APPENDIX 5

NUNAVUT SPILL REPORT FORM

Northwest Territories

NUNAVUT SPILL REPORT (Oil, Gas, Hazardous Chemicals or other Materials)

ᓄᓇᕗᑦ ᑯᐊᒥ ᐅᓂᒃᑳᖅᑐᑦ ᐅᓂᒃᑳᖅᑎᑦᓴᖅᑐᑦ, ᒪᓕᑦ, ᐊᑦᑕᓐᓇᖅᑐᑦ

24-ᓄᑦ ᐃᑲᖏᓄᑦ ᐅᓂᒃᑳᖅᑎᑦᓴᓐᓇᖅᑐᖅ ᐅᖃᓕᒫᑦ

Phone/ᐅᖃᓕᑦᑎ (403) 920-8130

Fax/ᓱᒃᑐᒃᑯᑦ (403) 873-6924

Report date and time ᐅᑦᓗᖅ ᓯᖓᓐᓄᑦᓯᓗᒍ ᖃᓄᐃᓕᖓᑦᓯᓗᒍ ᐅᓂᒃᑳᑎᑦᓴᐃᓐᓇᑦ	**B** Date and time of spill (if known) ᐅᑦᓗᖓ ᐊᑎᑦᓯᓗᒍ ᖃᓄᐃᓕᖓᑦᓯᓗᒍ (ᖃᐅᔨᓴᕐᓂᕐᓯᓗᒍ)	**C** ☐ Original report ᓱᓕᓐᓂᕐᒥᒃ ᐅᓂᒃᑳᑦᓴᖅᑐᖅ ☐ Update no. ——— ᐅᓂᒃᑳᑦᓴᖃᖅᓯᖓᓐᓄᑦ ᓇᓕᑦᑎ__	Spill number ᐊᑎᑦᓴᑦ ᓇᓕᑦᑎ

D Location and map coordinates (if known) and direction (if moving)
ᓇᓂ ᐊᑎᒃ ᐊᓕᓗ ᓇᓇᖓᓐᓄᑦ ᓇᓕᑎᑦᓴᖅᑎᑦ (ᖃᐅᔨᓴᕐᓂᕐᓯᓗᒍ) ᐊᓕᓗ ᓇᒥᖓᑦᓴᓂᕐᓂᓕᖓᓐᓄᑦ (ᐃᖓᑎᖓᓂᕐᓂᑦ)

E Party responsible for spill
ᑭᓄᑦ ᐊᑎᑎᑎᑦ

F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)
ᑭᓯᑦ ᑭᓯᓚᓄᓂᑦ ᐊᑎᒃ ᖃᓄᑎᖅ ᐊᖏᓂᖃᖅᑐᑦ (ᐊᖏᓂᓐᓇ ᐅᖅᖓᑦᓂᖏᑦᓚᓄᓂᑦ ᐊᓯᖏᓐᓇᖅᑐᑦ)

G Cause of spill
ᑭᓯ ᐊᐃᓕᑦᑕᐅᑦ

H Is spill terminated? ᐊᑎᓯᖅ ᓄᖅᑲᖓᑎᑕᐅᑦ? ☐ yes/Δ ☐ no/ᐊᖅ	**I** If spill is continuing, give estimated rate ᓯᓚ ᐊᑎᓯᑦ ᖃᓄᑎᖅ ᓯᖅᓚᑎᑭᖅᑲᓯᓯᑦ	**J** Is further spillage possible? ᐊᑎᓕᖅᓄᑐᐃᓐᓇᓕᖅᑐᑦ? ☐ yes/Δ ☐ no/ᐊᖅ	**K** Extent of contaminated area (in square metres if possible) ᖃᓄᖅ ᐊᖏᑎᑎᑦ ᐊᑎᓐᓇᐅᓕᖅᑐᖅ (ᐅᑐᑐᓕᓚᒍ ᐊᓯᓂᕐᓂᑦ)

L Factors affecting spill or recovery (weather conditions, terrain, snow cover, etc.)
ᑭᓯᑦ ᐱᔨᑎᑕᐅᑦ ᐊᑎᓕᒍᑦ ᐅᑦᓯᓗ ᐊᖅᑭᑦᑕᐅᓚᓯᑎᑦᓴᒍ ᓯᓚ ᖃᓄᐃᓕᓐᓂᓕᓐᓂᒍᑦ, ᓂᓗ ᖃᓄᐃᓕᓐᓂᓕᓐᓂᒍᑦ ᐊᑐᓵᑕᐅᓚᓯᓕᓐᓂᒍᑦ ᐊᓯᖏᓐᓇᖅᑐᑦ, ᐊᓯᖏᓐᓇᖅᑐᑦ)

M Containment (natural depression, dykes, etc.)
ᐅᖅᓯᐊᓂᖃᖅᑎᑦ ᑭᓚᓂᒍᑦ ᐃᓯᖅᓴᓕᓯᓚᓕᖅᑐᖅ (ᓂᓇᒥ ᐃᓯᖅᓴᐃᑦ; ᐊᓯᑭᓕᔨᖅᑎᓂᓗ)

N Action, if any, taken or proposed to contain, recover, clean up or dispose of product(s) and contaminated materials
ᖃᓄᐃᓕᓐᓂᑕᐅᑦ, ᖃᓄᐃᓕᓐᓂᑎᑦᓯᓂᑦ ᐅᑦᓯᓗ ᖃᓄᐃᓕᓐᓂᑎᑦᓯᓂᑦ ᐊᑕᐅᓯᖏᑎᑎᑦᓴᓂᑦ, ᓄᖅᑲᖓᑎᑕᐅᓚᓯᑦ, ᓴᓗᓕᖅᓴᖅᑕᐅᑦ ᐅᑦᓯᓗ ᐃᑎᑦᑕᐅᓂᖅᓴᑦ ᐊᐃᓯᖅ (ᐊᐃᓯᓚᓗᓂᑦ) ᑭᓕᓗ ᐊᐃᑦᐊᑎᑦ.

O Do you require assistance?
ᐃᑲᔪᖅᑕᐅᔨᓴᖅᑲᓂᖅᓴᑦ?
☐ no ᑭᖅ ☐ yes, describe: Δ - ᓇᓗᐃᔨᖅᑐᒍ

P Possible hazards to persons, property, or environment; eg: fire, drinking water, fish or wildlife
ᐊᑦᑕᓇᓐᐃᑦᓇᓕᖅᓴᖅᑐᑦ ᐃᓗᓐᓂᑦ, ᑕᕐᕋᑎᑦᓴᐃᓐᓇᑦ ᐅᑦᓯᓗ ᐊᑎᑎᒍᑦ ᓱᓕᓐ - ᐃᑭᓚᓂᓂ, ᐃᒥᑦᒍᑦ ᓂᐅᖅᑲᖅᑕᐅᓱᒧᓂᓂ, ᐃᖅᑲᔨᓴᑦ ᐅᑦᓯᓗ ᓂᑦᓴᑎᓂᑦ

Q Comments and/or recommendations ᐅᖅᐳᓴᐃᑦ ᑭᓕᓗ ᐅᑦᓯᓗᓂᑦ ᖃᓄᐃᓕᒥᑎᕐᕕᐅᑦᑕᐅᑦ

FOR SPILL LINE USE ONLY
ᐊᑐᖅᑕᐅᔨᓴᖅ ᐊᐃᓯᓚᑦ ᐅᖃᓕᑦᐃᑎᐅᑦᑐᓗᑐᖅ

Lead Agency
ᐃᖅᖃᓄᐃᓕᐅᓂᑦᓯᐃᑦ ᐊᐃᓯᒥᐅ ᖃᒪᓕᔪᖅᑐᑦᑎᓂᑦ-

Spill significance
ᐊᐃᓯᑦ ᖃᓄᐃᓕᓐᓂᓕᓐᓂᖓ-

Lead Agency contact and time
ᐃᖅᖃᓄᐃᓕᐅᓂᑦᓯᐃᑦ ᐊᐃᓯᒥᐅ ᖃᒪᓕᔪᖅᑐᑦᑎᓂᑦ
ᖃᐅᔨᓴᖅᑕᐅᓂᖓ ᑭᓕᓗ ᖃᓄᐃᓕᖓᑦᓯᓗᒍ

.....

.....

.....

Is this file now closed? ☐ yes/Δ
ᑖᓐᓇ ᐅᓂᒃᖃᓕᑦᑎᓂᖅ ᒪᑐᐅᑦᑕᐅᑦ? ☐ no/ᐊᖅ

Reported by ᐅᓂᒃᑳᖅᑐᖅ	Position, Employer, Location ᖃᓄᐃᓕᑐᒥᑦ ᐃᖅᖃᓄᐃᓕᓐᓂᑦ, ᐃᖅᖃᓄᐃᓕᖅᑎᑦᓴᓐᓇ, ᓇᒥ	Telephone ᐅᖃᓕᑦᑎ
Reported to ᑭᓄᖅᓂᑦ ᐅᓂᒃᑳᑕᐅᔨᖅ	Position, Employer, Location ᖃᓄᐃᓕᑐᒥᑦ ᐃᖅᖃᓄᐃᓕᓐᓂᑦ, ᐃᖅᖃᓄᐃᓕᖅᑎᑦᓴᓐᓇ, ᓇᒥ	Telephone ᐅᖃᓕᑦᑎ

APPENDIX 6

SPILL CONTINGENCY PLAN

KIKERK/KNIFE LAKE PROJECT

1.0 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.

3. 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 Advisers, as required.

5. Implement any necessary cleanup or remedial action.

1.1. BASIC STEPS - CHAIN OF COMMAND

1. Immediately notify the Project Geologist, Peter Holmes **(867) 776-7350** (office) or **(867) 920-7004** (home), or Assistant Geologist (office # above, or at field camp) of any spill. He/she then notifies the Response Co-ordinator (if a different individual).

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 1)* is filled out as completely as possible before or after contacting the 24-Hour Spill Line.

Other members of the Northern team are notified, such as the Lands Adviser (Shirley Standafer-Pfister) and Regional Manager (Todd McKinlay), both based in Yellowknife – **(867) 766-7350** (phone), **(867) 766-7351** (FAX). (Lands Adviser cell is **(867) 444-1239**; Regional Manager cell is **(867) 873-1594**).

If the spill is minor (such as dripping of fuel during transfer, which can be absorbed by padding, absorbent crystals, etc.), then the Lands Adviser in Yellowknife is notified by phone **(867) 766-7350**, FAX **(867) 766-7351**, cell **(867) 444-1239** or e-mail: (**shirley.standaferpfister@ca.debeersgroup.com**).

OTHER CONTACTS–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 cell-phone number)
G&G Expediting	Glen MacCara (cell)	(867) 873-1866
De Beers Expeditor	Bryon Jones (cell)	(867) 444-1173
Environment Canada		
	David Tilden, Yellowknife	(867) 669-4728
	Nunavut Office, Iqaluit (Nunavut FAX line)	(867) 975-4639 (867) 975-4645
Lands Administration, Indian and Northern Affairs Canada		
	Lands Administrator, Nunavut District	(867) 975-4275
		(867) 975-4286 (FAX)

Water Resources, Indian and Northern Affairs (867) 975-4550
(Iqaluit)
(FAX) (867) 975-4560

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

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

Yellowknife Fire Department	(867) 873-4506 (867) 873-9056 (FAX)
Kugluktuk Fire Department	(867) 982-4222

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

(867) 404-4407

Workers' Compensation Board-Exploration Site Accident Reports

(867) 873-4412

(867) 873-0123 (cell)

2. TAKING ACTION

2.1. 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., gen-sets).

6. Train personnel, especially those who will be operators, in proper fuel-handling and spill response procedures.

2.2 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 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 *1. d)*, report incident and steps taken to the Project Geologist, who in turn informs the Response Co-ordinator (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 *1.2* (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 each DBCE camp and at the Yellowknife office).

f) Notify permitting authorities and the Lands Adviser.

g) If possible, resume cleanup and containment.

2.3 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 two DBCE environmental advisers.

2.3.1 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.

5. Saturated sheeting is disposed of in an empty drum, which is then labelled and sealed. Alternatively, the pads 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.

2.3.2 Procedure for spills on land

1. 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.

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, and dispose of product by transporting to a solid 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 *1.2* 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 Co-ordinator or his designate implements the spill action plan.

2.4 FUEL SPILLS ON WATER

2.4.1 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:

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.

5. Once a boom has been secured, a skimmer may be brought on-scene 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. (Weather permitting, this unit can be flown to an emergency spill site within several hours.)

2.5 FUEL SPILLS ON SNOW AND ICE

2.5.1 Procedure for spills on snow and ice

By its nature, snow is an absorbent, and 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 Table 1)* and removed promptly once temporary use has ceased.

2.5.1.1 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 *1.2*.

2.5.1.2 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 to such spills. 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.

2. 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 *1.2*.

4. Where fuel or oil has escaped to the receiving waters, also contact the 24-hour emergency line of the Mobile Environmental Response Unit.

2.6 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.

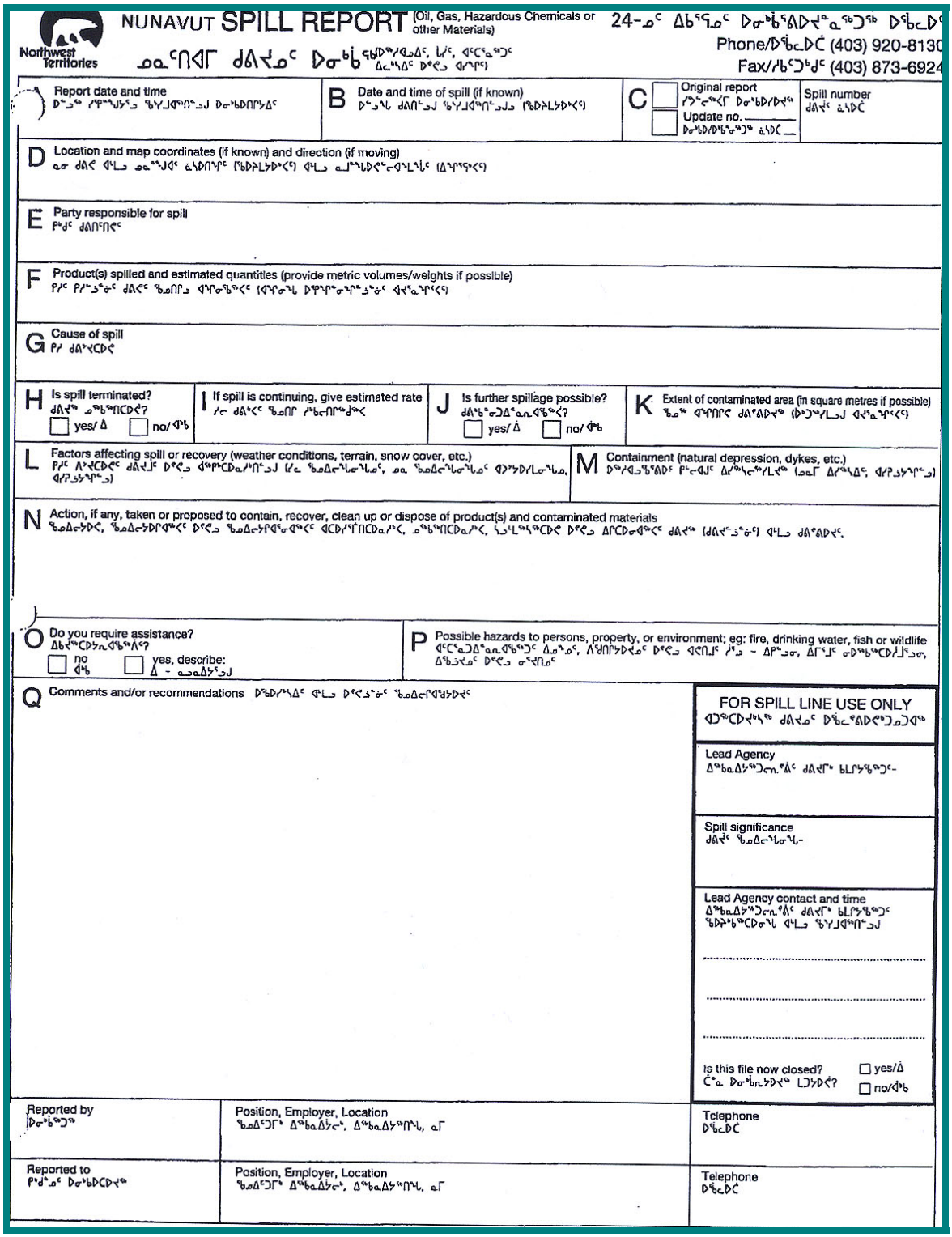
4. Place plastic sheeting over solid chemicals, such as dusts or powders, to prevent their disbursement by wind, or investigation by birds or other mammals.

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 *1.2*.

NUNAVUT SPILL REPORT FORM

Figure 1



NUNAVUT SPILL REPORT (Oil, Gas, Hazardous Chemicals or other Materials)

Northwest Territories

ᓄᓇᕗᑦ ᑯᐃᒋᓂᑦ ᐅᓂᒃᑳᖅᑎᑦᓴᓕᒃ

24-ᓂᑦ ᐃᑲᖏᓂᑦ ᐅᓂᒃᑲᖏᐃᐅᔪᓐᓇᖅᑐᖅ ᐅᖏᓕᐅ

Phone/ᐅᖏᓕᐅᑦ (403) 920-8130

Fax/ᓱᑲᑐᒃᑯᑦ (403) 873-6924

Report date and time ᐅᓪᓗᖅ ᓯᕗᓪᓚᕆᓪᓕᓴ ᖃᓄᐃᓕᖅᑎᑦᓴᐃᓗ ᐅᓂᒃᑲᐅᑎᕐᓂᐅᓴᑦ	B Date and time of spill (if known) ᐅᓪᓗᓐᓇ ᑯᐃᑎᓴᐃ ᖃᓄᐃᓕᖅᑎᑦᓴᐃᓗ (ᖃᐅᔨᓴᒪᕆᐅᔪᑦ)	C ☐ Original report ᓱᓕᓪᓕᖅᑕᑦ ᐅᓂᒃᑲᐅᓱᐅᔪᖅ ☐ Update no. ___ ᐅᓂᒃᑲᐅᓱᐅᖃᓕᓂᖅ ᓇᓗᑦᑕ___	Spill number ᑯᐃᔪᑦ ᓇᓗᑦᑕ

D Location and map coordinates (if known) and direction (if moving)
ᓇᓂ ᑯᐃᔪᑦ ᐊᓯᓗ ᓇᓇᓕᔪᑦ ᓇᓗᐅᑎᓕᑦ (ᖃᐅᔨᓴᒪᕆᐅᔪᑦ) ᐊᓯᓗ ᓇᒥᓇᑲᐅᑦᓭᐅᓴᒪᓕᑦ (ᐃᓕᓴᕐᔪᑦ)

E Party responsible for spill
ᑭᓄᑦ ᑯᐃᑎᑎᑦᑕᑦ

F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)
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G Cause of spill
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H Is spill terminated?
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☐ yes/ Δ ☐ no/ ᐊᖅ

I If spill is continuing, give estimated rate
ᓱᓕ ᑯᐃᓴᑦ ᖃᓄᐃᓕᖅᑎᑦᓴᐃᓗ

J Is further spillage possible?
ᑯᐃᓴᖅᓂᑐᐃᓪᓕᓇᖅᑐᖅᓴᐅᓴᑦ?
☐ yes/ Δ ☐ no/ ᐊᖅ

K Extent of contaminated area (in square metres if possible)
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L Factors affecting spill or recovery (weather conditions, terrain, snow cover, etc.)
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M Containment (natural depression, dykes, etc.)
ᐅᖏᓱᐊᓂᖅᑐᐃᐅᑦ ᑭᓚᐊᓕᑦ ᐃᓱᖏᓂᖏᓱᒪᔪᖏᖅ (ᓄᓇᒥ ᐃᓱᖏᓂᐃᓕᑦ, ᐊᓱᑭᓗᓴᓕᖅᑎᓪᓚᐃᓗ)

N Action, if any, taken or proposed to contain, recover, clean up or dispose of product(s) and contaminated materials
ᖃᓄᐃᓕᓴᐅᑕᐅᑦ, ᖃᓄᐃᓕᓴᐅᑎᑦᓴᓂᑦ ᐅᑭᓪ ᖃᓄᐃᓕᓴᑭᓐᓂᑦᓴᓂᑦ ᐊᑕᐅᓱᑎᑎᑕᐅᓇᓱᓂᑦ, ᓄᖅᑲᖓᑎᑕᐅᓇᓱᓂᑦ, ᓴᓪᒪᖏᓂᑕᐅᑦ ᐅᑭᓪ ᐃᑎᑕᐅᓂᐅᖏᓂᑦ ᑯᐃᔪᖅ (ᑯᐃᔪᓪᓚᐅᑦ) ᐊᓚᓪ ᑯᐃᓴᐃᓕᑦ.

O Do you require assistance?
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☐ no ᐊᖅ ☐ yes, describe: Δ - ᓇᓪᓇᐃᓴᑦᓴᐃ

P Possible hazards to persons, property, or environment; eg: fire, drinking water, fish or wildlife
ᐊᑦᑕᓪᓚᐃᓐᓇᓇᓇᖏᓐᓂᑦ ᐃᓗᓐᓄᓂᑦ, ᐱᖓᑎᑎᓂᐅᔪᓂᑦ ᐅᑭᓪ ᐊᑦᑎᒪᒥ ᓱᓄ - ᐃᑭᓪᓗᓂ, ᐃᒥᓪᔪᑦ ᓂᐅᖏᓂᑕᐅᓱᒧᑦᓴᓂ, ᐃᖃᓗᓴᐅᑦ ᐅᑭᓪ ᓂᓯᑎᓂᑦ

Q Comments and/or recommendations ᐅᖃᐅᓱᓂᐃᑦ ᑭᒪᓗ ᐅᑭᓴᓪᓂᑦ ᖃᓄᐃᓕᓴᑎᑕᐅᓴᐅᔪᑦ

FOR SPILL LINE USE ONLY
ᐊᑐᖏᑕᐅᓱᓂᖅ ᑯᐃᔪᓂᑦ ᐅᖃᓕᑭᐅᑭᖏᑐᓄᐃᓕᐊᖅ

Lead Agency
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Spill significance
ᑯᐃᔪᑦ ᖃᓄᐃᓕᓂᓚᓂᖅ-

Lead Agency contact and time
ᐃᖅᑲᓄᐃᓴᖅᑐᓂᓚᑭᑦ ᑯᐃᔪᒥᖅ ᑲᒪᒋᔭᖅᑐᑦ
ᖃᐅᔨᓂᖅᑐᑕᐅᓂᖅ ᑭᒪᓗ ᖃᓄᐃᓕᖅᑎᑦᓴᐃᓗ

Is this file now closed? ☐ yes/Δ
ᑖᓐᓇ ᐅᓂᒃᓄᓴᐅᔪᖅ ᒪᑐᐅᑦ? ☐ no/ᐊᖅ

Reported by ᐅᓂᒃᑲᖏᓐᓂᖅ	Position, Employer, Location ᖃᓄᐃᑦᑐᒥ ᐃᖅᑲᓄᐃᓴᖅᑐᓂᓕ, ᓇᒥ	Telephone ᐅᖏᓕᐅᑦ
Reported to ᑭᓯᓂᑦ ᐅᓂᒃᑲᑕᐅᔪᖅ	Position, Employer, Location ᖃᓄᐃᑦᑐᒥ ᐃᖅᑲᓄᐃᓴᖅᑐᓂᓕ, ᓇᒥ	Telephone ᐅᖏᓕᐅᑦ

TABLE 1

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 2

REQUIRED ICE THICKNESS FOR TYPICAL AIRCRAFT WEIGHS

Transport Canada Industrial Standard

Table 2 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 2

AK-68-14-001 Transport Canada Standard

Weight – lb/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 3

CONTENTS OF SPILL KITS –

KIKERK/KNIFE LAKE CAMP AND DRILLSITE

Camp Area – Spill-Kit Drum

(To be provided when camp is operational).

Drillsite – Spill-Kit Drum (moved from site to site by Contractor)

(To be provided when camp is operational).

RESPONSE INVENTORY – KIKERK/KNIFE LAKE CAMP

(To be provided when camp is operational).

- Fire extinguishers (valid and recharged) in each structure: Kitchen, Dry, Office, Core Shack, Generator Shed, Latrine, Sleep Tents

- Water pump

- Hand shovels

- Extra waterline (flexible poly)

- Assorted 10L plastic pails

- Ice auger (gas-powered) c/w extensions

- 127L plastic garbage bags (boxes of 20 each) – Dry, kitchen, gen-shed

- Extra tarps (for remediating any fuel-contaminated soil, fill or gravel)

- Extra bundles of absorbents

- Extra bag of hydrocarbon-retentive socks

APPENDIX 7

Procedures for Recording/Avoiding Suspected Archaeological Sites

Most of the heritage sites found in the region between Contwoyto Lake and Knife Lake are situated on level terraces, peninsulas, bedrock and gravel exposures adjacent to the shores of lakes and rivers, and on eskers, typically with a good view. The archaeological site locations in the exploration area and transportation corridors suggest that watching for and intercepting caribou, and fishing, were the main focuses of activity at these sites and in this area, most likely in the period from late summer to early winter, and in spring, with trapping of fur-bearers and travel between Contwoyto Lake and Coronation Gulf also becoming important in winter and spring during the post-contact period. Site location also suggests that habitation sites are likely to be found where portage routes begin or end, as well as where resources are concentrated, for example, where eskers are cut through by rivers and lake levels rising after deglaciation.

Some of the reported sites contain tent rings and other stone features and scatters of lithic material, including various types of quartz, quartzite, shale, rhyolite and chert in a wide range of colours. Where good organic preservation exists, some sites contain well-preserved materials, such as food bones, tools and utensils that contribute further to an understanding of subsistence activities, seasonality and technology at the time of occupation. Some sites contain single or multiple stacked boulders used to direct caribou in a certain direction, markers used for direction or notice of a specific area, and places where stone tools were made. Such sites may not be immediately recognisable to lay people. Burial sites, although none have been found to date, may be clearly capped with boulders or marked with a stone or other marker; others may not be as easily identified. **If any suspected sites are encountered during field activities, the following should occur. If time is short, minimum information should include site co-ordinates**.

- If possible, avoid any disturbance at the site; if disturbance is necessary, try to confine the activities to a part of the site where no bone, stone tools or boulder arrangements that may be archaeological in nature are situated, but avoid disturbance in the vicinity of a grave.
- Check for evidence of a tent ring, hearths or wood from tent structures; if present, sketch and avoid.
- Record the location by GPS, by elevation, with a dot and reference number on a map (and aerial photo if available), and with a sketch of site components. Describe the location, local environment (knoll, hilltop, esker, peninsula, bedrock, proximity to water, *etc*.). Photograph the suspected archaeological or other heritage material and provide a setting shot, which will help in relocation. Add your name and contact numbers to the report. If you have a copy of a site record form, feel free to fill out a form in as much detail as you like or have time for.
- Send a report on the site or sites to Shirley Standafer-Pfister at De Beers Canada, who will forward it to the firm's archaeologist for analysis.

At some point in the future, the archaeologist will visit the sites and verify the attributes as reported. Many thanks for your co-operation.

Shirley Standafer-Pfister
De Beers Canada
Yellowknife, NT
Tel: (867) 766-7350; 444-1239 (cell)
Fax: (867) 766-7351
E-mail: shirley.standaferpfister@ca.debeersgroup.com

Callum Thomson
Thomson Heritage Consultants
Calgary, AB
Tel: (403) 212-1360
Cell: (403) 617-5986

E-mail: thomsonheritage@canada.com

APPENDIX 8

ANIMAL SIGHTING REPORT FORM

Date of Sighting: _____ Weather: _____
Day/Month/Year

Time of Sighting: _____

Type of Animal: _____ _____ _____ (CHECK ONE)
Caribou Wolf Bear (Grizzly)

Other Animal: _____
(PLEASE WRITE COMMON NAME, e.g., Muskox, Wolverine, Arctic Fox, etc.)

Number of Animals: _____ Length of Time Observed: _____
(Minutes or Hours)

Your Distance from Animal: _____
(metres or approx. aircraft distance, if observance is made from an airplane or helicopter)

Your Activity at Time of Sighting: _____

What was Animal Doing at Time of Sighting? _____

Your Name: _____ _____
(PRINT) (SIGNATURE)

Company Name: _____

Other Comments about This Sighting:

_____

APPENDIX 9

GENERAL GUIDELINES: KIKERK/KNIFE LAKE PROPERTY
Abandonment and Restoration of Camp Facilities

INTRODUCTION

For this Abandonment and Restoration Plan, which is in respect of the proposed fly-in exploration camp, "Kikerk/Knife Lake camp", located 30 minutes by air from Kugluktuk and 150 minutes by air from Yellowknife, it is assumed that all serviceable equipment, temporary buildings (tents and sheds) and scrap material will be transported off-site preparatory to closure. Once removed from site, usable items may be flown to the company's warehouse in Yellowknife, recycled and flown to another project, sold or returned to the supplier (if applicable). Unusable inventory which cannot be burned on-site, such as non-hazardous waste and industrial waste or scrap, will report to the Yellowknife solid waste disposal facility, or to such other facility which accepts non-hazardous wastes and manifested waste materials under the NWT Transportation of Dangerous Goods regulations. If treatable hazardous waste should exist at the time of closure, such material will be transported to Newalta Recycling Facility in Redwater, AB, which is a licensed facility for such waste. In the remote possibility that non-treatable hazardous waste should exist at the time of closure, such material will be transported to Swan Hills Disposal Facility in Swan Hills, AB, or other suitable licensed facility for such waste.

Validity of Land-Use Authorisation

Final abandonment and restoration shall occur whilst valid land- and water-use authorisations still are in place, and in consultation and co-operation with the designated Indian and Northern Affairs (INAC) field inspector, Nunavut Water Board (NWB) staff and local communities, principally the closest community, Kugluktuk, 150km northwest. If an archaeology permit is in place, notification also shall be provided to the Chief Archaeologist – Government of Nunavut. If a then-existing land- or water-use authorisation is due to lapse during the closure process, an extension or renewal will be sought, as appropriate.

BUILDINGS AND CONTENTS

The Kikerk/Knife Lake camp is not yet built, but is expected to accommodate up to 25 persons, and will be comprised of sleep tents, a generator shed, core shack, latrine, office, kitchen and dry, all of which can be disassembled, as well

as a wooden dock (if used in summer), fuel drum storage area and active bear fence, if required. Sleep and work tents will be heated by oil stoves supplied with diesel fuel in 205L drums.

At closure, all structures deemed reusable would be dismantled and the components air-lifted by Twin Otter off-site. Alternatively, non-reusable structures would be dismantled and wooden components (e.g., tent bases,

steps, tables) burned on site on a gravel area, with all débris such as nails, bolts, screws and plastic, raked up, bagged and removed to the Yellowknife solid waste disposal facility. If a bear fence is operational at closure, the fence will be removed and sold or recycled to another camp.

Any absorbent padding used where fuel is transferred, such as at the generator shed and at camp structures, will be bagged and removed to the Yellowknife disposal facility after burning has ceased at camp. The area around each diesel drum will be inspected and the soil beneath will be sampled, if necessary, for potential hydrocarbon contamination. Any contaminated soil will be bagged and disposed of properly off-site, or aerated on tarps. Used drip pans or pails will be disposed of in the same manner.

INFRASTRUCTURE SUPPORT

Freshwater Supply and Greywater System

Potable water for domestic camp use will be obtained from the area of the Tree River beside the camp. All lines associated with the water intake will be drained, dismantled and removed off-site for recycling.

The greywater system will likely consist of insulated pipe and a greywater sump which receives water from the camp kitchen and dry (showers, sinks). The greywater lines will be drained, dismantled and removed off-site for disposal or recycling to another project. The sumps and immediate environs will be examined, any remaining débris removed, the sumps backfilled/levelled/restored to prior condition, combustibles burned or bagged and remaining bagged materials transported off-site for disposal.

It is anticipated that Pacto toilets (which require no water) will be used for this camp.

Refuse Disposal Facilities

All combustible wastes will be burned on site at a burn barrel sited at the corner of the camp, or in a fuel-fired incinerator, if such is present. Particular care will be taken to secure and then burn all food wastes, to limit animal attraction. Non-combustibles will be flown off-site for disposal, as noted elsewhere in this

Plan. These practices will remain in effect until the camp is closed. At the point where burning is no longer required, i.e., at the completion of cleanup, the burn barrel or incinerator itself will be removed off-site.

The wooden latrine will be dismantled and components burned. The Pacto toilets will be cleaned and recycled to another project. The ground in the vicinity of the shed will be levelled and raked, if necessary, so that the site is restored to prior condition.

Generator Shed Area

The shed will be inspected for any remaining hazardous materials (such as oil for generators, snowmachines, boat, etc.), cleaned and dismantled for salvage or disposal, and the ground inspected. At De Beers camps, used motor oil is normally collected in an empty drum and removed for recycling; this practice will continue until final closure. Used materials such as floor-dry (vermiculite), drip pans and padding will be properly disposed of off-site. Any oil- or fuel-contaminated soil will be removed for proper disposal, or more likely, aerated on tarps. If necessary, the ground in the vicinity of the shed will be sampled for contamination. The use areas will be raked clean and restored to prior condition.

Transportation Facilities

It is expected that transportation facilities at the camp will be minimal, consisting of a wooden dock at shoreline (if a dock is constructed) and 1-2 helicopter landing pads (either patches of gravel or plywood platforms). If a dock is present at closure, the dock will be taken apart and burned, unless a floating dock is used, in which case the dock would be recycled to another project. If a gravel pad is used rather than a plywood landing platform, the pad area will be checked and any contaminated soil will be bagged and disposed of properly off-site, or aerated on tarps. If necessary, ground in the vicinity of the pad will be sampled for hydrocarbon contamination. The use areas will be raked clean and restored to prior condition.

If a winter-access route is constructed on the Knife Lake peninsula away from camp in 2005 or thereafter, most of the routing would be over frozen waterways, where possible; however, land portages and shorelines will be checked following use and again in summer conditions prior to end of operations to remove any scrap materials which had been obliterated by winter

snows (e.g., bits of insulation, plastic, lath, rubber, etc.)

FUEL STORAGE AREAS

The camp fuel storage area will consist of segregated groups of drums, with empties separated from full drums of diesel and Jet-B. Waste fuel will be kept for burning garbage, or sent out as Class 9 waste on backhauls. Propane, as standard 45kg cylinders, will be stored beside the kitchen. Upon closure, a fuel inventory will be completed to assess the quantity and type of fuel remaining, and the storage areas inspected. Any contaminated soil will be bagged and removed for proper disposal in a landfill, or aerated on tarps. If necessary, the ground in the storage areas will be sampled for contamination. The use areas will be restored to prior condition. All remaining fuel will be flown out, except the minimal amount required during closure. Ultimately, all fuels and empty drums will be removed; usable fuel will be transported to another project, and empties returned to the respective fuel outlets.

CHEMICAL STORAGE

The chemicals to be used on site will be limited to household-strength cleaning supplies such as Javex, ammonia-based window/countertop sprays, wash soaps, degreasers and the like, and limited miscellaneous items such as antifreeze, insect repellent and aerosols. These will be stored in their original containers in their respective use areas, and removed off-site with routine garbage backhauls. When drilling is under way, the contractor responsible will store the required drilling muds, additives, oils and lubricants in a temporary shed at drillsite; these materials would not be present on site at closure. Upon closure of the camp, any unused inventory will be recycled to another project, returned to the supplier or properly disposed of in a landfill; partially-used containers will be removed for landfill disposal. As part of closure activities, areas in the immediate vicinity of chemical storage areas, such as the kitchen, dry and generator shed, will be inspected, any soil so requiring will be collected, bagged and removed off-site for disposal. If necessary, ground at chemical storage areas will be sampled for contamination.

MOBILE AND FIXED EQUIPMENT

All mobile and fixed equipment will be removed from the site prior to final closure. This inventory might include generators, pumps, boat, snow machines, power and hand tools, welder, and any drilling equipment or heavy machinery, should such be stored at the camp at the time of

camp closure. Any equipment required for abandonment and restoration, such as shovels, chainsaw, a generator for power tools, etc., will remain on site until all activities are completed.

WATER MANAGEMENT

Water-quality monitoring will occur as part of the abandonment and restoration activities and will be done in accordance with the NWB water licence then in effect. Grab samples will be collected from the camp water source (river) for analysis of standard parameters by an accredited laboratory (Enviro-Test Laboratories of Edmonton) to ensure minimal degradation from the demobilisation and abandonment of the campsite.

SHORT-TERM SHUTDOWN

Since activity on the Kikerk/Knife Lake claimblock remains at the exploration stage, there will continue to be periods of short-term shutdown, i.e., periods when the camp is inactive and no geophysical surveying, sediment sampling or drilling is occurring. In preparation for each such seasonal shutdown, the camp will be cleaned up and secured, an inventory taken, personal and unnecessary office items removed, and empty drums and garbage removed off site for proper disposal, thus ensuring public and wildlife safety. All fuel and water lines will be drained, and all fuel and power sources will be shut off and disconnected. However, the camp will be left in such a way that all equipment, buildings and utilities remain in serviceable and safe condition, such that startup can be effected safely and efficiently, and in consonance with the terms and intent of the governing authorisations.

If there is a bear fence in operation at closure, it will remain activated.

POST-CLOSURE INSPECTION AND/OR MONITORING

Final inspection, documentation and one or more site visits by community representatives, conducted by the permitholder in co-operation and consultation with NWB staff, the designated INAC field inspector and local land users will ensure successful closure of this exploration camp. One or more community visits (e.g., to Kugluktuk and Cambridge Bay) also may occur.

Some past abandonment incidents by others (non-De Beers) at campsites and fuel caches in the NWT and Nunavut have been unfortunate, and are not condoned by this permitholder or its agents.

If, in the judgement of Regulators, it is deemed that monitoring is required in regard to some component of the Kikerk/Knife Lake Camp or associated facilities, this will

be carried out by the permitholder in such form and manner, and for such duration, as is best able to ensure successful abandonment and restoration of the property and its future benefit to other land users.

-- Shirley Standafer-Pfister-YK-De Beers Canada
28 October 2003

APPENDIX 10A

Project ABC 50421

Summary report on archaeological surveys in the vicinity of a proposed exploration camp, Knife Lake/Tree River area, Nunavut

Prepared for De Beers Canada Exploration Inc., Yellowknife, attention Shirley Standafer-Pfister, by Callum Thomson, Thomson Heritage Consultants, Calgary.

On July 27, 2003, an archaeological survey was conducted under Nunavut Archaeologist Permit #03-01A in the vicinity of the Knife Lake mineral exploration area on the Tree River and a proposed exploration camp site. The survey covered 6 km on foot and examined a potential winter-access route from the exploration area at Knife Lake northward to the shore of the Tree River, westward along the shore of the Tree River to the originally-proposed exploration camp site, and then south to another section of the Tree River. Six new archaeological sites were found to add to one previously recorded. None of the sites will be affected by the proposed exploration or camp activities, and no additional sites are considered likely to be present in activity areas. The potential access route passes within 100 m of one site, but will not affect it due to the site's elevation on a knoll several metres above the surrounding flat terrain. Other potential access routes exist and could pass close to one or more other sites, but all sites found can be easily avoided. It is recommended, therefore, that construction of the proposed exploration camp, construction and use of an approximately 1.5 km long winter-access route, and exploration drilling be approved from a heritage resources viewpoint. A summary of the recorded sites and their co-ordinates, and the co-ordinates of the originally-proposed camp are provided below. Site co-ordinates will be provided to crews, and the site areas will be avoided.

Site 1 (2001), MgPd-1: cairn on top of hill northeast of Knife Lake, UTM co-ordinates E406500 N7434760. Not at risk from any related activities due to elevation.

Site 2: tent ring on bedrock knoll 100 m from shore in vicinity of potential access route, UTM co-ordinates: E406066 N7435615. Not at risk from construction and use of a potential future access route, due to elevation above surrounding terrain.

Site 3: hearth and possible tent ring on bedrock outcrop extending into water, and several quartz veins with no definitive evidence of having been exploited. UTM co-ordinates: E405641 N7435818. Not at risk from construction and use of a potential future access route, due to elevation above surrounding terrain, location on bedrock and availability of alternate routes.

Site 4: four tent rings on bedrock outcrop 100 m from shore, UTM co-ordinates E405556 N7435487. Not at risk from construction and use of a potential future access route, due to elevation above surrounding terrain.

Site 5: one standing stone slab and several collapsed slabs which may have served as markers, on bedrock knoll 300 m southeast of originally-proposed camp site. UTM co-ordinates: E404953 N7435585. Not at risk from construction and use of a potential future access route or camp construction due to elevation above surrounding terrain.

Site 6: tent ring on west side of bay running north from Tree River. UTM co-ordinates: E404128 N7434338. Not at risk from any construction activities due to location on west side of bay, 1.6 km southwest of originally-proposed camp site.

Site 7: inuksuk on high point overlooking Tree River. UTM co-ordinates: E404389 N7433512. Not at risk from any construction activities due to elevated location.

Originally-proposed camp location: E406500 N 7347600.

Potential winter-access route walked from E406300 N7434500 to E406200 N7436000.

(NOTE: A separate Archaeologist's Letter in respect of the location of the new proposed camp site at E404231 N7433446 is attached with the Permit Application as Appendix 10B).

APPENDIX 10B

Thomson Heritage Consultants
26 Hutton Place SW
Calgary, AB T2V 3B6

Our File THC2004-1

Shirley Standafer Pfister
De Beers Canada Exploration Inc.
601, 4920-52nd Street
Yellowknife, NT X1A 1R6

October 27, 2003

Dear Shirley:

Re. Preliminary Archaeological Assessment of Proposed Knife Lake Exploration Camp Location, and Mitigation Recommendations

As requested, the following is a preliminary archaeological assessment of the selected location for the proposed exploration camp in the vicinity of Knife Lake, Nunavut, and a reiteration of the standard mitigation procedures followed by DBCEI in such circumstances.

Proposed Camp Location

The proposed exploration camp will be situated in the vicinity of UTM coordinates N7433446 E404231 (Datum NAD 27, Zone 12) above the north shore of the Tree River, 78 km south of the mouth of the Kugaryuak River on Coronation Gulf, 20 km south of Kikerk Lake, and about 3 km west of the Knife Lake exploration area. The location, as interpreted from a review of 1: 50,000 topographic map data and previous field experience in the region, is most likely characterised by well-drained hummocky tundra sloping gently south towards the river, with occasional boulders and bedrock outcrops present. There is a drop of several metres from the camp terrace to the river, which flows eastward past the camp into a large, calm bay suitable for landing float planes.

Known Archaeological Sites

Two archaeological surveys have been undertaken over a period of less than two days within 5 km of the proposed camp location, focused on the exploration area around Knife Lake and the shore of the Tree River north of Knife Lake, where an alternate camp location had been planned earlier in 2003; surveys have not included the present proposed camp location or this part of the Tree River. One site is situated less than 200 m east of the proposed camp location and consists of an *inuksuk* on top of a high bedrock knoll (*see attached Figure 1*). There are six other known sites within 3 km, along the shore of the large expansion of Tree River north of the camp location and on a high bedrock ridge north of Knife Lake (*Figure 1*). These sites consist primarily of tent rings and stone markers. Co-ordinates for all seven sites are provided in *Table 1 (*Page 3*).*

Archaeological Potential at Proposed Camp Site

The proposed exploration camp location has moderate potential for the presence of archaeological sites, as would many similar locations adjacent to a major travel route like the Tree River. Specific attributes include:

- Location on a major river, known as an Inuit travel route;
- On a south-facing shore, exposed to maximum sunlight and with a good view of surrounding terrain and river crossings;
- Low elevation terrace, easily accessed from the river;
- Level terrain, probably well-drained, so suitable for a camp site;
- On a possible caribou migration route across a narrow part of the river, avoiding nearby rapids;
- Close to a source of fresh water;
- Between two sets of rapids, upriver and downriver; and
- In close proximity to a known site.

Potential Disturbance of Archaeological Resources, and Mitigation Measures

Construction and use of exploration camps and associated activities such as construction and use of winter-access routes, stockpiling and movement of drilling equipment and extraction of aggregate from eskers have some potential for disturbance of archaeological resources. DBCEI is well aware of this potential and has a sound environmental policy that minimises such risks. Mitigation measures that will be adopted at the proposed Knife Lake camp include:

- Use of fly-in access instead of winter-access route;
- Camp construction during winter when the ground is frozen and snow-covered, thus minimising the risk of disturbance of any archaeological sites and their contents;
- Avoidance of known archaeological sites; and
- Commitment to a post-construction archaeological effects monitoring programme in 2004 to evaluate the success of these measures.

Conclusion

It is my professional opinion that, although there is some potential for the presence of an archaeological site at the proposed camp location, the mitigative measures normally implemented by DBCEI and summarised above, which have invariably proven to be successful in our experience, will be sufficient to minimise or avoid any serious risk to the integrity of a site that may be present.

Callum Thomson, M.A.
Principal, Thomson Heritage Consultants

Table 1. Known Archaeological Sites Near Knife Lake (NAD 27, Zone 12)			
Site No.	**Northing**	**Easting**	**Site Type**
Knife 1 (MgPd-1)	7434760	406500	Stone marker
Knife 2	7435615	406066	Camp
Knife 3	7435818	405641	Camp; possible quartz quarry
Knife 4	7435487	405556	Camp
Knife 5	7435585	404953	Stone markers
Knife 6	7434338	404128	Camp
Knife 7	7433512	404389	Stone marker