration activities. This system, informed by the national De Beers Canada (DBC) Environmental Policy (*Figure 3*), is the key component of this Contingency Plan. All employees, whether permanent or casual, and programme contractors, are required to be trained in DBC policies and job-relevant procedures prior to engaging in work at a DBC site.

DBCE is keenly aware that planning for an emergency situation is not an option but an obligatory activity, equal in importance to the exploration programme itself. This Contingency Plan will be posted in camp and at

the drillshack and will be distributed to supervisory personnel for dissemination to staff and the drilling and trenching contractors.

#### 2.0 PERMITS AND AUTHORISATIONS

The Kikerk/Knife Lake property, comprised of 11 268.11 acres, is located entirely on Crown land in the West Kitikmeot and is governed by the following authorisations: (1) a Class A land-use permit from Indian and Northern Affairs Canada (INAC) – #N2003C0037 (valid until 01 February 2007); (2) a Type B water licence from the Nunavut Water Board – #NWB2KIK0405 and Nunavut Impact Review Board File #03EN128 (expiring 31 December 2005 and the subject of this application); (3) other authorisations – a drilling authorisation will be obtained from the Workers' Compensation Board (WCB), an Extended-Hours Permit will be obtained from Nunavut Labour Standards; a blasting permit will be obtained by the blasting contractor for the trenching programme and a magazine permit, if required.

#### 3.0 CAMP FACILITIES (TENTS AND DRILLSHACK)

#### 3.1 Facility Description

A tent camp – comprised of an office, contractor tent, kitchen, first-aid shack, latrine, dry, coreshack, generator shed and sleep tents (women's tent and 4 men's sleep tents for 4 persons each) – will be set up for the duration of the six-week programme, then completely removed. A drum cache will be established, with Jet-B and diesel fuels segregated; a drum spill kit will be stationed at the cache and at the camp (gen-shed area), with extra bundles of absorbent mats deployed wherever fuel is transferred, e.g., in catch-pails at heating-fuel drums. Copies of this Contingency Plan, Material Safety Data Sheets (MSDS), DBC's Environmental Policy and the DBCE EMS will be present in the camp office and at drillside.

The drillshack will be sited at each drilling location, along with a drum spill kit and extra absorbents. Since the blasting and trenching activity is to run concurrently for approximately 2 weeks of the programme, a separate drum spill kit will be deployed near the trench site, where an excavator will be stationed for removing overburden and kimberlite sample from the trenches. Fuels will be stored in groups no larger than 25 drums; propane and welding cylinders will be secured and chained. Extra absorbent pads will be on hand wherever fuel is transferred, as well as in drip pans under stationary equipment and at transfer hoses.

DBCE representatives will be present at mobilisation and demobilisation to ensure supply/replenishment of items in the spill-response inventory (*Table 4*) and to ensure final site cleanup and removal of all materials.

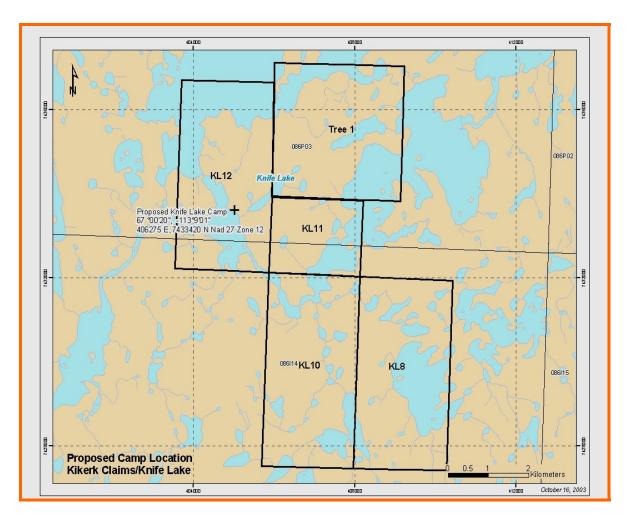


Figure 1a

Kikerk/Knife Lake Project claimblock, consisting of 4 *KL* claims and the *TREE 1* claim, all of which have been taken to lease. A potential campsite selected several years ago will be used for a temporary tent camp to support the spring 2006 programme, then tents removed. Should a 2007 programme occur, the camp could be reactivated.

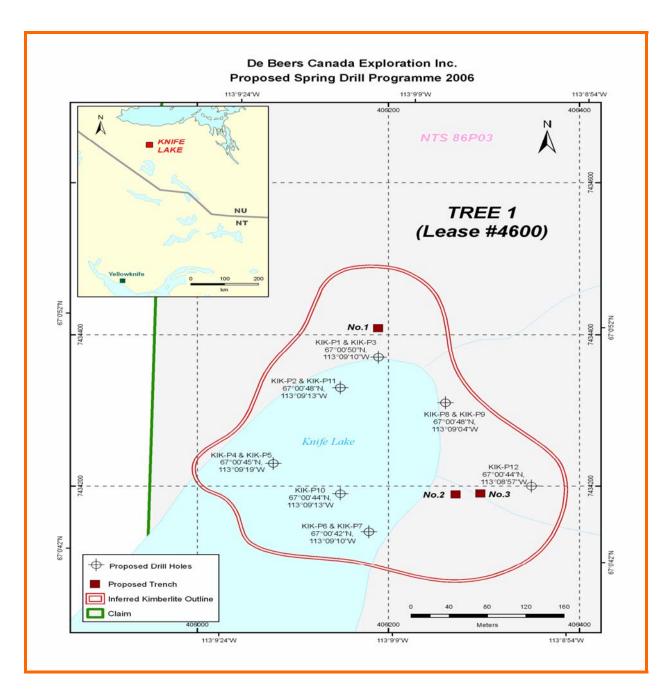


Figure 1b

Spring drilling and trenching programme 2006 will be centred on the north end of Knife Lake (86P/03). The crew will commute from camp, 1.5km SW. Prominent features in the region include Kikerk Lake (Kikkiktalik) to the north and Inulik Lake to south; the Tree River crosses the small lease-block. Several seasons of archaeological activity have resulted in the identification of a total of 7 sites in the Knife Lake area, none of which is in jeopardy from planned activities or the temporary camp. There is no known sensitive wildlife habitat in the area.

#### 3.2 Facility Personnel Obligations

The obligations and responsibilities of Contingency Plan awareness, maintenance and preparedness begin with the arrival of DBCE employees and contractors. Particularly in the case of new arrivals, supervisors are obliged to acquaint worksite staff with Company policies and procedures, e.g., DBCE's EMS policies and procedures as provided on software, in CD-ROM and (where requested) in paper copies; the EMS also contains governing legislation. The EMS contains guidance on topics ranging from fuel-handling to aircraft and equipment safety and fire procedures. Training and re-training of staff and contractors in environmental awareness, petroleum-handling and spills, and the DBC 5-Point Safety System occurs before each programme. To further ensure safety, camps and worksites such as Kikerk/Knife Lake operate under a strictly enforced dry-camp rule (drug and alcohol-free).

In advance of programmes, personnel are required to familiarise themselves with the Contingency Plan and their respective assigned roles, if applicable. Site personnel are trained in the areas of environmental awareness, site safety, and petroleum-handling and spill response (which course includes discussion of emergency procedures for fire and spill response, as well as distribution of cards with action steps for fire and spill response). In addition, DBCE requires that programme personnel and contractors be trained in basic first-aid and CPR. Supervisors are trained in/certified in Transport of Dangerous Goods and hold either Supervisor Level I or Level II certificates from Nunavut/NWT Mine Health and Safety, as applicable.

One individual with Level II first-aid will be stationed on site, and contact established with the Kugluktuk Health Centre, should such services be required.

#### 4.0 FUEL AND CHEMICAL PRODUCT TRANSPORT AND STORAGE

As the Kikerk/Knife Lake Project is being conducted at a remote site without either ice route or all-weather road access, fuel will be flown to the site. Empties will be backhauled at least weekly.

A cache of 205L drums of diesel, Jet-B and gasoline (petrol) will be stored on land near the camp tents, with each fuel group kept discrete in clearly-marked containers. Drums of Jet-B will be positioned close to the helicopter landing area, and will be monitored by the pilot, who has been trained in DBCE's fuel-handling and spills-prevention procedures; a full-size spill kit will be shared between the fuel cache and heli area (*Table 3*). Drums will be inspected daily by DBCE and contractor personnel for container and bung soundness, and there will be daily monitoring of drums supplying the camp tents and drill. Waste oil/filters and any waste fuel will be collected in drums marked for that purpose.

It is estimated that a total of 200 drums of diesel, 100 drums of Jet-B, 25 45kg cylinders of propane and 6 drums of petrol for the skidoos will be required. Absorbent padding and socks will be kept on hand for fuel transfers and for possible points of leakage, such as valves and camlocks. Usage of engine oil (for equipment such as the generator, drill, loader and skidoos), along with gear lubricants, cleaners and drill-equipment greases is expected to total less than 140 containers (< 500L). A proposed inventory is shown below (*Table 1*).

<u>TABLE 1</u>

Projected Fuel and Oil Use for 2006 Exploration Activities

| Inventory Items              | # Items | Volume  |
|------------------------------|---------|---------|
| Diesel and Aviation Turbine  |         |         |
| Fuel                         | 300     | 61,500  |
| Unleaded Petrol (Gasoline)   | 6       | 1,230   |
| Oils/Lubricants/Cleaners     | 140     | 500     |
| Propane                      | 25      | 1,125kg |
| Oxygen (Welding and Medical) | 3       | 135kg   |
| Acetylene                    | 4       | 180kg   |
|                              |         |         |
| Total Volume – Litres:       |         | 63,230  |
| Total # of Cylinders:        | 32      |         |

#### 5.0 BASIC STEPS – SPILL PROCEDURE

De Beers Canada Exploration Inc. (DBCE) believes that, in the case of a spill or environmental emergency, it is necessary to react in the most immediate, safe and environmentally responsible manner. No spill or incident is so minor that it can be ignored.

According to the DBCE Environmental Management System –Operating Procedure #036, the basic steps of a response plan are as follows:

- 1. Ensure the safety of all persons at all times.
- 2. Find and identify the spill substance and its source, and, if possible, stop the process or shut off the source.
- Inform the immediate supervisor or his/her designate at once, so that he/she may take appropriate action. (Appropriate action includes the notification of a government official, if required).
- 4. Contain the spill or environmental hazard, as per its nature, and as per the advice of the Spill Line and Environmental Adviser, as required.

5. Implement any necessary cleanup or remedial action.

#### 5.1 BASIC STEPS - CHAIN OF COMMAND

- 1. Immediately notify the Project Geologist **(416) 645-1710** (Toronto office) or Acting Project Geologist (office # , or at worksite) of any spill. He/she then notifies the Response Co-ordinator (if a different individual). *Worksite phone number to be provided*.
- 2. Response Co-ordinator or his/her designate then contacts the **24-Hour Spill Line**, if warranted, as follows:

Phone: (867) 920-8130

FAX: (867) 873-6924

A "Spill Report Form" (*Figure 2*) is filled out as completely as possible before or after contacting the 24-Hour Spill Line.

Other members of the team are notified, such as the Lands Manager (Shirley Standafer-Pfister) (867) 766-7356 (phone), (867) 444-1239 (mobile) and Senior Manager (Peter Williamson) (416) 645-1710, ext. 2343.

If the spill is minor (such as dripping of fuel during transfer, which can be absorbed by padding, absorbent crystals, etc.), then the Lands Manager in Yellowknife is notified by phone (867) 766-7356, FAX (867) 766-7348, mobile (867) 444-1239 or e-mail: shirley.standaferpfister@ca.debeersgroup.com

(For additional contact information, see *Appendix*).

### 6.0 TAKING ACTION

#### 6.1 BEFORE THE FACT: PREVENTIVE MEASURES

The following actions illustrate the proactive approach of DBCE to environmental care. In addition, they minimise the potential for spills during fuel handling, transfer or storage:

- 1. Fuel transfer hoses with camlock mechanisms are to be used.
- 2. Carefully monitor fuel content in the receiving vessel during transfer.
- 3. Clean up drips and minor spills immediately.
- 4. Regularly inspect drums, tanks and hoses for leaks or potential to leak. (For example, fabric-sheathed hose, such as fire hose or petrol-transfer hoses may develop pinholes or surficial cracks from normal weathering out of doors.
- 5. Drip pans are to be used at all sites where fuel is transferred and under stationary machinery (e.g., pumps and gen-sets).
- 6. Train personnel, especially those who will be operators, in proper fuel-handling and spill-response procedures.

#### 6.2 AFTER THE FACT: MITIGATIVE MEASURES

- 1. First steps to take when a spill occurs:
  - a) Ensure your own safety and that of others around you, beginning with those nearest to the scene.
  - b) Control danger to human life, if necessary.
  - c) Identify the source of the spill.
  - d) Notify the Project Geologist, as soon as is practical; he/she in turn notifies the Response Co-ordinator (if a different individual).
  - e) Assess whether or not the spill readily can be stopped.
  - f) Contain or stop the spill at the source, if possible, by following these actions:
    - i. If filling is in progress, STOP AT ONCE.
    - ii. Close or shut off valves.
    - iii. Place plastic sheeting at the foot of the tank or barrel to prevent seepage into the ground or runoff of fuel.
    - iv. Use a patch kit to seal leaks, if practical to do so.

#### 2. Secondary steps to take:

- a) Determine status of the spill event.
- b) If not reported under <u>1. d</u>), report incident and steps taken to the Project Geologist, who in turn informs the Response Coordinator (if a different individual).
- c) If necessary, pump fuel from a damaged and/or leaking tank or drum into a refuge container.
- d) Notify the 24-hour Spill Report Line, and receive further instructions from the appropriate contact agencies listed in *Appendix* (e.g., disposal of contaminated soil or ice/snow in sealed containers for removal from site, etc.).
- e) Complete and FAX a copy of the Spill Report Form (present in camp and at each worksite).
- f) Notify permitting authorities and the Lands Manager.
- g) If possible, resume cleanup and containment.

#### 6.3 FUEL SPILLS ON LAND

"Land" may be defined as soil, gravel, sand, rock and vegetation. Advice on spill containment and cleanup may be obtained from the 24-Hour Spill Line and/or from the Lands Manager and Environmental Adviser.

#### 6.3.1 Procedure for spills on rock

For hydrocarbon spills on rock outcrops, boulder fields, etc.:

- 1. Response Co-ordinator or his designate obtains plastic tarp(s) and absorbent sheeting on-site.
- 2. A berm of peat, native soil or snow is constructed downslope of the seepage or spill.
- 3. The tarp is placed in such a way that the fuel can pool for collection and removal (e.g., at the foot of the berm.) If there is a large volume of spilled product, pump the liquid into spare empty drums for sealing and disposal later off-site.

- 4. Absorbent sheeting is placed on the rock to soak up spilled oil, petrol, etc.
- Saturated sheeting is disposed of in an empty drum, which is then labelled and sealed. Alternatively, pads or sock-booms may be wrung out into the empty drum(s), the drums marked and then secured for eventual disposal off-site. The pads may be reused.
- 6. The disposal container is then transported off-site.
- 7. Depending on the nature and volume of the spill, the 24-Hour Spill Line may be contacted after Step 4 or after Step 5.

#### 6.3.2 Procedure for spills on land

- Response Co-ordinator or his designate obtains plastic tarp(s), absorbent sheeting, Spagh-zorb or other ultra-dry absorbent and any other necessary spill containment equipment, pump, hoses, etc.
- 2. A berm of peat, native soil or snow is constructed downslope of the seepage or spill.
- The tarp is placed in such a way that the fuel can pool for collection and removal (e.g., at the foot of the berm). If there is a large volume of spilled product, pump the liquid into spare drums, and dispose of product by transporting off-site to a waste disposal facility.
- 4. Petroleum-product sheening on vegetation may be controlled by applying a thin dusting of Spagh-Zorb or other ultra-dry absorbent to the groundcover.
- 5. Contact the 24-Hour Spill Line. Receive instruction from the appropriate contact agencies listed in *Appendix* regarding collection of the contaminated soil or vegetation, its removal and site cleanup/restoration.
- 6. Depending on the nature and volume of the spill, Response Coordinator or his designate implements the spill action plan.

#### 6.4 FUEL SPILLS ON WATER

#### 6.4.1 Procedure for spills on water

It is important to limit immediately the extent of spills. The following is the procedure to be implemented when an incident occurs:

10

- 1. If the spill is small, deploy hydrophobic (water repellent) absorbent pads on water. Hydrophobic pads readily absorb hydrocarbons. Alternatively, an ultra-dry absorbent designed for use on water-based spills may be deployed.
- 2. If the spill is larger, ready several empty drums to act as refuge containers for the spill.
- 3. Deploy *containment* booms on the water surface to "fence in" the spill area gradually and to prevent it from spreading. Keep in mind that environmental factors such as high winds and wave action can adversely affect attempts at spill cleanup.
- 4. Absorbent booms then can be deployed to encircle and then absorb any hydrocarbon spillage that may have escaped the containment boom.
- Once a boom has been secured, a skimmer may be brought onscene to aid in capture of the hydrocarbon; once captured, the product should be pumped to the empty fuel drums and held for disposal.
- 6. As soon as possible either during or after the incident, contact the 24-Hour Spill Line. (This will ensure government agencies are informed.)
- 7. If the spill is sufficiently large, and cannot be contained by rapid action of personnel present, contact the Mobile Environmental Response Unit for assistance (*Appendix-Contacts*). Weather permitting, this unit can be flown to an emergency spill site within several hours.

#### 6.5 FUEL SPILLS ON SNOW AND ICE

#### 6.5.1 Procedure for spills on snow and ice

By its nature, snow is an absorbent; fuel spilled on snow is collected with relative ease, e.g., by shovel, in the case of small-range spills.

#### **Drilling from ice: Best practice**

Driving the casing invariably is a messy (visually untidy) but benign operation. Although drilling from ice is accomplished by means of a closed-circuit system, wet sediments brought to surface may drip onto the ice surrounding the drill. Dribblings of fuel and oil from the drill, heater, compressor(s), etc., occasionally may collect on ice during a shift, even when drip pans are placed under equipment, but easily are absorbed by snow, and, if required, by ultra-dry commercial absorbent. Drillsites are marked with flags and pickets prior to drilling, and this enables easy visual location of drillsites after move-off. Scraping and/or steaming removes all such material, and removed material is then bagged and transported by snowmachine or other vehicle to a containment area (sump or depression) on shore. After drillsite cleanup, no débris will remain on the ice.

No material or equipment not required for immediate use is to be stored by the company or its contractors on the surface ice of lakes or other waterbeds. Material or equipment so placed (e.g., survey stakes, fuel, timbers, pipe racks, drill sheds, and the like) is to be placed on ice of sufficient thickness (see attached <u>Table 2</u>) and removed promptly once temporary use has ceased.

#### 6.5.1.1 SPILLS ON SNOW

- 1. Assess the nature of the spill. Necessary equipment might include shovels, plastic tarp(s), empty drums.
- 2. Shovel or scrape contaminated snow and deposit in empty refuge drums. If the spill is more extensive, build peat-bale berms, or compacted-snow berms with plastic over top, around the affected area.
- 3. Either during or immediately after the incident, notify the 24-Hour Spill Line. Receive instructions on the preferred disposal method (e.g., storage in sealed drums, transport off-site for disposal) from the appropriate contact agencies listed in *Appendix*.

#### 6.5.1.2 **SPILLS ON ICE**

Spills on ice are handled in similar fashion as those on snow. However, as ice presents the potential danger of immediate access to water, care must be taken to respond quickly. Should fuel seep or flow through cracks or breaks in the ice, despite all precautions, assistance should be sought immediately.

- 1. Construct a compacted-snow berm around the edge of the spill area.
- Although hard ice will retard or prevent fuel entry to the receiving waters below, all contaminated snow and ice, as well as objects embedded in the ice (such as gravel) must be scraped from the ice surface and disposed of in an appropriate manner.
- 3. Contact the 24-Hour Spill Line. Receive disposal instructions (e.g., sealing in drums, transport off-site, etc.) from the appropriate contact agencies listed in *Appendix*.
- 4. Where fuel or oil has escaped to the receiving waters, also contact the 24-hour emergency line of the Mobile Environmental Response Unit (*Appendix-Contacts*).

#### 6.6 PROCEDURE FOR CHEMICAL SPILLS

- 1. Assess the hazard of the spilled material. Members of the camp emergency-response team who might be susceptible in certain situations, (such as asthmatics, where fumes or airborne particles are evident), should be replaced with alternates.
- 2. Assemble the necessary safety equipment before response, (e.g., latex or other protective gloves, goggles or safety glasses, masks or breathers, etc.).
- 3. Apply absorbents to soak up liquids.
- Place plastic sheeting over solid chemicals, such as dusts or powders, to prevent their disbursement by wind or investigation by birds or other mammals.
- 5. Neutralise acids or caustics. Place spilled material and contaminated cleanup supplies in an empty refuge drum and seal for disposal.
- 6. Contact the 24-Hour Spill Line. Receive instructions on disposal methods and designated locations from the appropriate contact agencies listed in *Appendix*.

#### **NUNAVUT SPILL REPORT FORM**

## Figure 2

| NWT SPILL RE                                  | EPORT (Oil, Gas, Hazardous Ch  | emicals or other Materials         | 24-Hour Report Line<br>Phone: (867) 920-8130 |
|---|--|------------------------------------|--|
|   |  |                                    | Fax: (867) 873-6924                          |
| A Report Date and time                        | B Date and time of Spill (if known)  | C  Original                        | Spill Number                                 |
|   |  |                                    |  |
| D Location and map coordinates (if known)     | and direction (if moving)  | Update #                           |  |
| l D   | e ay to be a debrat to the protection of the state of the |                                    |  |
| - Party Pennancials for Saill                 |  |                                    |  |
| E Party Responsible for Spill                 |  |                                    |  |
|   |  |                                    |  |
| Product(s) spilled and estimated quantile:    | s (Provide metric volumes/weights if possible)   |                                    |  |
|   |  |                                    |  |
| G Cause of Spill                              |  |                                    |  |
| G   |  |                                    |  |
| Is spill terminated? If spill is conti        | nuing, give estimated rate   | Tra Estant of contaminate          | d area (le ce es li eccelule)                |
| H is spill terminated?                        | nuing, give estimated rate   | K Extent of contaminate            | d area (in sq. m if possible)                |
|   |  |                                    |  |
| Factors affecting spill or recovery (weather  | er conditions, terrain, snow cover, etc.)  | Containment (natural depre-        | ssion, dyke, etc.)                           |
|   |  |                                    |  |
| N Action, if any, taken or proposed to conta  | in, recover, clean up or dispose of product(s) and   | contaminated materials             |  |
| IN .  |  |                                    |  |
|   |  |                                    |  |
|   |  |                                    |  |
|   |  |                                    |  |
| O Do you require assistance?                  | P Possible hazards to perso  | ons, property, or environment; eg: | fire, drinking water, fish or wildlife*      |
| Do you require assistance?                    | Yes, Describe:   |                                    |  |
| Comments and/or recommendations *:            |  |                                    |  |
| Q comments and recommendations.               |  | FOR SP                             | LL LINE USE ONLY                             |
|   |  |                                    | Lead Agency                                  |
|   |  |                                    |  |
|   |  |                                    |  |
|   |  |                                    | Spill significence                           |
|   |  |                                    |  |
|   |  | Lead A                             | gency contact and time                       |
|   |  |                                    |  |
|   |  |                                    |  |
|   |  |                                    |  |
|   |  |                                    |  |
|   |  | Is this file now o                 | losed?                                       |
|   |  |                                    |  |
| Reported by:                                  | Position, Employer, Location   | Telephone No:                      |  |
|   |  |                                    |  |
| Reported to:                                  | Position, Employer, Location   | Telephone No:                      |  |
| rioperies to.                                 | Toshon, Empoyar, Eucason   | Telephone No.                      |  |
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| *Put additional comments on next page (Please | type in the Box letter you are referring to in your o  | comments)                          |  |
| Additional comments                           |  |                                    |  |
|   | , wantona commonto   |                                    |  |
|   |  |                                    |  |
|   |  |                                    |  |
|   |  |                                    |  |

NOTE: Environment Canada confirms that this is the  $\underline{\text{current form}}$  for spill reporting in Western Nunavut.

#### TABLE 2

#### **GUIDE TO REQUIRED ICE THICKNESS**

#### ICE STRENGTH FOR TRAVEL

(expressed in inches and centimetres)

(weights and ice thickness measures rounded to nearest whole)

| 242,500lb. (121t) = | = 50 inches | (127cm) |
|---------------------|-------------|---------|
|---------------------|-------------|---------|

154,000lb. (77t) = 40 inches (102cm)

100,000lb. (50t) = 32 inches (81cm)

55,000lb. (28t) = 25 inches (64cm)

22,000lb. (11t) = 15 inches (38cm)

17,600lb. (9t) = 14 inches (36cm)

7,700lb. (4t) = 10 inches (25cm)

#### ICE STRENGTH FOR STATIONARY LOADS

(expressed in inches and centimetres)

(weights and ice thickness measures rounded to nearest whole)

242,500lb. (121t) = 90 inches (229cm)

154,000lb. (77t) = 70 inches (178cm)

100,000lb. (50t) = 60 inches (152cm)

55,000lb. (28t) = 43 inches (109cm)

22,000lb. (11t) = 30 inches ( 76cm)

17,600lb. (9t) = 24 inches (61cm)

7,700lb. (4t) = 18 inches (46cm)

#### TABLE 3

#### REQUIRED ICE THICKNESS FOR TYPICAL AIRCRAFT WEIGHTS

#### Transport Canada Industrial Standard

Table 3 below presents a numerical summary of the Transport Canada (1974) required fresh water ice thickness versus aircraft load from the AK-68-14-001 standard.

TABLE 3

AK-68-14-001 Transport Canada Standard

| Weight – Ib/kg  | Weight - kN | Required Fresh-Water Ice |
|-----------------|-------------|--------------------------|
|                 |             | Thickness (m/in)         |
| 10 000/4 545    | 44.5        | 0.33/13                  |
| 30 000/13 640   | 133.5       | 0.58/23                  |
| 67 000/30 400   | 300.0       | 0.90/35.5                |
| 135 000/61 360  | 600.0       | 1.27/50                  |
| 800 000/364 000 | 3 570.0     | 3.20/126                 |

(Source: Winter Operations Report 1995/96, Kennecott/Aber, Lac de Gras, by 669107 Alberta Ltd.)

#### TABLE 4

#### **CONTENTS OF SPILL KITS - SPRING 2006**

#### **WORKSITE – KNIFE LAKE**

#### <u>Drillshack – Spill-Kit Drums – 1</u>

#### <u>Trenching Site – Spill-Kit Drums – 1</u>

<u>Location: Moves with drillshack or trenching site</u>: 1 complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. *Information on specific kit will be supplied prior to programme startup, and the Spill Plan will be revised accordingly.* 

#### <u>Fuel Storage Area/Heli Area – Spill-Kit Drums – 1</u>

1 complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. *Information on specific kit will be supplied prior to programme, and the Spill Plan will be revised accordingly.* 

#### Camp - Spill-Kit Drums - 1

<u>Location</u>: <u>Stationed at gen-shed, but can be deployed, where required</u>: 1 complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. *Information on specific kit will be supplied prior to programme, and the Spill Plan will be revised accordingly.* 

#### TABLE 5

#### **GENERAL Response Inventory – KNIFE WORKSITE – SPRING 2006**

- Fire extinguishers (valid/recharged) in each structure: Tents, drillshack.
- Water pump and spare at camp and at drillshack; hoses and fittings
- Hammers, assorted weights, at coreshack and at drillshack
- Assorted 10L-20L plastic pails; galvanised metal pails (approx. 10L each)
- Ice auger (gas-powered) c/w extensions
- 127L plastic garbage bags (boxes of 20 each) kitchen and latrine
- Plastic tarps assorted sizes
- Extra bundles of absorbents
- Fuel-transfer pump at camp, and 1 at drillshack

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#### 7.0 GENERAL RESPONSE AND MAINTENANCE INFORMATION

#### 7.1. GENERAL EQUIPMENT AND PROXIMITY

Equipment available to aid in spill response and remediation includes:

- A helicopter, which can be dispatched to a drillsite from the camp within minutes, or in approximately 1 hour from Kugluktuk. Contractors ready to assist with aircraft are: Great Slave Helicopters (867-873-2081), who have a pilot and engineer attached to the programme and are in 24-hour communication with their Yellowknife dispatcher, or, for fixed wing, Air Tindi (867-669-8200), based in Yellowknife.
- 2. Spill-response equipment is available from Kugluktuk, 1 hour away by air, or from Yellowknife, 2 hours away by air. Miscellaneous equipment at the Knife worksite (cf. Table 4 above) also will be made available for spill response and cleanup, including hand tools, shovels (earth and snow), fire extinguishers, fuel transfer pumps, water pumps, miscellaneous hoses and fittings.
- 3. Training and vigilance by site personnel reduce the opportunity for spills. Daily maintenance checks are conducted by the pilot, DBCE personnel (project geologist and camp attendant) and contractor personnel. A team of experienced personnel, comprised of several of the following (a Camp Manager/Project Manager, Lands Manager, Camp Attendant/Handyman and potentially one or more field personnel) will establish and inspect the camp, check inventories, effect any repairs, and replace and order any parts or environmental or safety supplies that may be required. At demobilisation, a similarly-qualified team will remove the camp and clean up the site (e.g., remove burn-barrel ash and cover sumps), complete a final inventory check, shut off/disconnect/disengage fuel and power sources and file a final inventory list. Any final cleanup hampered by sever weather would occur in summer, if necessary.

#### 8.0 TRAINING AND PRACTICE

#### 8.1 TRAINING AND PRACTICE DRILLS

All members of the Knife programme response team – as well as members of the general team, such as the Lands Manager and the Expeditor – will be familiar with the spill-response resources at the Knife

worksite (including their location and how to access them), this Contingency Plan, and appropriate spill-response methods. Involvement of other personnel may be required, from time to time. This familiarity will be acquired through:

- 1. Initial or refresher training (practice drills), as appropriate, provided once per field season.
- 2. Regular inventory updates, provided in list form to all team members and to the De Beers offices in Yellowknife and Toronto. Information to be reported includes listing of all resources, number of items, their location, condition, date of last inspection and any special comments (such as expiry dates, under whose authority they may be accessed and special handling instructions, if any).

#### 9.0 RESPONDING TO FAILURES AND SPILLS

#### 9.1 SPILL-RESPONSE TEAM

Following is a list of personnel trained to respond to spill incidents, and their respective responsibilities:

| Project Manager | to be selected |
|-----------------|----------------|
|                 |                |

Knife Worksite - 67° 0' 47" N and 113° 9' 23" W (Zone 12)

MSAT Telephone to be provided
Globalstar Telephone to be provided
Coppermine Inn (867) 982-3333

DBCE phones (867) 766-7356 (Yellowknife)

(416) 645-1710 (Toronto) (867) 766-7348 (Yellowknife)

(416) 423-0081 (Toronto)

DBCE Temp. Office-Kugluktuk (867) to be provided, if utilised Responsibilities

Assume authority over the spill scene and personnel involved.

Activate the Contingency Plan.

DBCE FAXes

Report, or direct Response Co-ordinator (if a different

individual) to report, the spill to the

24-Hour Spill Report Line (867) 920-8130.

Report to Senior Manager, provide recommendations on resource requirements (e.g., additional personnel or equipment

in order to complete cleanup, if required.

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Response Co-ordinator Project Manager or his designate

Knife Worksite - 67° 0' 47" N and 113° 9' 23" W (Zone 12)

MSAT Telephone to be provided Globalstar Telephone to be provided

Responsibility Assume all duties of co-ordinating on-site response, including

to be selected - Spring 2006

mobilisation of additional personnel, equipment and materials,

as delegated by the Project Manager.

(Alternate) Project

Manager (when on site)

Knife Worksite - 67° 0' 47" N and 113° 9' 23" W (Zone 12)

MSAT Telephone to be provided Globalstar Telephone to be provided

DBCE phones (867) 766-7350 (Yellowknife)

(416) 645-1710 (Toronto)

DBCE FAXes (867) 766-7351 (Yellowknife)

(416) 423-0081 (Toronto)

DBCE Temp. Office-Kugluktuk (867) to be provided, if utilised Perform Project Manager response duties in his/her absence.

Responsibility

Senior Manager

Peter Williamson

DBCE phone (416) 645-1710; ext. 2343 (Toronto)

DBCE FAX (416) 423-0081 (Toronto)

Responsibilities Occasionally, Senior Manager may fill in for Project Manager

on site. In such case, assumes all responsibilities of that role. Co-ordinates office involvement. Acts as chief spokesperson with government agencies, media and public, as appropriate; government contact delegated to Lands Manager or similar. Ensures documentation of cause of the spill and effectiveness of the cleanup, and ensures implementation of the appropriate

measures to prevent a recurrence.

Lands Manager Shirley Standafer-Pfister shirley.standaferpfister

@ca.debeersgroup.com

DBCE direct-line (867) 766-7356 (Yellowknife)
DBCE FAX (867) 766-7348 (Yellowknife)

Mobile phone (867) 444-1239 (Yellowknife)

Responsibilities Co-ordinates with regulators, environmental advisers,

aboriginal communities, and may order/organise response, as required, to ensure compliance with regulatory requirements.

Advises on land-use matters.

**Environmental Adviser** EBA Engineering Ltd.

EBA phone (867) 920-2287 (Yellowknife)
EBA FAX (867) 873-3324 (Yellowknife)
Contact Matthew Barnette or Steve Moore

Responsibilities Adviser provides expert advice on environmental/logistical

cleanup requirements for Northern setting.

May provide assistance in developing any required testing or monitoring programme, or in activating an existing programme.

May recommend preventive measures.

**Project Personnel** (Field Geologists – to be hired – Spring 2006; 1 Great Slave

Helicopters pilot and 1 engineer; 2 drillers per shift; 1 drill foreman; 1 trenching contractor per shift (if on site), 4-6

persons on hand during shift.

Knife Worksite-67° 0' 47"N 113° 9' 23" W (Zone 12)

MSAT Telephone-DBCE to be provided Globalstar-Boart Longyear to be provided

Responsibility Assume response duties as assigned by Project Manager,

Alternate Project Manager and/or the Response Co-ordinator.

#### 9.2. SPILL-RESPONSE TEAM OBLIGATIONS

The obligations and responsibilities of Contingency Plan awareness, maintenance and preparedness begin with the arrival of DBCE employees and contractors. Particularly in the case of new arrivals, the supervisor is obliged to acquaint programme staff with Company policies and procedures as enshrined in the De Beers Canada Environment Policy (Figure 2) and detailed in the DBCE Environmental Management System (EMS), kept as software, on CD-ROM and/or hard copy in the site office, and also available on-line, whenever remote-access internet is available. Material Safety Data Sheets (MSDS) on hazardous products also are kept available on site. In addition, all supervisors are required to have successfully completed the Mine Safety Supervisor Level I course (as a minimum), whether employees of the contractor (such as a drilling company) or DBCE.



#### POLICY STATEMENT

### **ENVIRONMENTAL MANAGEMENT**

De Beers Canada\*, active in diamond exploration and mining, is committed to the concept of sustainable development, which requires balancing good stewardship of the natural environment with economic growth.

#### Accordingly, De Beers Canada will:

- Conduct all activities in compliance with applicable legislation, and other requirements, providing for the protection of the environment, employees and the public;
- Apply appropriate good management practices in the absence of legislation or where De Beers believes more stringent criteria than those required by law are needed to advance environmental protection and to minimize environmental risks;
- Integrate the management of environmental, social, cultural and economic issues into company business and planning;
- Protect the environment through the wise use of resources and prevention of adverse environmental impacts, including pollution prevention;
- Implement, maintain and improve appropriate management systems and programmes to achieve environmental objectives, and to continually improve environmental performance through a process of regular review;
- Ensure awareness among employees and contractors of this environmental policy, promote shared responsibility and accountability for environmental obligations, and provide the support and training necessary to achieve these objectives; and
- Communicate openly with governments, employees, local communities and the public to sustain mutual understanding of environmental, social and economic issues.

\* Uniess otherwise stated, the term De Beers Canada means De Beers Canada Inc. and includes the Corporate, Exploration and Mining Divisions.

PS.01.03 Date: January 1, 2005 Prepared By: J.A. Fowler Approved By: R.G.Molyneux President and Chief Executive Officer

Rild Nolyman

Date Issued: May 25, 2001 Form No.: Env Policy

Revision No.: 03

Date of Revision: January 1, 2005

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\* ላ/ላJ፣ ኦቴbፖሲ-አዮ/Lፕ°σ-ር-២৮, ርህላ ኦቴbፖ, De Beers Canada, ጋዮቴጋ፣ ላበሊታይላጭ ርΔንઈ-55 De Beers Canada Inc. 

PS.01.03 Date: January 1, 2005

President and Chief Executive Officer

Prepared By: J.A. Fowler Approved By: R.G. Molyneux

Date Issued: May 25, 2001 Form No.: Env Policy

Rild Nohmunk R.G. Molyneux

Revision No.: 03 Date of Revision: January 1, 2005 Page 1 of 1

## **APPENDIX**

**CONTACT LIST** 

#### CONTACT LIST-SPILL RESPONSE / ASSISTANCE

Mobile Emergency Spill Response Unit Canadian Northern Oil (Shell Canada

**Bulk Plant, Yellowknife)** 

Matthew Wasserman 867) 873-3337 (during

business hours)

Peter Lane (867) 669-1459 (24-hour

mobile number)

**G&G** Expediting Glen MacCara (mobile) Local Expeditor

(867) 873-1866 JMS Supplies (Kugluktuk) (867) 982-3324

(Manfred Eder)

**Environment Canada** Craig Broome, Yellowknife (867) 669-4730; (867) 920-

5131 pager # after hrs.

Nunavut Office, Igaluit (Nunavut FAX line)

(867) 975-4644 (867) 975-4645

Lands Administration, Indian and Northern Affairs Canada

Lands Administrator,

(867) 975-4275

Nunavut District

(867) 975-4286 (FAX)

Water Resources Pat Larocque (867) 975-4298

Inspector, Indian and

Northern Affairs (Igaluit)

(FAX) (867) 975-6445

RCMP, Yellowknife Emergencies only: (867) 669-1111

detachment

Emergencies only: RCMP, Kugluktuk (867) 982-4111

detachment

Yellowknife (867) 873-4506

(867) 873-9056 (FAX) Fire Department

Kuqluktuk (867) 982-4222

Fire Department

Workers' Compensation Board –Occupational Health and Safety (Igaluit Office)

(877) 404-4407

Workers' Compensation Board-Exploration Site Accident Reports

(800) 661-0792 (24hr)

#### **APPENDIX**

## MATERIAL SAFETY DATA SHEETS (MSDS)

(See MSDS on accompanying CD – current as at 01 December 2005; should additional products be added, a new CD will be issued)

#### MATERIAL SAFETY DATA SHEETS

## FUELS, FUEL ADDITIVES, OIL Kikerk/Knife Lake Project – Spring 2006 Programme

(See MSDS on accompanying CD) - Regular Unleaded Gasoline - Shell - Diesel Fuel - Petro-Canada - Jet A-1 - Shell - Jet B - Shell - Jet B - ESSO (Imperial Oil) - Jet A-1 - ESSO (Imperial Oil) - Propane - Superior Propane - Diesel Fuel Oil Conditioner - Kleen-Flo - Kleen-Start Starting Fluid - Kleen-Flo - Duron Multigrade Engine Oil – Petro-Canada - Hydrex MV 22, 36, 60 - Petro-Canada - Chain Oil (Summer, Winter) - Petro-Canada - Polaris 2T VES Synthetic Oil - Polaris Sales - Amsoil Synthetic 2-Cycle Oil - Polaris Premium Blue Semi-Synthetic Blend - Polaris Sales

#### DRILLING MUDS, GREASES, LUBRICANTS Kikerk/Knife Lake Project – Spring 2006 Programme

(See MSDS on accompanying CD)
- EZ-MUD – Baroid of Canada
- QUIK-GEL – Baroid of Canada
- NL-165 Drilling Mud – Baroid of Canada
- Drill Rod Heavy Grease – Petro-Canada
- API Modified Thread Compound – Petro-Canada
- Grease OG-0, OG-1, OG-2 – Petro-Canada
- Poly Drill Clay Treat II – Poly-Drill
- Poly Drill 1300 – Poly-Drill
- WD-40 Aerosol – WD-40 Products
- Traxon XL Synthetic Blend 75W-90, 80W-140 – Petro-Canada
- Traxon 80W-90, 85W-140 – Petro-Canada

## WELDING SUPPLIES Kikerk/Knife Lake Project – Spring 2006 Programme

(See MSDS on accompanying CD)
- Oxygen – BOC Gases
- Acetylene – BOC Gases
- Covered Electrode (Easy Arc) – Lincoln Electric
- Low Fuming Bronze (Brazing) – Aufhauser

MISCELLANEOUS CHEMICALS
(FIRE EXTINGUISHER CHEMICAL, BATTERY, ANTIFREEZE,
SOLVENT, SPRAY PAINT)
Kikerk/Knife Lake Project – Spring 2006 Programme

(See MSDS on accompanying CD)
- Fire Extinguisher Chemical (ABC) – Flag Fire
- Lead-acid Battery – Exide Technologies
- Gas Line Antifreeze – Petro-Canada
- Spray Paint (Fluorescent, Marking) – Rust-Oleum
- Polaris Antifreeze 50/50 Pre-Mix PG – Polaris Sales