



PEREGRINE  
DIAMONDS LTD.

**BY COURIER**

August 20, 2012

Ms. Tracey McCaie, Acting Manager Land Administration  
Aboriginal Affairs and Northern Development Canada  
P.O. Box 100  
Iqaluit, Nunavut X0A0H0

Dear Ms. McCaie:

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**RE: CLASS "A" LAND USE PERMIT APPLICATION**

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Peregrine Diamonds Ltd. ("Peregrine") has recently taken over operatorship of the Nanuq North Property from our Joint Venture Partners Bluestone Resources Ltd. (formerly Indicator Minerals Inc.). Claim transfer forms were submitted to the Iqaluit Mining Recorder's Office in June 2012 and are still pending approval.

Two land/water use authorizations applied to this property; Nunavut Water Board Licence ("NWB") 2BE-NQN0914 and AANDC Permit N2009C005. NWB licence 2BE-NQN0914 (expiry 2014) is in the process of being assigned to Peregrine while AANDC Permit N2009C005 accidentally expired in May 2012 prior to an extension request being filed with your office. The Nunavut Impact Review Board File for the two pre-existing authorizations is 09EN011.

The attached "new" land use application is being submitted to replace N2009C005. All activities described within the new application are the same as the previous application.

Enclosed you will find the following:

- 1) Class "A" Land Use Application
- 2) A cheque in the Amount of \$200.00 to cover the applicable fees

If you have any questions on the matter please do not hesitate to contact me by telephone at (604) 608-4524 or by email at [dave@pdiam.com](mailto:dave@pdiam.com).

Yours truly,

**PEREGRINE DIAMONDS LTD.**

David Willis

PAY TO:  
Receiver General for Canada

PEREGRINE DIAMONDS LTD.

Page 1

VENDOR NO.	CHEQUE DATE	CHEQUE NO	CHEQUE TOTAL
CCRG01	06-20-2012	005551	\$200.00

INVOICE NUMBER	DATE	GROSS AMOUNT	DISCOUNT	NET AMOUNT
June2012NanuqNo INACPermitApp	06/20/2012	200.00	0.00	200.00

Please detach before presenting for payment

PEREGRINE DIAMONDS LTD.

201 - 1250 Homer Street  
Vancouver, BC V6B 1C6  
Tel: (604) 408-8880 Fax: (604) 408-8881

BMO BANK OF MONTREAL  
Vancouver Main Office Tel: (604) 665 - 2643  
First Bank Tower, 595 Burrard St.  
Vancouver, B.C. V7X 1L7

CHEQUE NO.

005551

DATE 06202012  
M M D D Y Y Y Y

PAY Two Hundred Dollars And 00 Cents

\$ \*\*\*200.00\*

TO  
THE  
ORDER  
OF

Receiver General for Canada

PEREGRINE DIAMONDS LTD. CDN FUNDS

PER 

PER 

005551 0004000011

15140080911



## APPLICATION FOR LAND USE PERMIT

### Privacy Act Statement

The information you provide in this document is collected under the authority of the *Territorial Land Use Regulations* for the purpose of responding to your application for land use permit. Information on individuals is used by Indian and Northern Affairs Canada Land Administration employees who need to know the information in order to respond to your request and/or the program requirements. We share the information you give us with First Nations, Aboriginal groups and Inuit, Territorial and Federal Government Expert Agencies and Public Government Institutions. The personal information will be retained 6 years after the last administrative use and then destroyed. Individuals have the right to the protection of and access to their personal information under the *Privacy Act* <http://lois.justice.gc.ca/en/P-21/index.html>.

### For Office Use Only

Application Fee	Land Use Fee	General Receipt No.	Date	Class	Permit Number
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To be completed by all applicants ► ☒ New Application ☐ Amendment

1. Applicant's Name and Mailing Address (Full name, no initials) Peregrine Diamonds Ltd. Unit 201, 1250 Homer Street Vancouver, British Columbia V6B 1C6				Facsimile Number 604 408-8880
				Telephone Number 604 408-8881
2. Head Office Address Same as above				Facsimile Number 604 408-8880
				Telephone Number 604 408-8881
Field Supervisor Duncan McBean	Radio Telephone	E-Mail Address duncan@pdiam.com		Telephone Number 604 408-8881

3. Other Personnel (Subcontractor, Contractors, Company Staff, etc.)
- 1) Great Slave Helicopters - Pilot and Engineer
  - 2) Boart Longyear Drilling - Drillers x2, Drill Helpers x2, Drill Foreman x 1
  - 3) Ken Borek Air - Pilot and Co-pilot

10 to 15

Total ►

### 4. Qualifications

Refer to Section 21 of the *Territorial Land Use Regulations*

Number(s) exploration permit mineral claims (If applicable)

a(i) ☒ a(ii) ☒ a(iii) ☐ b ☐ c ☐

PLEASE SEE ATTACHED SCHEDULE "A"

### 5. a) Summary of Operation (Describe purpose, nature and location of all activities.)

Refer to Section 22(2)(b) of the *Territorial Land Use Regulations* (Use last page of form if necessary.)

Peregrine Diamonds Ltd. is a mineral Exploration Company searching for economic deposits of diamonds or precious minerals. A small field exploration camp is required to support field personnel while they conduct their work which will primarily consist of prospecting, mapping, soil/till/rock sampling, geophysics and occasionally drilling.

Drilling will be done when suitable geological targets that warrant drill testing are discovered.

### b) Please indicate if a camp is to be set up (Use last page to provide details.)

Yes, one camp at latitude 65 degrees, 23 minutes, 43.5 seconds and longitude -91 degrees, 12 minutes, 54.8 seconds. Please see attached map.

### 6. Summary of potential environmental and resource impacts

(Describe the effects of the proposed program on land, water, flora and fauna and related socio-economic areas.)  
(Use separate pages if necessary.)

This permit application is for a small exploration program that includes a fly-in/fly-out camp and exploration ("target") drilling. The effects of which will be negligible on land, water, flora, fauna, air and socio-economic areas. Peregrine's goal is to minimize any potential impacts by avoiding wildlife, maintaining clean work sites, avoiding archaeological sites, and preventing discharge of any kind. All wildlife sightings or suspected archaeological sites will be documented and submitted to the applicable government offices. There will be some opportunity to hire local residents on a seasonal basis and support services will be used from local communities. The long term goal of this project is to discover an economic mineral deposit that would, among other things, provide the local economy with sustainable employment.

## 7. Proposed Restoration Plans (Please use last page if required.)

Progressive reclamation work will be on-going. Work sites will be clean and organized, empty fuel drums and waste materials will be flown out on a regular basis. All combustible waste will be incinerated. Staff will conduct regular inspections of all occupied or disturbed sites. Seasonal shutdown will involve putting the camp to rest until the subsequent field season. Will involve the removal of all materials from the site. Additional details are provided in Section 21 of this application.

Please see attached Abandonment and Restoration Plan.

## 8. Other rights, licences or permits related to this permit application (Mineral claims, Yukon timber permits, water licences, etc.) (Please use last page if required.)

- 1) NIRB File: 09EN011 applies to this file
- 2) AANDC Permit N2009C005 is the previous permit that recently expired
- 3) NWB File 2BE-NQN0914 is the water use authorization that corresponds to this application.

Roads ☒ Is this to be a pioneered road? ☐ Has the route been laid out or ground truthed?

## 9. Proposed Disposal Methods (Please use last page if required.)

- |   |  |
|---|--|
| a) Garbage<br>Combustible - incinerated & Non-combustible - flown out | b) Sewage (Sanitary and Grey Water)<br>Sewage - flown out & Grey Water - contained in small sump |
| c) Brush and Trees<br>Not Applicable                                  | d) Overburden (Organic soils, waste material, etc.)<br>Not Applicable, mostly rock               |

## 10. Equipment (Includes drills, pumps, etc.) (Please use last page if required.)

Type and Number	Size	Proposed Use
Helicopter	A-Star BA	Transportation
Drill	LM-55	Drilling
Generator	20KW Wacker	Camp Power
Water Pump	15 HP Subaru	Camp Water
Fixed Wing Aircraft	Twin Otter	Transportation

## 11. Fuels

	Number of Containers	Capacity of Containers
<input checked="" type="checkbox"/> Diesel	50	205 litres per drum
<input checked="" type="checkbox"/> Gasoline	5	205 litres per drum
<input checked="" type="checkbox"/> Aviation Fuel	50	205 litres per drum
<input checked="" type="checkbox"/> Propane	25	100 pounds per tank
<input checked="" type="checkbox"/> Other: Acetylene & Oxygen	4 cylinders each	100 pound per tank

## 12. Containment Fuel Spill Contingency Plans (Please attach separate contingency plan if necessary.)

Please see attached spill contingency plan.

## 13. Methods of Fuel Transfer (To other tanks, vehicles, etc.)

Refuelling will be done using a small stand pipe and/or an electric pump.

14. Period of Operation (Includes time to cover all phases of project work applied for, including restoration.)  
This project will operate for approximately 8 weeks between May and September. Ther permit Application is for 2 years.

15. Period of Permit (Up to two years, with maximum of one year extension.) 2 years	Start Date 2012-10-01	Completion Date 2014-10-01
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16. Location of activities by map co-ordinates (Attach maps and sketches.)

Minimum Latitude	Degrees	Minutes	Seconds	Minimum Longitude	Degrees	Minutes	Seconds
▶ 65		30	00	▶ -90		32	00
Maximum Latitude	Degrees	Minutes	Seconds	Maximum Longitude	Degrees	Minutes	Seconds
▶ 65		42	00	▶ -91		15	00

Map Sheet Number  
1:250,000 NTS 56G, 1:50,000 NTS 56G06, 56G07, 56G10, 56G11

17. Applicant (Print Full Name) <i>David Wilson</i>	Signature <i>[Signature]</i>	Date <i>2012-08-20</i>
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18. Fees

<input checked="" type="radio"/> Class A - \$150.00 <input type="radio"/> Class B - \$150.00    ▶	\$150.00
<b>Land Use Fees:</b> Less than or equal to 2 hectares    ▶    \$50.00	\$ 50.00
For each additional hectare over 2 hectares or portion of a hectare    ▶    X \$50.00 =	
<b>Total application and land use fees</b> ▶	<i>\$ 200.00</i>

#### For Office Use Only

19. Calculation of area involved (Includes access, staging areas, airstrips, campsites, etc.)

Total Area (Ha)	Less than or equal to 2 hectares	Total (For Fee Calculation)
-----------------	----------------------------------	-----------------------------

20. Application Checklist

- |  |   |
|--|---|
| <input type="checkbox"/> a) Application Signed and Dated | <input type="checkbox"/> e) Screening Report                  |
| <input type="checkbox"/> b) Fees Attached                | <input type="checkbox"/> f) Timber Permit Applied for - Yukon |
| <input type="checkbox"/> c) Map Included                 | <input type="checkbox"/> g) Fees Attached                     |
| <input type="checkbox"/> d) Address and Telephone Number | <input type="checkbox"/> h) Lease Applied for                 |

Remarks (Please use last page if additional space is required.)

Accepted by

Date

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21. Additional Information (Attach additional pages if necessary.)

## Background

This permit application is being submitted to replace N2009C0005 which was held by Indicator Minerals Inc. (now Bluestone Resources Ltd.) and expired in May 2012. This permit was to have been transferred to joint venture partner Peregrine Diamonds Ltd. ("Peregrine") however the applicable renewal paperwork was overlooked when transfer of operatorship occurred. The corresponding NWB permits (2BE-NQN0914) is in the process of being assigned to Peregrine. Both Permits (N2009C0005 and 2BE-NQN0914) were issued under Nunavut Impact Review Board File 09EN011.

The Nanuq North Project consists of 51 claims with an aggregate area of 33,056.75 claims. The majority of these claims expire in 2018. Peregrine Diamonds Ltd. is an exploration company focused on exploring for diamonds and precious minerals. The work undertaken on the Nanuq North claims will consist primarily of basic exploration activities like mapping, prospecting, soil/till/rock sampling, and ground geophysics. Should suitable anomalies be discovered a drill will be necessary to test the target.

This permit application is for two items, drilling and a campsite. The details of which are outlined below.

## Campsite

A temporary camp is required to support geological operations. It is a small fly-in/fly-out camp that will be supported by fixed wing (Twin-Otter) aircraft. The camp will consist of 6 canvas prospector's tents on wood frames and two small wooden buildings to use as generator shed and "pacto" outhouse respectively. Heat to the tents will be provided by diesel drip stoves and electricity by a 20kw generator. Two "areas" away from the tents will be used for a garbage incineration area and a helicopter landing fuel storage area.

The camp is setup on the shores of an unnamed lake which will be used to supply domestic water. Domestic grey water from the showers and kitchen will be contained in a small sump located 31 meters from the ordinary high water mark of the lake shore. The sump will be covered annually with plywood and stakes so it can be identified and reused.

Sewage will be contained in "pacto" bags and flown out of the site. All combustible waste will be incinerated and non-combustible waste will be flown out of the site.

Fuel drums and propane canisters will be securely stored on their sides. Empty drums will be flown out on a regular basis. An inventory and inspection of fuel drums will be done daily while the camp is in operation.

Seasonal shutdown of the camp will see all materials with the exception of wooden structures (wood frames, outhouse furniture etc.) removed for maintenance and storage. Project planning will try to ensure that a minimum number of drums are stored over the winter. Upon complete shutdown of the campsite all materials will be removed from the site and the grey water sump filled in.

Total Estimated area required for the camp is under 1 hectare.

## Drill sites

On occasion it will be necessary to drill geological anomalies that are found on the property. For this purpose two types of drill may be required. A reverse circulation ("RC") drill or a core drill (aka. Diamonds drill). Both drill types are heli-portable and made up of component parts (motor, timbers, drill mast, rods etc.). Drills will be unloaded from a fixed wing aircraft and then slung to the drill sites where they will be assembled in functional form. Only the core drill uses water the RC drill uses compressed air. For core drilling drill water will be recirculated where possible and contained in a natural depression away from any water bodies or water courses. At the completion of operations the drill will be removed from site and brought back to camp for storage.

Progressive reclamation is planned at each drill site and, as much as possible, sites will be restored immediately after the drill has been moved. All sites will be inspected for waste and contamination. All drill waste will be taken to camp to be burned or flown out to an approved disposal location.

Each drill site is anticipated to be contained in a 30 meter by 30 meter (0.9 hectare) drill site. Typically multiple holes will be drilled at a single site.

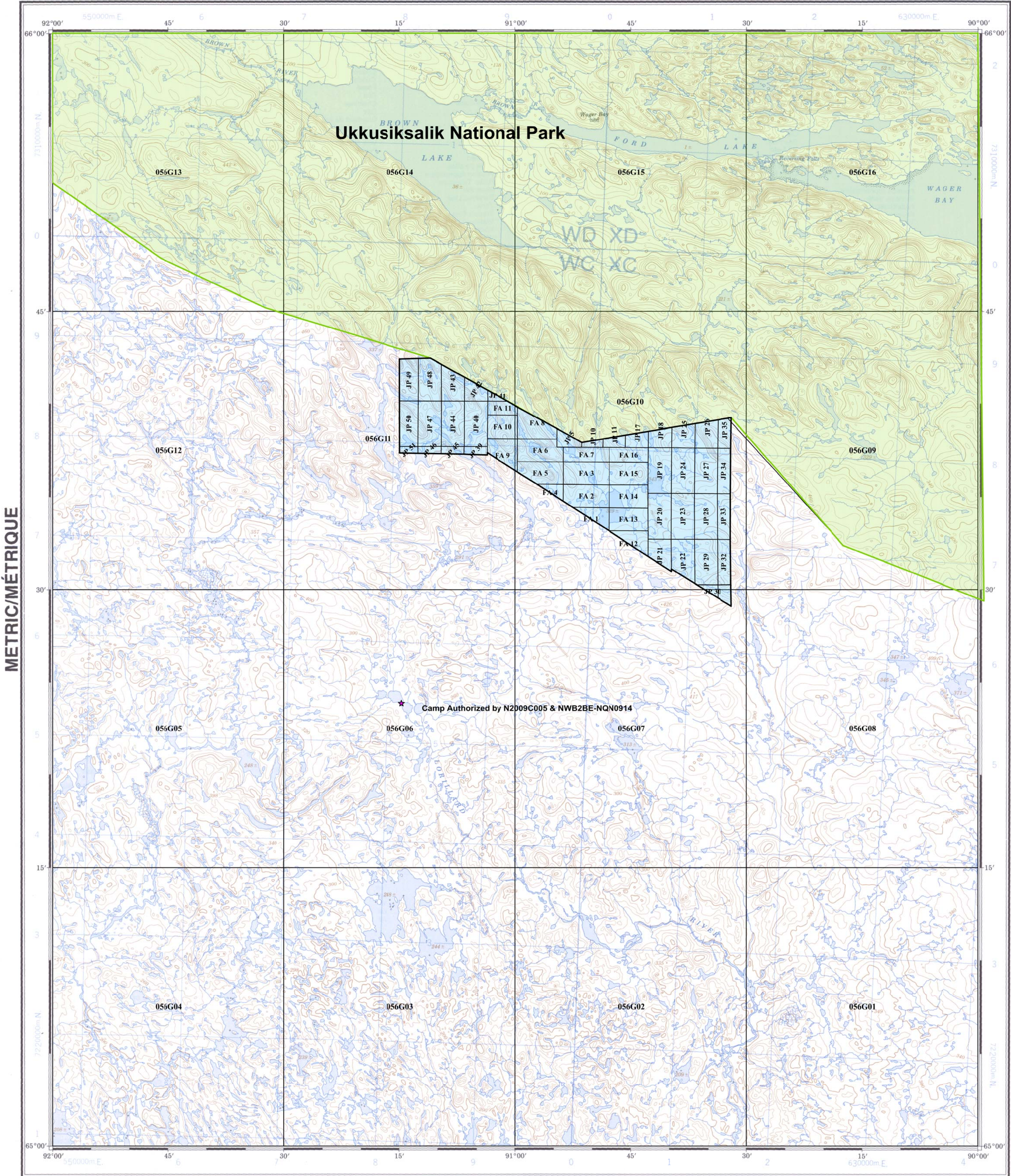
**Schedule "A" - Nanuq North Claims**

<b>Fid.</b>	<b>Claim Name</b>	<b>Claim Number</b>	<b>Claim Status</b>	<b>Recording Date</b>	<b>Aniversary Date</b>	<b>Claim Acres</b>	<b>Core or Periphery</b>
1	FA001	F90022	Active	08-Oct-04	08-Oct-12	1,059.00	Core
2	FA002	F90023	Active	08-Oct-04	08-Oct-12	2,492.00	Core
3	FA003	F90024	Active	08-Oct-04	08-Oct-19	2,582.50	Core
4	FA004	F90025	Active	08-Oct-04	08-Oct-12	516.50	Core
5	FA005	F90026	Active	08-Oct-04	08-Oct-19	2,273.00	Core
6	FA006	F90027	Active	08-Oct-04	08-Oct-13	2,399.90	Core
7	FA007	F90028	Active	08-Oct-04	08-Oct-12	1,607.70	Core
8	FA008	F90029	Active	08-Oct-04	08-Oct-13	1,997.10	Core
9	FA009	F90030	Active	08-Oct-04	08-Oct-19	1,870.90	Core
10	FA010	F90091	Active	08-Oct-04	08-Oct-19	1,698.80	Core
11	FA011	F90092	Active	08-Oct-04	08-Oct-14	1,124.90	Core
12	FA012	F90093	Active	08-Oct-04	08-Oct-13	1,107.90	Core
13	FA013	F90094	Active	08-Oct-04	08-Oct-13	2,174.50	Core
14	FA014	F90095	Active	08-Oct-04	08-Oct-14	2,186.60	Core
15	FA015	F90096	Active	08-Oct-04	08-Oct-12	2,186.60	Core
16	FA016	F90097	Active	08-Oct-04	08-Oct-19	1,399.40	Core
17	JP005	F88445	Active	04-Nov-04	04-Nov-13	710.18	Periphery
18	JP010	F88450	Active	04-Nov-04	04-Nov-13	355.73	Periphery
19	JP011	F88451	Active	04-Nov-04	04-Nov-13	606.88	Periphery
20	JP017	F88457	Active	04-Nov-04	04-Nov-13	839.31	Periphery
21	JP018	F88458	Active	04-Nov-04	04-Nov-19	1,045.91	Periphery
22	JP019	F88459	Active	04-Nov-04	04-Nov-12	2,582.50	Periphery
23	JP020	F88460	Active	04-Nov-04	04-Nov-13	2,582.50	Periphery
24	JP021	F88406	Active	04-Nov-04	04-Nov-13	1,265.42	Periphery
25	JP022	F88407	Active	04-Nov-04	04-Nov-14	2,066.00	Periphery
26	JP023	F88463	Active	04-Nov-04	04-Nov-13	2,582.50	Periphery
27	JP024	F88464	Active	04-Nov-04	04-Nov-12	2,582.50	Periphery
28	JP025	F88465	Active	04-Nov-04	04-Nov-12	1,278.34	Periphery
29	JP026	F88466	Active	04-Nov-04	04-Nov-12	1,497.85	Periphery
30	JP027	F88467	Active	04-Nov-04	04-Nov-11	2,582.50	Periphery
31	JP028	F88468	Active	04-Nov-04	04-Nov-12	2,582.50	Periphery
32	JP029	F88469	Active	04-Nov-04	04-Nov-14	2,572.50	Periphery
33	JP030	F88408	Active	04-Nov-04	04-Nov-14	344.76	Periphery
34	JP031	F88409	Active	04-Nov-04	04-Nov-14	604.31	Periphery
35	JP032	F88472	Active	04-Nov-04	04-Nov-12	1,549.50	Periphery
36	JP033	F88473	Active	04-Nov-04	04-Nov-12	1,549.50	Periphery

**Schedule "A" - Nanuq North Claims**

<b>Fid.</b>	<b>Claim Name</b>	<b>Claim Number</b>	<b>Claim Status</b>	<b>Recording Date</b>	<b>Aniversary Date</b>	<b>Claim Acres</b>	<b>Core or Periphery</b>
37	JP034	F88474	Active	04-Nov-04	04-Nov-12	1,549.50	Periphery
38	JP035	F88475	Active	04-Nov-04	04-Nov-12	1,007.17	Periphery
39	JP039	F88496	Active	04-Nov-04	04-Nov-19	428.69	Periphery
40	JP040	F88480	Active	04-Nov-04	04-Nov-19	2,582.50	Periphery
41	JP041	F88481	Active	04-Nov-04	04-Nov-19	284.07	Periphery
42	JP042	F88482	Active	04-Nov-04	04-Nov-19	1,149.21	Periphery
43	JP043	F88483	Active	04-Nov-04	04-Nov-17	1,725.11	Periphery
44	JP044	F88484	Active	04-Nov-04	04-Nov-12	2,582.50	Periphery
45	JP045	F88495	Active	04-Nov-04	04-Nov-19	400.29	Periphery
46	JP046	F88494	Active	04-Nov-04	04-Nov-17	387.38	Periphery
47	JP047	F88487	Active	04-Nov-04	04-Nov-12	2,582.50	Periphery
48	JP048	F88488	Active	04-Nov-04	04-Nov-12	2,281.32	Periphery
49	JP049	F88489	Active	04-Nov-04	04-Nov-11	1,911.05	Periphery
50	JP050	F88490	Active	04-Nov-04	04-Nov-11	2,066.00	Periphery
51	JP051	F88493	Active	04-Nov-04	04-Nov-17	289.24	Periphery



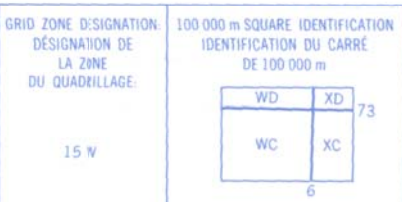


Military users, refer to this map as: SÉRIE A 501 SÉRIE MAP 56 G CARTE Référence de cette carte: ÉDITION 3 MCE ÉDITION pour usage militaire:

METRIC/MÉTRIQUE

METRIC/MÉTRIQUE

TEN THOUSAND METRE  
UNIVERSAL TRANSVERSE MERCATOR GRID  
ZONE 15  
QUADRILAGE UNIVERSEL TRANSVERSE DE MERCATOR  
DE DIX MILLE MÈTRES



EXAMPLE OF METHOD USED  
TO GIVE A REFERENCE TO NEAREST 1000 METRES  
EXEMPLE DE LA MÉTHODE EMPLOYÉE  
POUR FIXER DES REPÈRES À 1000 MÈTRES PRÈS



REFERENCE POINT  
POINT DE REPÈRE

CHURCH - ÉGLISE

SQUARE: Read letters of 100 000m square  
CARRÉ: Lire les lettres du carré de 100 000m

EASTING: Read number on grid line immediately to left of point  
ABSCISSE: Lire le chiffre de la ligne du quadrillage immédiatement à gauche du repère

Estimate number of a square from this line eastward to point  
Estimer le nombre de divisions du carré entre cette ligne et le repère en direction est

NORTHING: Read number on grid line immediately below point  
ORDONNÉE: Lire le chiffre de la ligne du quadrillage immédiatement en dessous du repère

Estimate number of a square from this line northward to point  
Estimer le nombre de divisions du carré entre cette ligne et le repère en direction nord

GRID REFERENCE  
RÉFÉRENCI AU QUADRILAGE

NU4504

If reporting beyond 18° in any direction, prefix Grid Zone designator as 14VNU4504  
Si vous faites connaître votre position à quelque un qui se trouve à plus de 18° par rapport à la direction, indiquez également la zone du quadrillage tel que 14VNU4504

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DEPARTMENT OF ENERGY, MINES AND RESOURCES  
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Information concerning bench marks and horizontal survey  
measurements can be obtained from Geodetic Survey, Canada  
Centre for Surveying, Ottawa.

Pour tout renseignement concernant les repères de nivellement  
et les bornes photogrammétriques, s'adresser à la Division  
des bornes géodésiques, Centre canadien des bornes, Ottawa.

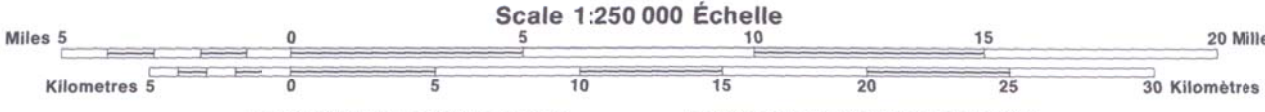
ÉTABLI PAR LE CENTRE CANADIEN DE CARTOGRAPHIE,  
MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RESSOURCES  
TRIPLE DE CARTES À 1:50 000, RENSEIGNEMENTS À JOUR TELS  
QU'INDIQUÉS DANS LE DIAGRAMME, PUBLIÉE EN 1993.

DES CARTES SONT EN VENTE AU BUREAU DES CARTES DU  
CANADA, MINISTÈRE DE L'ÉNERGIE, DES MINES ET DES RES-  
SOURCES, OTTAWA, OU CHEZ LE VENDEUR LE PLUS PRÈS.

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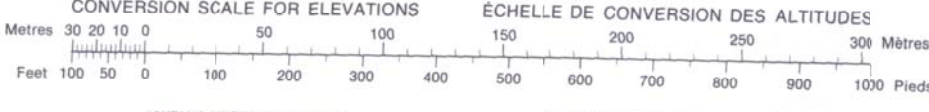
## WAGER BAY

DISTRICT OF KEEWATIN DISTRICT DE KEEWATIN  
NORTHWEST TERRITORIES TERRITOIRES DU NORD-OUEST



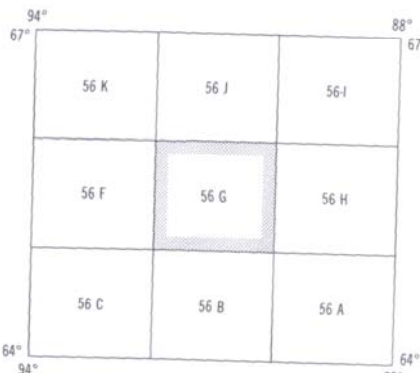
THE MAGNETIC COMPASS MAY BE ERRATIC IN THIS AREA.  
Magnetic declination 1992 varies from 12°50' westerly at centre  
of west edge to 18°10' westerly at centre of east edge. Mean  
annual change increasing 4.0' west edge, decreasing 0.5  
east edge.

LA BOUSSOLE SERA PEUT-ÊTRE INSTABLE DANS CETTE RÉGION.  
En 1992, la déclinaison magnétique varie de 12°50' vers l'ouest au  
centre du bord ouest à 18°10' vers l'ouest au centre du bord est.  
La variation annuelle moyenne s'accroît de 4,0° au bord ouest et  
diminue de 0,5° au bord est.



CONTOUR INTERVAL 20 METRES  
Elevations in Metres above Mean Sea Level  
North American Datum 1983  
Transverse Mercator Projection

ÉQUIDISTANCE DES COURBES 20 MÈTRES  
Altitudes en mètres  
Système de référence nord-américain, 1983  
Projection transverse de Mercator





**Nanuq North Project**  
**Abandonment and Restoration Program**  
**August 2012**

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**CAMP - SEASONAL SHUTDOWN**

**Buildings and Contents**

Buildings and Contents will be dismantled and the canvas tents will be removed from site for dryings and storage. Wood structures (generator and pacto toilet Shacks) and wood floors will be kept secured. Wooden bed frames will be turned upside sown and secured to the wooded floors for over winter storage. The generator will be removed form site for servicing and storage

**Water System**

Pumps and Hoses will be drained and dismantled. Pumps and Hoses will be removed from the site for servicing and storage.

**Fuel Storage**

All fuel caches will be removed and drums will be located at the camp. An inventory and inspection of all fuel drums will be completed and empty fuel drums will be removed form site. Partially full fuel drums will be kept to a minimum and placed on an angle to ensure that snow and water do not enter the drum and no leakage from the drum occurs. Fuel drums will be stored on their sides.

**Domestic Chemicals**

No domestic chemicals (cleaners etc.) will be stored on site over winter. AL chemicals including cleaning products will be removed form site for storage andor disposal.

**Waste**

All combustible waste will be incinerated. Non-combustible was will be packaged and flown out to an appropriate disposal facility.

Domestic Grey Water sump will be inspected and covered securely for the winter. Stakes wil be placed around the sump so that it is easily identifiable when the camp is opened up again each year

Sewage will be contained in Pacto toilets. Bags containing waste will be removed from site.

### **CAMP – FINAL ABANDONMENT AND RESTORATION**

#### **Buildings and Contents**

All buildings will be dismantled and removed. All wooden structures, including floors, will either be burned or removed.

#### **Equipment**

All equipment, including pumps, will be dismantled and removed from the project area.

#### **Fuel Caches and Chemical Storage**

All fuel drums will be removed. All areas where there have been fuel caches will be thoroughly inspected. Any contamination will be cleaned up as well as any debris removed. If there are instances of contaminated soil it will be handled as per the Spill Contingency Plan.

#### **Sumps**

The grey water sump will be inspected to ensure there is no leaching or run-off. It will be back-filled and leveled as required.

### **DRILLS SITES – SEASONAL AND FINAL**

The drill site will be dismantled into its main components as per the drill contractor's procedures, packaged and secured along with equipment and rods. The drill will be flown out by the drilling contractor or as the contract describes.

All drill sites will be inspected for soil contamination. Any remaining waste will be taken to camp to be burned if possible or to be flown out to an approved disposal location. Natural depressions used as sumps will be inspected.

Drill sites will be subject to progressive reclamation. As much as possible drill sites will be restored immediately after the drill has been moved to the next site.

### **CONTAMINATION CLEAN-UP**

No contamination is anticipated however should this occur any contamination will be treated as per the Nanuq North Spill Contingency Plan.



**Spill Contingency Plan  
Nanuq North Project**

**Kivalliq Region, Nunavut  
Peregrine Diamonds Ltd.**

**20 August-2012**

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I

## INTRODUCTION

The Nanuq North Project Spill Contingency Plan of Peregrine Diamonds Ltd. (PDL), which is found on the following pages, shall be in effect from the current date (August 20, 2012) to September 1, 2013 and is subject to revision as required. The Nanuq North Project is scheduled to occur between May and September annually and is to be comprised of prospecting, mapping, soil sampling, rock sampling, ground geophysical surveying, a core drill programme.

The Nanuq North Claim Block is located on 1:50,000 NTS Maps, 56G10, 56G11 and a small portion on 56G10. The camp location is on a lake

All employees, whether permanent or casual, and programme contractors, are required to be trained in Peregrine procedures, field safety, wildlife safety, spill and fire procedures and environmental awareness prior to engaging in work at a Peregrine site. Peregrine 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 contractors.

## BASIC STEPS – SPILL PROCEDURE

***A spill is classified as the discharge of petroleum products or other dangerous substances into the environment.*** Potential hazards created by the spill for humans, vegetation, water resources, fish and wildlife vary in severity, depending on several factors, including nature of the material, quantity spilled, location and season. Refer to the detailed section *Spill Response Actions: By Product* for specific response information. The general emergency response to be followed in the event of a spill at the Nanuq North Project, Kivalliq, NU, is:

- 1) ***Protect people*** - prevent personnel from approaching the site and keep them at a distance sufficiently removed that they will not be injured by, or cause, a fire or explosion
- 2) ***Identify the product and its source*** - check container design, warning labels, markings, Material Safety Data Sheets, etc., to enable prompt and appropriate response
- 3) ***Stop the flow at the source*** - reduce or terminate the flow of product without endangering anyone



- 4) **Assess the seriousness of the spill** - assess potential dangers of the spill to human health and safety, the aquatic environment, wildlife, ground water, vegetation and other land resources
- 5) **Report the spill** – complete a NU Spill Report Form and contact the NU 24-hour Spill Report Line. Provide information on the form and to the Environment Canada officer by phone/FAX/e-mail (cf. Figures 1 and 2), including location of spill, (company) name of polluter, type and amount of material spilled, date and time of the spill, any perceived threat to human health or the environment, and remedial actions taken and planned.
- 6) **Clean up the spill** - follow procedures appropriate for the location, environment, material and time of year
- 7) **Evaluate and learn** – after the emergency has passed, evaluate the incident and the clean up with the goal of continuous improvement in prevention and response; train or re-train personnel and ensure a practice incident-and-response drill is held at least once per field season.

**Table 1:** Important Contact Information

Organization	Description	Telephone	Facsimile
Environment Canada	24 Hour Spill Report Line	1-867-920-8130 (Iqaluit)	1-867-873-6924
AANDC	Water Resources Officer	1-867-975-4298 (Iqaluit)	
AANDC	Lands Administrator	1-867-975-4275 (Iqaluit)	
AANDC	Land & Water Inspector	1-867- 645-2831 (Rankin Inlet)	
AANDC	Manager of Field Operations	1-867-645-4295 (Iqaluit)	
Government of Nunavut	Department of Environment	(867) 975-4644 (Iqaluit)	

## PERMITS AND AUTHORISATIONS

The Nanuq North Project consists of 51 mineral claims with an aggregate area of 33,056.75 hectares. All claims are on Crown land.

At the time of writing this Spill Plan INAC Class A Land-Use Permit – #N2007C0039 *pre-existed this permit application*. Nunavut Water Board Licence #2BE-NAN0813 *currently exists for the same area*.

## SPILL-RESPONSE TEAM LEADERS

The following are in charge of the Nanuq site, in respect of management or control of contaminants.

- 1) Peter Holmes, Exploration Manager: (604) 408-8880; 24-hour mobile: (250) 830-4443.
- 2) Shirley Standafer-Pfister, Manager, Regulatory and Environmental Affairs: (250) 686-1769 (business phone and 24-hour mobile)
- 3) Duncan McBean, Project Manager: 24-hour mobile: (778) 238-4847<sup>2</sup>;



Name and address of proponent in charge of the Nanuq Project:

Peregrine Diamonds Ltd.  
Suite 201-1250 Homer Street  
Vancouver, BC V6B 1C6

## **FACILITY DESCRIPTION**

Facility – seasonal tent camp accommodating up to 15 persons with above-ground fuel storage in 205L drums (diesel, Jet-B, petrol/gasoline) and propane in 45kg cylinders.

Location - Camp: at 65° 23' 43.5" N – 91° 12' 54.8" W. Fuel: stored on a vegetation free, natural-sand area, a safe distance from the tents and well away (>30m) from waterbodies.

**Table 2:** Projected Fuel and Oil Use for 2013/2014 Exploration Activities

<b>Fuels</b>	<b>Containers</b>	<b>Capacity</b>
Diesel for camp stoves, drills + heaters	50 drums	205L
Aviation turbine fuel (Jet-B)	50 drums	205L
Unleaded petrol (gasoline)	5 drums	205L
Propane	25 cylinders	45kg
Oxygen (welding and medical)	4 cylinders	45kg
Acetylene	4 cylinders	45kg
Oils/lubricants/cleaners	140	1L to 5L each

### **Drillshack – Spill-Kit Drums – 1 or 2 (1 per Drillshack; if 2 Drills, there will be 2 Kits <sup>2</sup>)**

Location: Moves with drillshack: 1 complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. (For example, Peregrine has used a 205L H.O.W. Spill Response Kit at other sites. *(Information on specific kit will be supplied as available, and the Spill Plan will be revised accordingly.)*

### **Fuel Cache in Drill Area (if Established<sup>2</sup>) – Spill-Kit Drums – 1**

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

### **Camp – Spill-Kit Drums – 3<sup>2</sup>**

Location: 1 stationed at gen-shed, 1 at camp diesel cache, 1 at camp heli-pad<sup>2</sup>: Each<sup>2</sup> complete drum kit will be supplied with (as a minimum) absorbents, socks, disposal bags. Additional small 20L spill kits may be deployed in<sup>2</sup> the tent area. *(Information on specific kits will be supplied as available, and the Spill Plan will be revised accordingly.)*

At all locations, additional bundles of absorbents will be present in addition to the spill kits.

**Table 3: General Response Inventory – 2013/2014<sup>5</sup> – Nanuq North Property**

#	Item	Location
1.	Fire extinguishers (valid/recharged) in each structure: Tents, drillshack.	Tents, drillshack
2.	Water pump and spare; hoses and fittings	Camp Dry and Drillshack
3.	Hammers, assorted weights	Camp Dry and at Drillshack
4.	Assorted 10L-20L plastic pails; galvanised metal pails (approx. 10L each)	Camp Dry and Drillshack
5.	Ice auger (gas-powered) c/w extensions (for spring conditions)	Camp Dry
6.	127L plastic garbage bags (boxes of 20 each)	Kitchen and Latrine
7.	Plastic tarps – assorted sizes	Camp Dry
8.	Liner material (minimum 30mil), for lining sumps, if required	Camp Dry
9.	Extra bundles of absorbents	Camp Dry
10.	Fuel-transfer pump	Camp and Drillshack
11.	Refuge drums (empty drums for contained spilt substances): 4 recommended	Camp

## **TRAINING AND PRACTICE DRILLS**



All members of the programme response team – as well as members of the general team, such as the Environment Manager and the Expeditor – will be familiar with the spill-response resources at the Nanuq North worksite (including their location and how to access them), this Spill 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. 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).



Spring-Summer 2010

\* As per NIRB Recommendation #16b accompanying Nanuq Land-Use Permit #N2007C0039

[illegible]

## FUEL SPILLS: RISK ASSESSMENT AND PREVENTIVE MEASURES

The possibility of a fuel spill on Peregrine projects will vary, depending on a number of factors, including human error, mechanical failure, road conditions, weather conditions, etc.

**Table 2:** Risk Assessment & Preventative Measures

POTENTIAL PROBLEM	IMPACT	PROBABILITY	PREVENTATIVE MEASURES
Diesel or Oil Major leak from drums	High	Low	<ul style="list-style-type: none"> <li>• Training/refresher training for site personnel who handle fuels.</li> <li>• Daily inspections and monitoring will take place during the programme by designated site personnel.</li> <li>• Placement of drums in a suitable area (e.g., depression, vegetation-free and boulder-free), with natural drainage pattern away from water, and the required setback from shoreline.</li> <li>• Berming with peat bales or snow.</li> <li>• Secure drums in use on proper stands or racks.</li> </ul>
A spill from a valve left open or a break in a transfer hose.	High	Moderate	<ul style="list-style-type: none"> <li>• Daily inspections to ensure all valves are either closed (when not needed), or that a catch pail is installed beneath valves, e.g., at tents, drillshacks, or that an enviro-tainer is in use.</li> <li>• Fuel transfer hoses will have a double locking mechanism and undergo daily inspection as part of the routine work cycle, to check for soundness and wear.</li> <li>• Markers around all fuel transfer lines.</li> </ul>
Pump Failure	Low	Low	<ul style="list-style-type: none"> <li>• Pumps are to be inspected weekly and -serviced monthly.</li> </ul>
Power Outages	Low	Low	<ul style="list-style-type: none"> <li>• In case of gen-set failure/power loss, any refuelling or maintenance under way in the gen-shed will cease immediately and the spare gen-set will be brought on line before refuelling or maintenance resumes.</li> <li>•</li> </ul>
Broken Or Blocked Drill Sludge Lines	Low	Moderate	<ul style="list-style-type: none"> <li>• Lines are inspected daily as part of the routine work cycle.</li> </ul>

**Table 2:** Risk Assessment & Preventative Measures continued...

POTENTIAL PROBLEM	IMPACT	PROBABILITY	PREVENTATIVE MEASURES
Chemical Spills	Low – High	Low	<ul style="list-style-type: none"> <li>• Training in the handling of chemicals will take place to ensure safe handling.</li> <li>• Chemicals will be stored in their original labelled drums, bottles, canisters or packages.</li> <li>• Chemicals will be stored in such a way as to protect from the weather or spillage, and be in non-reactive trays, underlain with liner material or absorbents to prevent chemicals coming into contact with soil or tent floors.</li> <li>• Regular inspections will take place of stored chemicals.</li> <li>• Inventory controls in place.</li> </ul>
Gases (oxygen, acetylene, propane, argon, carbon dioxide)	Low-High	Low	<ul style="list-style-type: none"> <li>• Training/refresher training for site personnel who handle gases.</li> <li>• Stored in designated areas until required, secured upright.</li> <li>• Daily checks of cylinders in use, including gas-detector monitoring, as necessary.</li> </ul>

**FIGURE 1: Updated NWT-Nunavut Spill Report Form**



Canada

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY					
A	REPORT DATE: MONTH - DAY - YEAR		REPORT TIME	<input type="checkbox"/> ORIGINAL SPILL REPORT, OR	REPORT NUMBER
B	OCCURRENCE DATE: MONTH - DAY - YEAR		OCCURRENCE TIME	<input type="checkbox"/> UPDATE # TO THE ORIGINAL SPILL REPORT	-
C	LAND USE PERMIT NUMBER (IF APPLICABLE)		WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM THE NAMED LOCATION			REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR	
E	LATITUDE DEGREES MINUTES SECONDS		LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION		
G	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION		
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE		SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS				
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE
REPORT LINE USE ONLY					
N	RECEIVED AT SPILL LINE BY	POSITION Station operator	EMPLOYER	LOCATION CALLED Yellowknife, NT	REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY	CONTACT NAME		CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					



**FIGURE 2: Instructions for Completing the NT-NU Spill Report Form**

Instructions for Completing the NT-NU Spill Report Form	
<p>This form can be filled out electronically and e-mailed as an attachment to <a href="mailto:spills@gov.nt.ca">spills@gov.nt.ca</a>. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.</p>	
<b>A. Report Date/Time</b>	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. <b>Please do not fill in the Report Number:</b> the spill line will assign a number after the spill is reported.
<b>B. Occurrence Date/Time</b>	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
<b>C. Land Use Permit Number /Water Licence Number</b>	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
<b>D. Geographic Place Name</b>	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. <b>You must include the geographic coordinates</b> (Refer to Section E).
<b>E. Geographic Coordinates</b>	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
<b>F. Responsible Party Or Vessel Name</b>	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. <b>Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.</b>
<b>G. Contractor involved?</b>	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
<b>H. Product Spilled</b>	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
<b>I. Spill Source</b>	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m <sup>2</sup> )
<b>J. Factors Affecting Spill</b>	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
<b>K. Additional Information</b>	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. <b>Please number the pages to ensure that recipients can be certain that they received all pertinent documents.</b> If only the spill report form was filled out, number the form as "Page 1 of 1".
<b>L. Reported to Spill Line by</b>	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
<b>M. Alternate Contact</b>	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
<b>N. Report Line Use Only</b>	<b>Leave Blank.</b> This box is for the <b>Spill Line's use only.</b>



## PRODUCT CATEGORIES

The materials in this Spill Contingency Plan are generally divided into five categories:

- Flammable Immiscible Liquids
- Soluble Solids/Oxidizers
- Flammable Compressed Gases
- Soluble Liquids
- Toxic Solids

### Flammable Immiscible Liquids

These substances are all hydrocarbon-based and will ignite under certain conditions.

Petrol (gasoline) and aviation fuels pose the greatest fire and safety hazard and are not recoverable when spilled on water.

### Action Plan Steps

Confirm that a spill has occurred. It may not be obvious if a spill has occurred - look for:

- pooled liquid.
- damage to equipment/tanks.
- smell of fuel or chemicals and
- leaks from hatches, valves or other fixtures

### Assess the Situation

Before initiating response actions, take the time to determine the nature of a spill and to collect some or all of following facts:

- potential risk of fire, explosion and environmental damage.
- extent of injuries to co-workers or the public.
- source and approximate size of the spill.
- possible methods to stop the flow of product; and
- proximity to water.

### Take Action

- Eliminate ignition source(s) if safe to do so.
- Shut off spill source if safe to do so.
- Attend to any injured persons.
- Restrict personnel to the spill site using barriers or marker tape.
- Warn others in the area of the spill.
- Use an explosion meter to monitor atmospheric gas concentrations.
- Report spill to Peregrine management.
- Transport Spill Kit to the spill site.
- Control spreading and minimise impacts.

### Spill Containment and Recovery

Special care should be taken to ensure that spilled material does not reach waterbodies where recovery is more difficult. Ice augers (under appropriate conditions) can be effective in terms of locating and exposing oil for burning or pumping off.



### **Waste Disposal**

At the Nanuq camp, all combustibles are incinerated on a daily basis. This includes food scraps, office garbage, etc.

Non-hazardous solid “inert” waste generated (e.g., scrap metal, pipe, wood) or potentially hazardous waste (e.g., plastics, liners, Styrofoam) will be transported off site for disposal according to its nature.

All hazardous wastes and waste items that cannot be incinerated are securely packaged, flown out on aircraft backhauls, and disposed of in designated locations off-site.

Prior to disposal, the hazardous waste will be properly packaged, labelled, and stored and manifested in a Transportation of Dangerous Goods (TDG) approved shipping container. (A waste generator number has been obtained from the Government of Nunavut (GN) Department of Environment. GN Waste Generator Forms will be used).

The container will have the appropriate hazardous waste labels.

All Federal, Provincial and Territorial regulations will be adhered to.

### **Used Container Disposal**

To ensure the proper disposal of used containers that have contacted, collected or contained a hazardous or regulated substance (e.g., paint cans, oil cans, acid containers, aerosol cans).

Containers having contacted, collected or contained an acute hazardous material, corrosive or reactive substance will be triple washed with water prior to disposal. (Contaminated wash-water can report to labelled refuge drums).

Metal containers can be disposed of as scrap metal and flown off-site for disposal. Any free liquid in the container will be disposed of properly, and the residual material allowed to dry or solidify.

### **Used Drum Disposal**

The majority of used fuel drums (205L) for Jet-B fuel and unleaded petrol are returned to the supplier. However, during operations, some drums will be set aside for usage as refuge drums, for storage of other “used” products (i.e., used glycol, used oil, spillt materials, oil filters, etc). These drums will be properly labelled and stored prior to acceptable removal and disposal off-site at an approved facility.

## **RESPONSE ORGANISATION**

On rare occasions, additional company and outside resources may need to be brought in to support the spill cleanup. For a major incident, the Project Manager (*cf. Page 6*) would mobilise Peregrine, contractor and outside expertise for the response.

## **GENERAL RESPONSIBILITIES**

The following provides a general guide to the Spill Response Organisation responsibilities. In some cases, certain Peregrine personnel may fill dual roles, depending upon the circumstances of the incident.



In most incidents, the Site Supervisor, working with the site Spill Response Team, will handle the initial response, containment and cleanup. In larger incidents, Peregrine management will play a more active role. In all cases, Peregrine management will be notified immediately of a spill and will be responsible for notifying the 24-hour Spill Line or assigning this task to a designate.

Other contractors and specialists may be brought in to assist in response to a major incident.

### **Individual Discovering Incident**

- ▣ Assess the initial severity of the spill and safety concerns.
- ▣ Identify the source of the spill
- ▣ Report all spills to Supervisor.
- ▣ Determine the size of the spill and stop or contain it, if possible.

### **Spill Response Team**

- ▣ Conduct the cleanup of spills under the direction of the Supervisor.
- ▣ Deploy booms, absorbent and other equipment and materials as required.
- ▣ Take appropriate response measures.
- ▣ Continue the cleanup as directed by the Supervisor or until relieved.

### **Supervisor**

- ▣ Assist in initial and ongoing response efforts.
- ▣ Supervise the Spill Response Team.
- ▣ With work crew, take initial action to seal off the source and contain spill.
- ▣ Decide with Peregrine management if mobilisation of additional equipment is required.
- ▣ Assess whether burning is a viable cleanup measure. Consult regulatory agency (Environment Canada on Spill Line can provide initial guidance).
- ▣ Ensure co-ordination of equipment and manpower as needed (Peregrine and contractors)
- ▣ Ensure expeditious response and cleanup of spill site and impacted area.

### **Additional Resources – Support Team to the Spill-Response Team**



- ▣ Provide assistance to Supervisor as required.
- ▣ Responsible for mobilising additional Peregrine support staff, security and other contractors as required.

### **Peregrine Management**

- ▣ Records the time of the report, source of information and details on location, size, type of spill and any other information available on the Spill Report Form.
- ▣ Ensures that the spill is reported to the NU 24-Hour Spill Report Line.
- ▣ Oversees or directs the cleanup operation until it is satisfactorily completed.
- ▣ Together with the Supervisor, decides if additional equipment is required to contain and cleanup spills.
- ▣ Maintains contact with Supervisor to ensure final inspection and sign-off on the spill.
- ▣ Notifies internal company departments.
- ▣ Initiates Mutual Aid Agreements if so required.
- ▣ Oversees completion and distribution of the Spill Report.
- ▣ Ensures investigation identifies measures to prevent similar spills.
- ▣ Provides cleanup advice to the Supervisor.
- ▣ Assists with preparation of press releases.
- ▣ Provides advice on storage and disposal options.
- ▣ Ensures that there are followup reports prepared on the spill event, cleanup and environmental impacts.
- ▣ Ensures that post-spill reports are completed and takes action, as necessary, to prevent a recurrence.
- ▣ Liaises with government agencies (as required)

### **Response Resources**

A wide variety of spill control/recovery equipment and material exists for dealing with spills of petroleum products and chemical reagents (*cf. Pages 6-7*).

### **Response Equipment Deployment.**

All equipment is stored in such a manner as to be readily available on short notice.



The Supervisor would immediately respond to a reported spill site by notifying site personnel to move into place material necessary to provide control and cleanup (e.g., shovels, refuge drums, tarps, liner material <sup>2</sup>, etc.). Emergency spill containment and recovery materials and supplies are available on site for immediate mobilisation at any time.



## CONTACT LIST – SPILL RESPONSE/ASSISTANCE OR ADVICE

### 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)

### M & T Enterprises Local Expeditors

[htatty@gmail.com](mailto:htatty@gmail.com)<sup>2</sup> (867) 645-2778  
 Hamish Tatty<sup>2</sup> (867) 645-2590 (FAX)

Environment Canada 24-hour line (867) 766-3737  
 Indian and N. Affairs Canada Inspector – Crown Lands (867) 975-4295  
 Indian and N. Affairs Canada Regional Inspector (867) 645-2831

GN Dept. of Environment <sup>2</sup>		(867) 975-4644 <sup>2</sup>
	Mgr. Pollution Control & Air Qual. <sup>2</sup>	(867) 975-7748 <sup>2</sup>
	Mgr. of Wildlife, David Vetra <sup>2</sup> <a href="mailto:dvetra@gov.nu.ca">dvetra@gov.nu.ca</a> <sup>2</sup>	(867) 857-2828 <sup>2</sup>

### Lands Administration, Indian and Northern Affairs Canada

Lands Administrator, (867) 975-4275  
 Nunavut (Iqaluit Office) (867) 975-4286 (FAX)

Water Res. Officer Current Officer (867) 645-2831  
 Indian and Northern Affairs (Rankin Inlet)

RCMP, Rankin Inlet detachment Emergencies only: (867) 645-1111

RCMP, Baker Lake detachment Emergencies only: (867) 793-4111

Rankin Inlet Fire Department (867) 645-2525 (emergency)

**24-hour spill line: (867) 920-8130 [spills@gov.nt.ca](mailto:spills@gov.nt.ca)**

Kivalliq Regional Environ. Protection Officer (Arviat) – Alain Chouinard – (867) 857-2828  
 Environ. Conserv. Officer Johanne Coutu-Autut (867) 645-8084

GN-DOE – Rankin Inlet Office  
 Environ. Conserv. Officer GN-DOE- Iqaluit Office (867) 975-7700

Workers' Compensation Board –Occupational Health and Safety (Iqaluit Office)  
 (877) 404-4407

### Workers' Compensation Board-Exploration Site Accident Reports

(800) 661-0792 (24hr)

## SPILL RESPONSE ACTIONS: BY PRODUCT

At the Peregrine Nanuq Project, “safety first” is the abiding principle which guides response: Spills and products are to be handled as/if safety permits.

After adequate safety precautions, effort will be concentrated on stopping or eliminating the source of ignition.

### Diesel

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p>APPEARANCE: Clear, Yellow or Red    FLASH POINT: 40°C (Minimum)</p> <p>ODOUR:            Petroleum            POUR POINT: -50° to -6°C</p> <p>SOLUBILITY:    Insoluble            VISCOSITY:    Not Viscous</p> <p>VAPOUR DENSITY:    Will Sink to Ground Levels    SPECIFIC GRAVITY:    Floats on Water (0.8 – 0.9)</p>	
SAFETY MEASURES	
WARNING	<p>Vapours are heavier than air and form easily at high temperatures.</p> <p>Empty containers can contain explosive vapours.</p> <p>Toxic gases form upon combustion.</p> <p>Eye contact causes irritation.</p> <p>Material can accumulate static charges.</p> <p>Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.</p>
PERSONAL PROTECTION	<p>Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE.)</p> <p>Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.</p>
PRECAUTIONS	<p>Monitor for explosive atmosphere.</p> <p>Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone and peroxides. Eliminate ignition sources.</p> <p>Restrict access and work upwind of spill.</p>



RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, and alcohol foam or water fog. Use water to cool containers exposed to fire.

## Hydraulic Oil

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p>APPEARANCE: Straw-Yellow Liquid    FLASH POINT: 215°C (Minimum)          ODOUR: Petroleum    POUR POINT: -25°C          SOLUBILITY: Generally Insoluble    VISCOSITY: Medium (265 x ST, 15°C)          VAPOUR DENSITY: Few Vapours Emitted    SPECIFIC GRAVITY: Floats on Water (0.9)</p>	
SAFETY MEASURES	
WARNING	Vapours are heavier than air but are unlikely to form. Toxic gas can form in fire and at high temperatures. CO, CO <sub>2</sub> , and dense smoke are produced upon combustion. Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.
PERSONAL PROTECTION	Always wear impervious, chemical -resistant clothing, gloves, footwear, and goggles; PVC, nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER). Use of organic vapour cartridge respirator is highly unlikely.
PRECAUTIONS	Avoid excessive heat, which can cause formation of vapours. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.

RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	<p>Wear SCBA in confined areas.</p> <p>Shut off fuel supply.</p> <p>Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol, foam or water fog.</p> <p>NOTE: water or foam may cause frothing.</p> <p>Use water to cool containers exposed to fire.</p>

## Lubricating Oil

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p>APPEARANCE: Amber Liquid FLASH POINT: 190° to 2220°C</p> <p>ODOUR: Petroleum POUR POINT: -35° to -40°C</p> <p>SOLUBILITY: Generally Insoluble VISCOSITY: Medium (255 xST, 15°C)</p> <p>VAPOUR DENSITY: Few Vapours Emitted SPECIFIC GRAVITY: Floats on Water (0.9)</p>	
SAFETY MEASURES	
WARNING	<p>Vapours are heavier than air but are unlikely to form.</p> <p>Toxic gas can form in fire and at high temperatures.</p> <p>CO, CO<sub>2</sub>, and dense smoke are produced upon combustion.</p> <p>Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.</p>
PERSONAL PROTECTION	<p>Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER).</p> <p>Use of organic vapour cartridge respirator is highly unlikely.</p>
PRECAUTIONS	<p>Avoid excessive heat, which can cause formation of vapours.</p> <p>Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides.</p> <p>Eliminate ignition sources.</p> <p>Restrict access and work upwind of spill.</p>

RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA and eye protection when responding to lube oil fires. Shut off fuel supply. Extinguish fire with CO <sub>2</sub> , dry chemical, alcohol foam or water fog. NOTE: water or foam may cause frothing. Use water to cool containers, exposed to fire.
ON LAND	Prevent additional discharge of oil. Do not flush into ditch/drainage systems. Block entry into waterways. Contain spill by diking with earth, snow or other barrier. Remove minor spills with absorbent and/or peat moss. Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.
ON WATER	Use booms to contain and concentrate spill. Remove spill using absorbents or skimmer. Protection booming can be considered for water intakes.
STORAGE & TRANSFER	Store closed, labelled containers in cool, and ventilated areas away from incompatible materials.
DISPOSAL	Segregate waste types. Place contaminated materials into marked containers. Consult with environmental authorities during final disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT) water for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

## Waste Oil

ON LAND	<p>Prevent additional discharge of oil.</p> <p>Do not flush into ditch/drainage systems.</p> <p>Block entry into waterways.</p> <p>Contain spill by diking with earth, snow or other barrier.</p> <p>Remove minor spills with absorbent pads and/or peat moss.</p> <p>Remove large spills with pumps or vacuum equipment.</p> <p>Spill can also be mechanically removed if oil is too viscous to be pumped.</p>
ON WATER	<p>Use booms to contain and concentrate spill.</p> <p>Remove spill using absorbents or skimmer.</p> <p>Protection booming can be considered for water intakes.</p>
STORAGE & TRANSFER	<p>Store closed, labelled containers in cool, ventilated areas away from incompatible materials.</p>
DISPOSAL	<p>Segregate waste types.</p> <p>Place contaminated materials into marked containers.</p> <p>Consult with environmental authorities during final disposal.</p>
FIRST AID	
EYES	<p>Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open.</p> <p>Remove contact lenses, if exposed to vapours or liquid.</p> <p>Get prompt medical attention.</p>
SKIN	<p>Remove and launder contaminated clothing.</p> <p>Wash skin thoroughly with soap and water.</p> <p>Get medical attention.</p> <p>Discard saturated leather articles.</p>
INHALATION	<p>Move victim to fresh air.</p> <p>Perform CPR if victim not breathing.</p> <p>Provide oxygen if victim is having difficulty breathing.</p> <p>Get prompt medical attention.</p>
INGESTION	<p>DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.</p> <p>Get prompt medical attention.</p>

## Petrol (Unleaded Gasoline)

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p>APPEARANCE: Colourless Liquid (Can Be Dyed) FLASH POINT: -50°C            ODOUR: Gasoline/Petroleum POUR POINT: -60°C            SOLUBILITY: Insoluble VISCOSITY: Not Viscous (&lt;1 cSt)            VAPOUR DENSITY: Will Sink to Ground Level SPECIFIC GRAVITY: Floats on Water (0.7 - 0.8)</p>	
SAFETY MEASURES	
WARNING	<p>Vapours form instantaneously, and are heavier than air.            Empty containers can contain explosive vapours.            Vapours can travel to distant sources of ignition and flash back.            Eye contact causes irritation.            Material can accumulate static charges.            Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.</p>
PERSONAL PROTECTION	<p>Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE).            Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.</p>
PRECAUTIONS	<p>Monitor for explosive atmosphere.            Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources.            Restrict access and work upwind of spill.</p>
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	<p>Wear SCBA in confined areas.            Shut off fuel supply.            Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.            Use water to cool containers, exposed to fire.</p>

ON LAND	<p>ELIMINATE IGNITION SOURCES.</p> <p>Do not flush into ditch/drainage systems.</p> <p>Block entry into waterways.</p> <p>Contain spill by diking with earth, snow or other barrier.</p> <p>Remove minor spills with peat moss and/or absorbent pads.</p> <p>Cover pools with foam to prevent vapour evolution if gasoline presents a fire hazard; otherwise allow vapours to dissipate.</p>
ON WATER	<p>ELIMINATE IGNITION SOURCES.</p> <p>DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.</p> <p>Protection booming can be considered for water intakes.</p>
STORAGE & TRANSFER	<p>Store closed, labelled container in cool, ventilated areas away from incompatible materials.</p> <p>Electrically ground containers and vehicles during transfer.</p>
DISPOSAL	<p>Place contaminated materials into segregated marked containers.</p> <p>Consult with environmental authorities during final disposal.</p>
FIRST AID	
EYES	<p>Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open.</p> <p>Remove contact lenses, if exposed to vapours or liquid.</p> <p>Get prompt medical attention.</p>
SKIN	<p>Remove and launder contaminated clothing.</p> <p>Wash skin thoroughly with soap and water.</p> <p>Get medical attention.</p> <p>Discard saturated leather articles.</p>
INHALATION	<p>Move victim to fresh air.</p> <p>Perform CPR if victim not breathing.</p> <p>Provide oxygen if victim is having difficulty breathing.</p> <p>Get prompt medical attention.</p>
INGESTION	<p>DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.</p> <p>Get prompt medical attention.</p>



## Jet-B (JP-4) OR Jet-A Fuel

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p> <b>APPEARANCE:</b> White or Pale Yellow Liquid    <b>FLASH POINT:</b> -20°C to -25°C  <b>ODOUR:</b> Gasoline/Petroleum    <b>POUR POINT:</b> -50°C  <b>SOLUBILITY:</b> Negligible    <b>VISCOSITY:</b> Not Viscous (&lt;7 cSt)  <b>VAPOUR DENSITY:</b> Will Sink to Ground Level    <b>SPECIFIC GRAVITY:</b> Floats on Water (0.75 - 0.8)         </p>	
SAFETY MEASURES	
WARNING	<p>           Vapours instantaneously form, and are heavier than air.            Low-lying areas can trap explosive vapours.            Vapours can travel to distant sources of ignition and flash back.            Eye contact causes irritation.            Material can accumulate static charges.            Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.         </p>
PERSONAL PROTECTION	<p>           Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE).            Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.         </p>
PRECAUTIONS	<p>           Monitor for explosive atmosphere.            Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides.            Eliminate ignition sources.            Restrict access and work upwind of spill.         </p>
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	<p>           Wear SCBA in confined areas.            Shut off fuel supply.            Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.            Use water to cool containers, exposed to fire.         </p>

ON LAND	<p>ELIMINATE IGNITION SOURCES.</p> <p>Do not flush into ditch/drainage systems.</p> <p>Block entry into waterways.</p> <p>Contain spill by diking with earth, snow or other barrier.</p> <p>Remove minor spills with peat moss and/or absorbent pads.</p> <p>Cover pools with foam to prevent vapour evolution if gasoline presents a fire hazard; otherwise allow vapours to dissipate.</p>
ON WATER	<p>ELIMINATE IGNITION SOURCES.</p> <p>DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.</p> <p>Protection booming can be considered for water intakes.</p>
STORAGE & TRANSFER	<p>Store closed, labelled containers in cool, ventilated areas away from incompatible materials.</p> <p>Electrically ground containers and vehicles during transfer.</p>
DISPOSAL	<p>Place contaminated materials into segregated marked containers.</p> <p>Consult with environmental authorities during final disposal.</p>
FIRST AID	
EYES	<p>Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open.</p> <p>Remove contact lenses, if exposed to vapours or liquid.</p> <p>Get prompt medical attention.</p>
SKIN	<p>Remove and launder contaminated clothing.</p> <p>Wash skin thoroughly with soap and water.</p> <p>Get medical attention.</p> <p>Discard saturated leather articles.</p>
INHALATION	<p>Move victim to fresh air.</p> <p>Perform CPR if victim not breathing.</p> <p>Provide oxygen if victim is having difficulty breathing.</p> <p>Get prompt medical attention.</p>
INGESTION	<p>DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.</p> <p>Get prompt medical attention.</p>





## Fuel Dye

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p> <b>APPEARANCE:</b> Dark Red Liquid      <b>FLASH POINT:</b> -28°C  <b>ODOUR:</b> Aromatic Hydrocarbon      <b>POUR POINT:</b> -45°C  <b>SOLUBILITY:</b> Negligible      <b>VISCOSITY:</b> Not Viscous  <b>VAPOUR DENSITY:</b> Will Sink to Ground Level      <b>SPECIFIC GRAVITY:</b> Floats on Water         </p>	
SAFETY MEASURES	
WARNING	<p>           Vapours instantaneously form, and are heavier than air.            Low-lying areas can trap explosive vapours.            Vapours can travel to distant sources of ignition and flash back.            Eye contact causes irritation.            Material contains xylene, benzene and ethyl benzene.            Inhalation of vapours can cause nausea, headache and dizziness.         </p>
PERSONAL PROTECTION	<p>           Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE OR PVC).            Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.         </p>
PRECAUTIONS	<p>           Avoid breathing vapours or mist.            Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides.            Eliminate ignition sources.            Restrict access and work upwind of spill.         </p>
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	<p>           Wear SCBA in confined areas.            Shut off fuel supply.            Extinguish fire with CO<sub>2</sub>, dry chemical, AFFF foam or water fog.            Use water to cool containers, exposed to fire.         </p>

## Propane

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p> <b>APPEARANCE:</b> Colourless Gas      <b>FLASH POINT:</b> -104°C  <b>ODOUR:</b> Natural Gas Odour      <b>POUR POINT:</b> -190°C  <b>SOLUBILITY:</b> Insoluble      <b>VISCOSITY:</b> N/A  <b>VAPOUR DENSITY:</b> Will Sink to Ground Level      <b>SPECIFIC GRAVITY:</b> Liquid Floats on Water         </p>	
SAFETY MEASURES	
<b>WARNING</b>	<p>           Vapours form instantaneously, and are heavier than air.            Vapours can travel to distant sources of ignition and flash back.            Eye contact causes irritation.            Material can accumulate static charges.            Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.         </p>
<b>PERSONAL PROTECTION</b>	<p>           Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; Nitrile and Viton are suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC).            Avoid frostbite burn to skin and eyes from contact with propane.            Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.         </p>
<b>PRECAUTIONS</b>	<p>           Monitor for explosive atmosphere.            Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides.            Eliminate ignition sources.            Restrict access and work upwind of spill.         </p>
RESPONSE TO FIRES	
<b>CONSIDER ACTION ONLY IF SAFETY PERMITS!</b>	<p>           Wear SCBA in confined areas.            Shut off fuel supply.            Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog.            Use water to cool containers, exposed to fire.         </p>

ON LAND	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.
ON WATER	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.
STORAGE & TRANSFER	It is not possible to collect released material.
DISPOSAL	Consult with environmental authorities if the disposal of any contaminated materials is required.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

## Acetylene

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p> <b>APPEARANCE:</b> Colourless Gas      <b>FLASH POINT:</b> -18°C  <b>ODOUR:</b> Garlic-Like      <b>POUR POINT:</b> -82°C  <b>SOLUBILITY:</b> Slightly Soluble      <b>VISCOSITY:</b> N/A  <b>VAPOUR DENSITY:</b> Will Sink to Ground Level      <b>SPECIFIC GRAVITY:</b> Liquid Floats on Water (0.06)         </p>	
SAFETY MEASURES	
WARNING	<p>           Vapours form instantaneously, and are heavier than air.            Empty containers can contain explosive vapours.            Vapours can travel to distant sources of ignition and flash back.            Eye contact causes irritation.            Material can accumulate static charges.            Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.         </p>
PERSONAL PROTECTION	<p>           Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; use suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC).            Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.         </p>
PRECAUTIONS	<p>           Monitor for explosive atmosphere.            Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides.            Eliminate ignition sources.            Restrict access and work upwind of spill.         </p>
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	<p>           Wear SCBA in confined areas.            Shut off fuel supply.            Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol, foam, or water fog.            Use water to cool containers, exposed to fire.         </p>

## Antifreeze (Ethylene Glycol)

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
<p>APPEARANCE: Colourless Liquid      FLASH POINT: 111°C          ODOUR: Slight; Undetectable &lt;25 ppm      POUR POINT: -13°C (48% Solution)          SOLUBILITY: Soluble in All Proportions      VISCOSITY: Not Viscous (=22 cSt)          VAPOUR DENSITY: Will Sink to Ground Level      SPECIFIC GRAVITY: Same as Water (1.0)</p>	
SAFETY MEASURES	
WARNING	<p>Vapours are heavier than air.          Ingestion of significant quantities can be lethal.          Eye contact causes irritation.          Skin contact can cause intoxication due to absorption.          Inhalation of vapours can cause intoxication, headache, vomiting, unconsciousness with convulsions, and even death          Avoid inhaling vapours, particularly in enclosed places.</p>
PERSONAL PROTECTION	<p>Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; neoprenes, nitrile, PVC are suitable protective materials.</p>
PRECAUTIONS	<p>Monitor empty containers for explosive atmosphere.          Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides.          Eliminate ignition sources.          Restrict access and work upwind of spill.</p>
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	<p>Wear SCBA in confined areas.          Shut off fuel supply.          Extinguish fire with CO<sub>2</sub>, dry chemical, alcohol foam or water fog. (Note: Water or foam may cause frothing).          Use water spray to cool containers exposed to fire.</p>

ON LAND	Block entry into waterways. Do not flush into ditch/drainage systems. Contain spill by diking with earth, snow or other barrier. Remove minor spills with universal type absorbent. Remove large spills with pumps or vacuum equipment.
ON WATER	Ethylene glycol sinks and mixes with water; contain spill by isolating contaminated water through damming or diversion.
STORAGE & TRANSFER	Store closed, labelled containers in cool, ventilated areas away from incompatible materials
DISPOSAL	Segregate waste types. Place contaminated materials into marked containers. Consult with environmental authorities during final disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove contaminated clothing. Wash skin thoroughly soap and water. Get medical attention.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	INDUCE VOMITING IMMEDIATELY if victim is conscious; Get prompt medical attention.

## **SPILL PLANNING AND LOGISTICS**

The feasibility of containing and recovering a spill will be generally determined by its location and the rate of release, spreading, transport and evaporation. These rates should be compared with the total time needed to deploy response equipment in order to evaluate whether or not containment, and/or absorbent and skimming operations, can be effectively implemented. The pre-assembly of spill cleanup kits will expedite response and reduce the total deployment time needed, including:

- Equipment and support material mobilisation time.
- Personnel mobilisation time, including transit and assembly.
- Actual equipment setup and deployment time.

- a. Determine whether or not a spill has entered a waterway and whether or not access by land or water to control points is possible so that booms, absorbents and skimmers can be deployed. Check maps and consult with personnel familiar with the spill area.
- b. Establish priorities to optimise use of personnel and gear needed for all cleanup phases (containment, removal, storage, transfer and disposal) at selected sites.
- c. Allow additional time for adverse weather and flying.

## **MONITORING SPILLS**

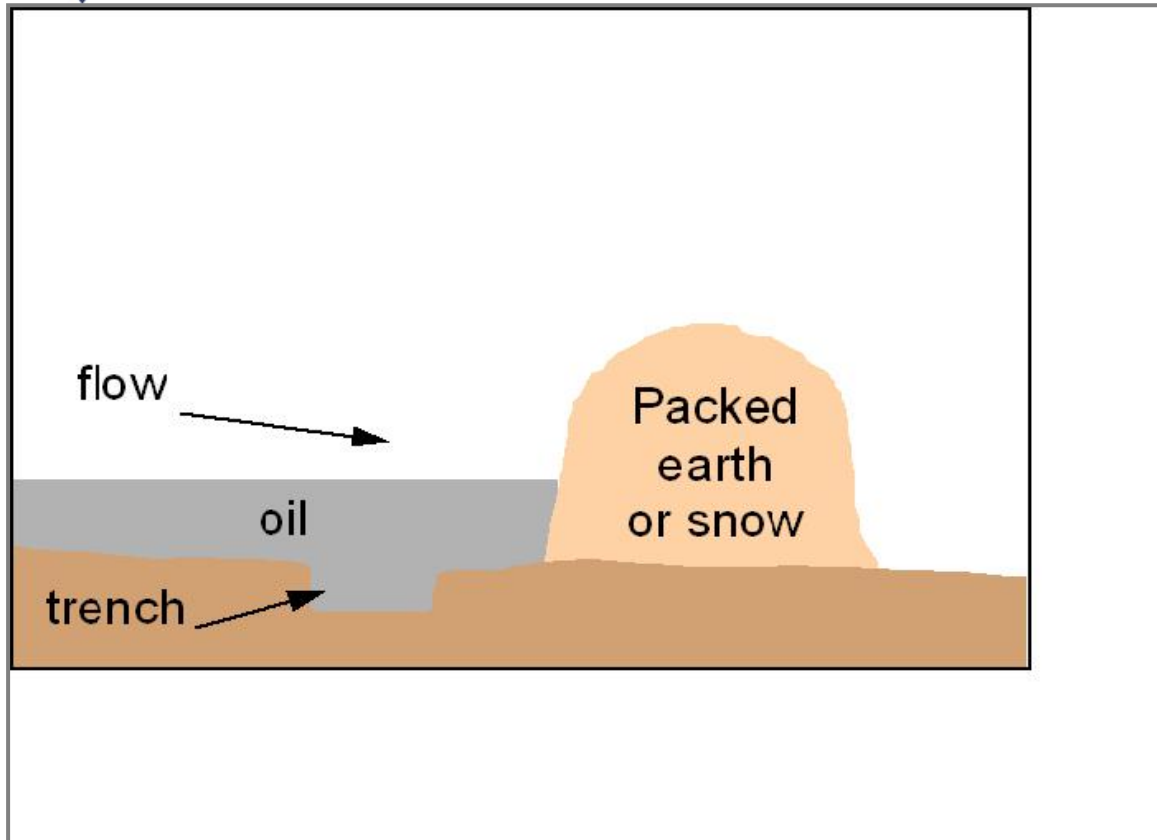
Peregrine will monitor spills throughout the response to ensure safety and to direct cleanup efforts:

- Explosive gas concentrations in the atmosphere using an explosion meter.
- Spill movement and behaviour, in order to properly direct response efforts.
- All threats to the safety of people, property and the environment.

## **SPILLS ON LAND**

Spills on land should be contained as close to the source as possible, if safety allows. Peregrine will make every effort to ensure that a spill does not reach water, where its containment and recovery (after breakup) are more difficult and the potential environmental impacts are greater. Containment can be achieved using:

- A berm or dyke around the spill source.
- A trench or ditch downslope of the spill source.



### **Earthen Berm/Trench**

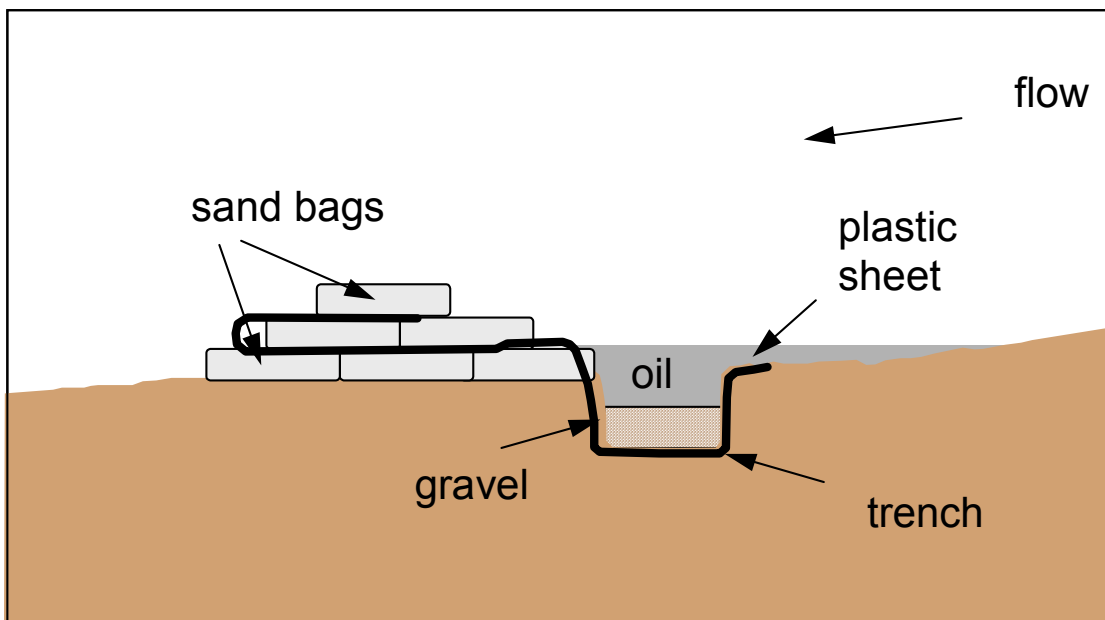
If possible, locate the berm/trench sufficiently downslope of the release point to complete its construction before the spill arrives. Dig the trench along a natural drainage contour.

It should be approximately 0.5 m deep with a relatively flat bottom. The excavated material can then be combined with other available material to build the berm.

### **Sand Bag Berm/Trench**

Sand bags can be used where available and if the earth is too hard or frozen and cannot be excavated or compacted. A plastic liner can be used to seal the trench and bags should be anchored with gravel or rocks and be woven between layers of bags.





### Spills on Muskeg

Muskeg is generally poorly drained, wet and spongy. Internal drainage is usually slow and the depth of peat over mineral soil varies greatly. Muskeg is also highly acidic and low in nutrients, making biodegradation very slow, even during the summer months.

It is recommended that small oil spills in muskeg be mixed with peat moss and allowed to degrade during the summer months, since more damage can be done by attempting cleanup using mechanical removal methods.

In the event of a small spill, it is important to weigh the advantages of cleanup versus the potential negative impacts on the terrain. Both personnel and equipment on wet or sensitive areas can cause considerable damage. In many cases, the best solution may be to add nutrients to the contaminated area and monitor the site to ensure that the spill does not migrate to an adjacent sensitive area. In all cases, appropriate environmental advisors and regulatory authorities should be consulted.

### SPIILLS ON WATER



Containing spills in water is often difficult because oil quickly spreads. In turbulent water, oil and chemicals are likely to mix into the water column, making recovery impractical. For these reasons, it is important that if the spill reaches water, that containment be attempted as close to the source as possible, and that the spill be prevented from reaching a flowing stream.

Spills in lakes should be contained, if possible, before reaching outlets where containment and recovery can be difficult and dangerous.

Efforts to contain spills in large streams should be limited to land-based operations where the oil might pool in accessible back eddies. The recovery of water-soluble chemicals is not possible.

In flowing streams, oil travels at the same speed as the surface current. On larger rivers or in open lake areas, slicks are also transported at 3.5% of the wind speed. Although a comparatively small effect, it can be an important factor if the wind is at right angles to the water flow and if the water surface is extensive. The wind can force the spill to the sides of the river where flows are slower or the shore of a lake. Long reaches of the river may become contaminated, although containment and recovery might also be possible.

In smaller streams, the wind will have less impact and the slick speed can be easily estimated. Placing a small stick in the middle of the stream and determining the length of time required to travel a given distance, typically 10 m. This information can be quickly converted to speed ( $36/\text{time (sec)} = \text{km/h}$ ) to determine the estimated travel time to a confluence or other sensitive area.

### **Containment Strategies for Spills on Water**

Determining the best strategy for containment will depend on a number of factors:

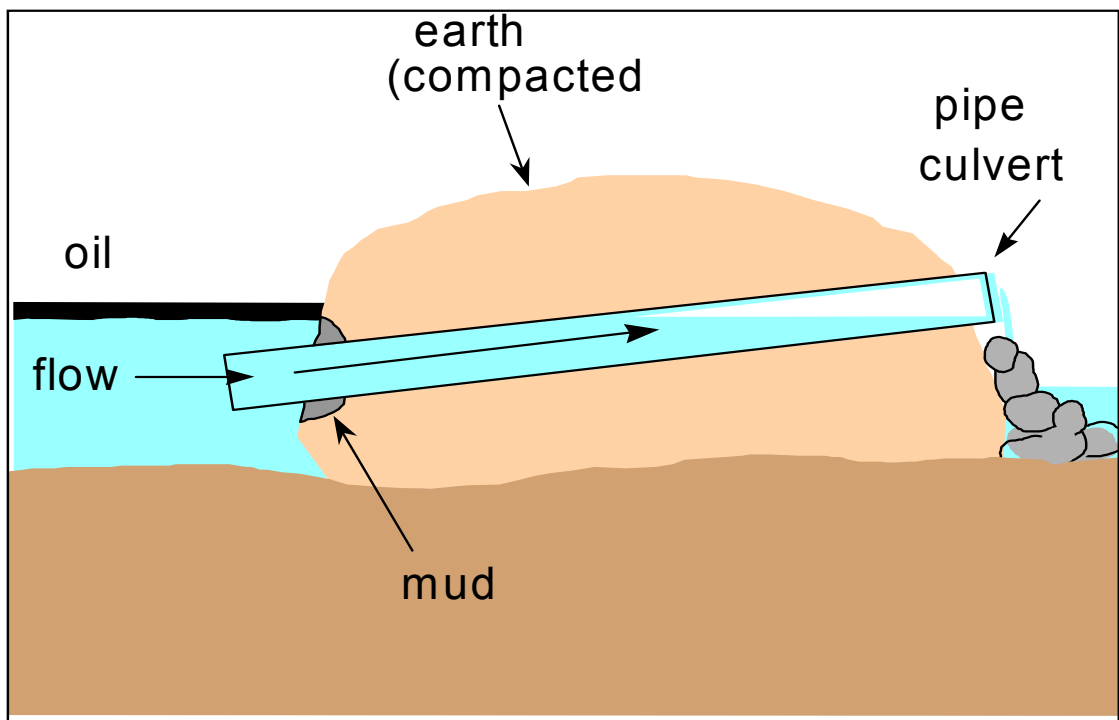
- Speed of oil-slick travel
- Location of possible containment sites
- Availability of personnel and equipment
- Location of sensitive areas
- Safety of operations

Spills on water can be contained by using floating booms (absorbent or non-absorbent) or by constructing a temporary berm or inverted weir. The objective is to build a barrier against which the (normally floating) oil will pool whilst allowing the underflow of water.

### Inverted Weir:

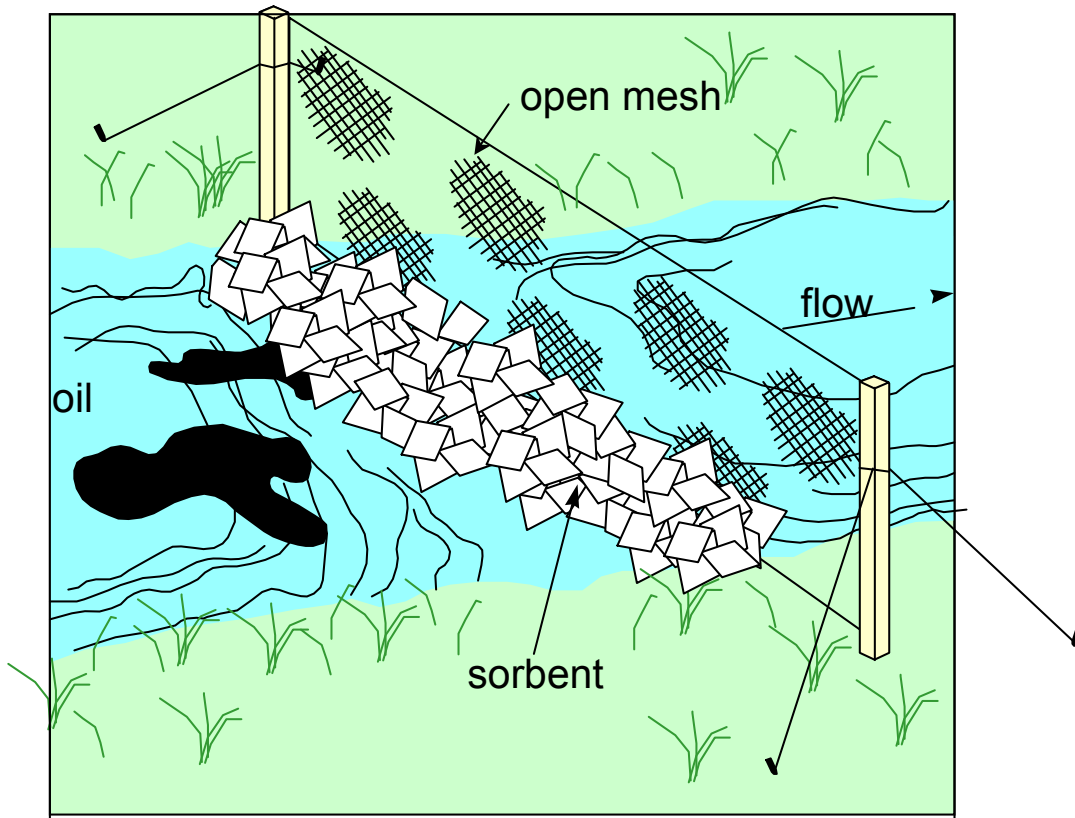
#### Booms

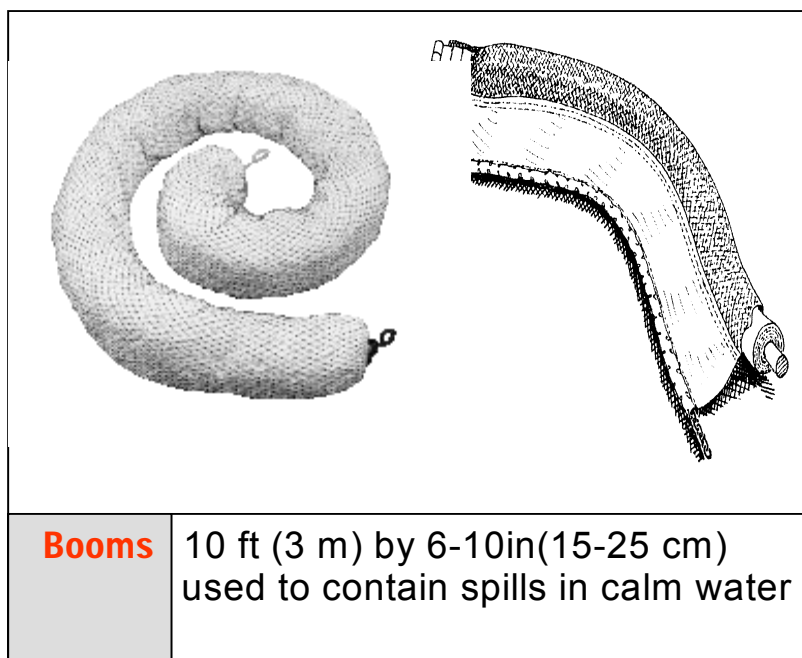
Booming with either absorbent or non-absorbent booms can also be an effective means of containing spills on slow-moving waters and in lakes. Effective containment using conventional booming techniques will be difficult in streams or rivers where currents exceed 0.7 knots (0.4m/s). At these speeds, oil will become entrained in the water flowing under the boom, resulting in significant Losses. Some improvements can be achieved in waters flowing at 1-2 knots (0.5-1 m/s) if the boom is deployed at an angle of less than 90 degrees to the direction of the flow.



Absorbent booms or socks can also be used to provide a barrier to floating oil. These types of booms should be checked regularly to ensure that they do not become saturated with either water or oil, since they will tend to float very low in the water or even sink and release oil downstream.

### Filter Fence:





## SPILLS ON ICE AND SNOW

Oil can remain relatively fresh, i.e, in an unweathered state under snow and ice for several months or more after a spill.

Evaporation rates will still be high when oil is ultimately exposed to the atmosphere, except in very low temperatures. Oil can also move up and down small hills (several metres high) due to the capillary action of the snow.

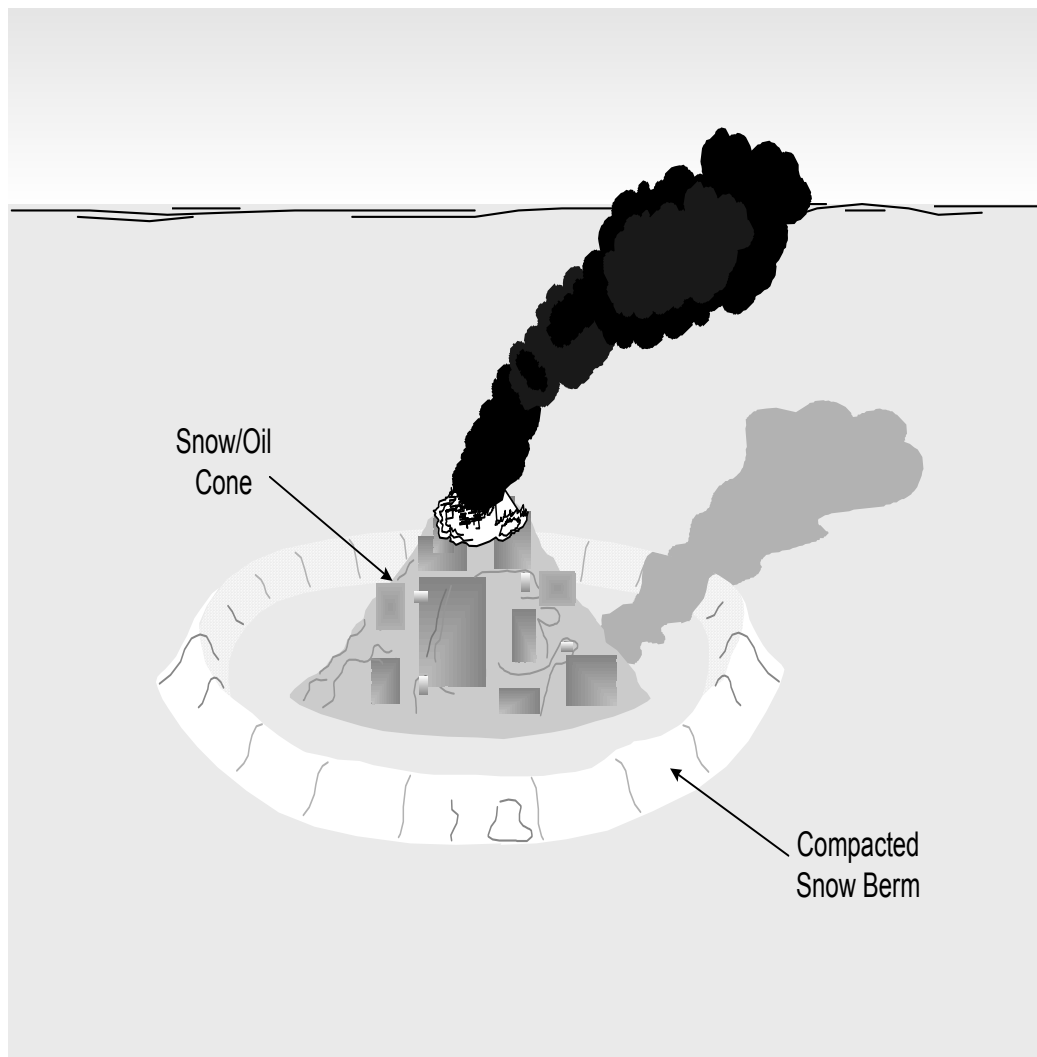
### Containment

Snow and ice can be used to create berms to keep spills from spreading. In frozen rivers, angled slots about 1 m wide or holes can be cut in the ice, where safety permits, to allow possible spill recovery. The oil will rise up into the openings where it will concentrate and be available for recovery using skimmers or pumps.

### Disposal

Oil spills in snow and ice can sometimes be burned if the spill can be isolated from the source. Although there is generally a reduced fire hazard, due attention to safety of operations is still required. If burning is not effective, recovered contaminated material will be collected and transported to a designated disposal/treatment facility.

### Burning Snow Cone:



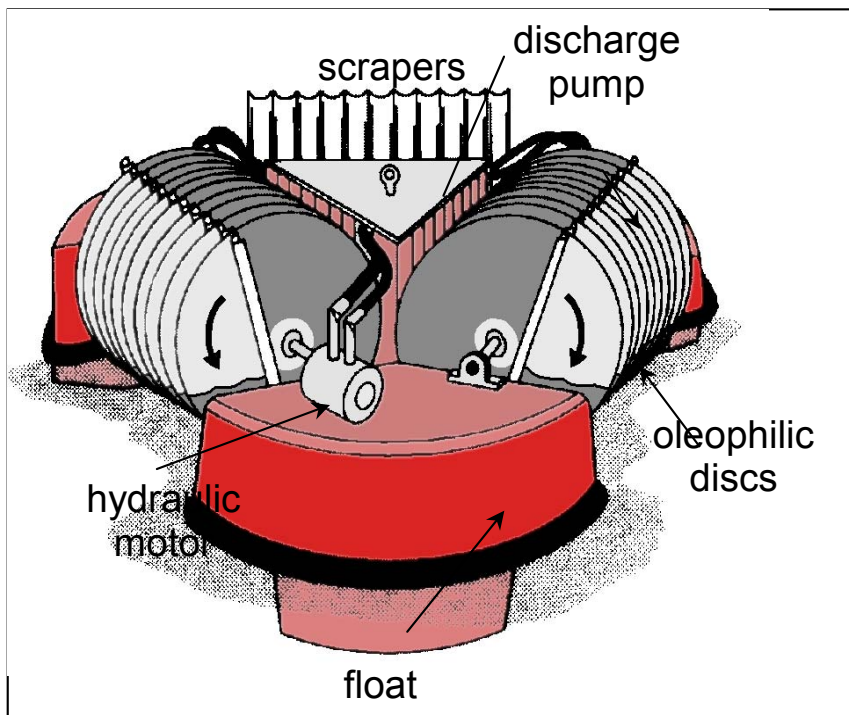
When large volumes of oil have been contained either through natural or mechanical containment, it will be necessary to remove or recover the accumulated oil. This will generally occur in excavated trenches or adjacent to berms or natural barriers and occasionally in slow running streams or quiet ponds.

Vacuum trucks are not feasible at fly-in sites, but would be suitable for sites served by a seasonal or winter road and where a large volume of oil has pooled that is generally free of water. The truck must be positioned at a safe distance so that there is no possibility of fire or explosion.

Oleophilic devices, such as disc or drum skimmers, can selectively recover oil in water, and are better suited to applications where the oil has formed a distinct layer on top of quiet water. Accumulations adjacent to an inverted weir are an example. A vacuum truck would be largely ineffective in this instance, since it would recover large amounts of water, particularly in a thin layer of oil with water flowing through the pipe or culvert.

When using disc or drum skimmers, ensure that small items of debris are periodically removed from the scrapers to ensure their efficient operation.

### Disc Skimmer



## APPENDIX TO SPILL CONTINGENCY PLAN – NANUQ NORTH PROPERTY

### MATERIAL SAFETY DATA SHEETS (MSDS)

*(See MSDS on CD accompanying original applications  
for a land-use permit and water licence).  
Should additional products be added,  
a new CD will be issued.)*



## MATERIAL SAFETY DATA SHEETS

### FUELS, FUEL ADDITIVES, OIL Nanuq Project – Spring-Summer 2011<sup>5</sup> Programme

*(See MSDS on accompanying CD)*

MSDS-ATF Type F Oil-Petro-Canada-2010-CURRENT-Added to List  
MSDS-Bombardier BRP XP-S Mineral 2-Stroke Injection Oil-413803000-Unregulated  
MSDS-ChainOil-Light-Shell-2008-CURRENT  
MSDS-Diesel Fuel Oil Conditioner-Kleen-Flo-2009-CURRENT  
MSDS-DIESEL Fuel-PetroCan-2009-CURRENT  
MSDS-Duron 10W-30 Heavy Duty EngineOil-PetroCan-2009-CURRENT  
MSDS-Duron 15W-40 Heavy Duty EngineOil-PetroCan-2010-CURRENT  
MSDS-HYDREX\_MV\_22\_36\_60-PetroCan-2009-CURRENT  
MSDS-HYDREX\_MV\_Arctic\_15-PetroCan-2008-CURRENT  
MSDS-Jet A1-Shell-2008-CURRENT  
MSDS-Jet A-A1-PetroCan-2009-CURRENT  
MSDS-Jet B-PetroCan-2009-CURRENT  
MSDS-Kleen Start-Starting Fluid-Kleen-Flo-2010-CURRENT  
MSDS-Mobil Jet Oil 254-Esso-2008-CURRENT  
MSDS-Mobil Jet Oil II-Esso-2007-CURRENT  
MSDS-Petrol Unleaded-Shell-2010-CURRENT  
MSDS-Petrol-Unleaded-PetroCan-2010-CURRENT  
MSDS-Polaris 2T VES Synthetic Oil-2007-CURRENT  
MSDS-Polaris Prem. Blue Semi-Synthetic Blend Oil-2007-CURRENT  
MSDS-Propane-SuperiorPropane-2011-CURRENT-Updated  
MSDS-Quaker State SAE 30 Motor Oil-2008-CURRENT  
MSDS-Quick Start Ether Cylinders-2011-CURRENT-Added to List  
MSDS-Rotella T 10W-30-CJ-4-Engine Oil-Shell-2009-CURRENT  
MSDS-Rotella T 15W-40-CJ-4-Engine Oil-Shell-2009-CURRENT  
MSDS-Snowmobile Motor Oil-PetroCan-2009-CURRENT  
MSDS-Delo LE 400 Synthetic SAE 5W40-2008-CURRENT-Added to List



## **DRILLING MUDS, GREASES, LUBRICANTS Nanuq Project – Spring-Summer 2011<sup>5</sup> Programme**

***(See MSDS on accompanying CD)***

MSDS-Aeroshell Fluid 41-Aircraft-2009-CURRENT  
MSDS-Aeroshell Grease 7-Aircraft-2008-CURRENT  
MSDS-Aeroshell Grease 22-Aircraft-2008-CURRENT  
MSDS-API ModifThreadCompound-PetroCan-2009-CURRENT  
MSDS-Brazilian WW Gum Rosin-2008-CURRENT-Added to List  
MSDS-DD2000-MATEX-Control Chemical-2011-CURRENT-Updated  
MSDS-Drill Rod Grease-PetroCan-2010-CURRENT  
MSDS-Duron Synthetic Oil-Petro-Canada-2010-CURRENT-Added to List  
MSDS-Enviro Grease- Drill Rod Grease-Poly-Drill-2008-CURRENT  
MSDS-EP1\_EP2-Precision-General-Purpose-2010-CURRENT-Added to List  
MSDS-Grease OG-0-1-2-PetroCan-2010-CURRENT  
MSDS-Insulating Cement R-ANH Refractories-2009-CURRENT-Added to List  
MSDS-Lithium Complex Moly 3 or 5-Grease Warehouse-2007-CURRENT  
MSDS-LPS 1 Premium Lubricant-2008-CURRENT  
MSDS-LPS 2 Aerosol-PetrolDistillate-2009-CURRENT  
MSDS-PD1300-Poly-Drill-2008-CURRENT  
MSDS-Pure Vis-Mineral Oil Viscosifier-Poly-Drill-2009-CURRENT  
MSDS-Traxon-80W-90-85W-140-PetroCan-2009-CURRENT  
MSDS-Traxon Synthetic 75W-90-PtroCan-2009-CURRENT  
MSDS-WD40-Aerosol-2008-CURRENT  
MSDS-WD40-BulkLiquid-2008-CURRENT  
MSDS-White Lithium Grease-Bulk-2010-CURRENT-Added to List  
MSDS-CSB-Beet Juice Antifreeze-Westway-2007-most CURRENT-Added to List  
MSDS-Rando HDZ Lubricating Oil-Chevron-2008-CURRENT-Added to List  
MSDS-Bio Foam-Diversity Tech-2008-most CURRENT-Added to List  
MSDS-Compro Compressor Fluid 32 68 100 150-Petro-Canada-2009-CURRENT-Added to List  
MSDS-Alcomer 120L OS-Additive-Diversity Tech-2008-most CURRENT-Added to List  
MSDS-Precision XL 3 Moly Arctic-Petro-Canada-2009-CURRENT-Added to List  
MSDS-Rod Ease-Miswaco-2009-CURRENT-Added to List



## **MISCELLANEOUS CHEMICALS** **Nanuq Project – Spring-Summer 2011<sup>5</sup> Programme**

***(See MSDS on accompanying CD)***

MSDS-ABC Fire Extinguisher-PyroChem-2011-CURRENT-Updated  
MSDS-Acetylene-Air Liquide-2011-CURRENT-Added to List  
MSDS-Back Off Bear Deterrent--2010-CURRENT  
MSDS-Blueshield Pro Gouging Electrode-Air Liquide-2008-most CURRENT-Added to List  
MSDS-Brake & Elec. Contact Kleen-2009-CURRENT  
MSDS-Calcium Aluminate Cement-Kerneosinc-2010-CURRENT-Added to List  
MSDS-Chevrolet Orange Spray Paint-Seymour Paint-2011-CURRENT-Added to List  
MSDS-Dow Corning 736 Heat-Resistant Sealant-2010-CURRENT  
MSDS-Electro Contact Cleaner-LPS Labs-2008-CURRENT  
MSDS-Gloss Red-Barnes Distribution-Seymour Paint-2007-most CURRENT-Added to List  
MSDS-Gloss White-Barnes Distribution-Seymour Paint-2010-CURRENT-Added to List  
MSDS-Gun Blue-Bushnell-Aug2007-CURRENT  
MSDS High Strength Threadlocker Red Automotive GradeHenkel-2008-CURRENT-Added to List  
MSDS-Kleen-Flo Silicone Gasket Maker-2009-CURRENT  
MSDS-Lacquer Thinner 13-554-Recochem-2007-CURRENT  
MSDS-LaFarge Portland Cement--2008-CURRENT  
MSDS-Lead-Acid-BATTERY-Exide-2008-CURRENT  
MSDS-LePage Prestite Contact Cement-2008-Unregulated  
MSDS-LePage Speed-Set Epoxy Hardener-2008-CURRENT  
MSDS-LePage Speed-Set Epoxy Resin-2008-CURRENT  
MSDS-Liqui-Bac-RML Co-2005-Unregulated  
MSDS-Lock De-Icer-Kleen-Flo-2009-CURRENT-Added to List  
MSDS-LPS A-151 Solvent Degreaser-incl. Aerosol-2010-CURRENT  
MSDS-Marking SPRAY PAINT-RustOLEum-2008-CURRENT  
MSDS-Methyl Ethyl Ketone Solvent-Scienlabs-2008-CURRENT  
MSDS-Methyl Hydrate 13-390-Alcohol Solvent-Recochem-2009-CURRENT  
MSDS-Motomaster Elec. Contact Cleaner-ShraderCanada-2008-CURRENT  
MSDS-Nitrogen-Inert-Undated-CURRENT  
MSDS-Non-Flammable Gas Mixture-Gas Liquide-2010-CURRENT-Added to List  
MSDS-Original Gas Line Anti-Freeze-Kleen-Flo-2009-CURRENT-Added to List  
MSDS-Oxygen (gas liquid)-Various Uses-Air Liquide-2008-CURRENT  
MSDS-Oxygen Medical-Airgas Company-2007-CURRENT  
MSDS-Petro-Canada-Antifreeze-2010-CURRENT-Added to List  
MSDS-PRIST Aviation Glass Cleaner Aerosol-2010-CURRENT  
MSDS-Rad Seal Radiator Stop Leak-Kleen-Flo-2009-CURRENT-Added to List  
MSDS-RTV Red Silicon Sensor-Safe Hi-Temp GasketMaker-LocTite-2008-most CURRENT-Added to List  
MSDS-Snowmobile Antifreeze 50-50 PreMix PG-Polaris-2007-CURRENT



## **MISCELLANEOUS CHEMICALS (cont.)**

MSDS-Winter Universal Gas Line Antifreeze-PetroCan-2010-CURRENT

MSDS-Wurth Brake Cleaner 4L-2009-CURRENT

MSDS-Boss Lubricants Propylene Glycol Antifreeze-2009-CURRENT

MSDS-Univar Propylene Glycol USP/EP-2009-CURRENT