



SPILL CONTINGENCY PLAN

ANIALIK PROJECT NUNAVUT

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1.0 INTRODUCTION

The North Arrow Minerals Inc. Spill Contingency Plan shall be in effect from April 15, 2008. Any future changes and/or amendments will be submitted to the Nunavut Water Board, DIAND and the Kitikmeot Inuit Association.

This Spill Contingency Plan has been specifically prepared for the Anialik Project exploration program. This Plan shall be posted at operational remote camps and drill shacks.

North Arrow Minerals Inc. endeavours to take every reasonable precaution toward ensuring the protection and conservation of the natural environment and the safety and health of all employees and contractors from any potential harmful effects of stored materials and operations.

2.0 FACILITIES

Camp location: 67°23'28"N 111°04'55"W (located on IOL Parcel CO-81)

Fuel cache locations: To Be Determined

3.0 PETROLEUM AND CHEMICAL PRODUCT STORAGE AND INVENTORY

3.1 Remote Location Fuel Inventory, Storage and Handling Procedures

The main fuel cache will be located at the camp. Remote fuel caches may also be established. Typically these remote fuel caches would consist of 19 drums or less of jet fuel and/or diesel, stored in accordance with approved methods of storage of drummed product.

3.2 Petroleum Product Transfer

Manual and automatic pumps (and aviation fuel filters for jet fuel) are used for the transfer of all petroleum products. Smoking, sparks, or open flames are **prohibited** in fuel storage and fuelling areas at all times.

4.0 RISK ASSESSMENT AND MITIGATION OF RISK

4.1 Petroleum Products and Other Fuels

Following, is a list of sources:

- 1) Drummed product: Leaks or ruptures may occur. This includes drums of Jet B, Diesel, Gasoline, Waste Fuel, and Waste Oil.
- 2) Fuel cylinders: Propane, leaks may occur at the valves. All cylinders are secured at all times.
- 3) Vehicles and equipment: Wheeled vehicles and equipment, aircraft (fixed and rotary wing), snowmobiles, generators, pumps. Incidents involving leaking or dripping fuels and oils may occur due to malfunctions, impact damage, and lack of regular maintenance, improper storage, or faulty operation.

Regular inspection and maintenance in accordance with recognized and accepted standard practices at all camps and fuel caches, reduces risks associated with the categories listed above.

Spill response training is provided to all personnel with particular attention to those personnel who handle fuels and other petroleum products. This training will include a presentation, “mock” spill, review of spill kit contents and their use and reporting.

Spill Kits will be located at all camps and drill shacks.

5.0 RESPONDING TO FAILURES AND SPILLS

5.1 Spill Response Contact List

24 Hour Spill Line
(867) 920-8130

DIAND Water Resources Inspector
Baffin Area Kitikmeot Region
Iqaluit, Nunavut Kugluktuk, Nunavut
(867) 975-4289 (867) 9832-4308

Environment Canada
Iqaluit, Nunavut
(867) 975-4644
24 hour pager – (867) 920-5131

Kitikmeot Inuit Association
Phone: (867) 982-3310
Fax: (867) 982-3311

North Arrow Minerals Inc..
Gordon Clarke, President and CEO
Phone 867-873-8483 (during business hours*)

**A private 24Hr contact number will be included in the copy of the plan that is to be kept at the camp facility, however it will not be published in the public version of the plan.*

5.2 Basic Steps — Spill Procedure

In the case of any spill or other environmental emergency, it is necessary to react in the most immediate, safe, and environmentally responsible manner. No spill or incident is so minor that it can be ignored.

The basic steps of the response plan are as follows:

1. Ensure the safety of all persons at all times.
2. Identify and find the spill substance and its source, and, if possible, stop the process or shut off the source.
3. Inform the on-site coordinator or his/her designate at once, so that he/she may take the appropriate actions. Appropriate action includes the notification of the spill to the 24 hour Spill Line and DIAND Water Resource Officer, a copy of the Spill Report form can be found in Appendix I.
4. Contain the spill or environmental hazard, as per its nature as directed in the Spill Contingency Plan (Section 6.3).
5. Implement any necessary cleanup and/or remedial action.

5.3 Basic Steps — Chain of Command

1. *Immediately* notify and report to the 24-Hour Spill Line at (867) 920-8130, the DIAND Water Resources Inspector in Nunavut at (867) 975-4298, and Environment Canada personnel at 867-975-4644.
2. *A Spill Report Form (Appendix I)* is filled out as completely as possible before or after contacting the 24 Hour Spill Line.
3. Notify Gordon Clarke, North Arrow Minerals Inc.. at (867) 873-8483 (during business hours*)
**A private 24Hr contact number will be included in the copy of the plan that is to be kept at the camp facility, however will not be published in the public version of the plan.*

5.4 Other contacts for spill response/assistance and further reporting

Nunavut Water Board	(867) 360-6338
Fisheries and Oceans Canada Habitat Impact Assessment Biologist	(867) 979-8007
Government of Nunavut Department of Environment	(867) 975-5910

6.0 TAKING ACTION

6.1 Before the Fact: Preventative Measures

The following actions illustrate a proactive approach to environmental stewardship. In addition, these actions minimize the potential for spills during fuel handling, transfer and storage:

1. Fuel transfer hoses with cam lock mechanisms are used.
2. Carefully monitor fuel content in the receiving vessel during transfer. Always have additional absorbent pads on hand while transferring fuel.
3. Clean up drips and minor spills immediately.
4. Regularly inspect drums, tanks and hoses for leaks or potential to leak and for proper storage.
5. Create fuel caches in natural depressions that are located a **minimum** of 31 metres from the normal high-water mark of any water body.
6. Train personnel, especially those who will be operators, in proper fuel handling and spill response procedures.

6.2 After the Fact: Mitigative Measures

1. First steps to take when a spill occurs:
 - a) Ensure your own safety and that of others around you, beginning with those nearest to the scene.
 - b) Control danger to human life, if necessary.
 - c) Identify the source of the spill.
 - d) Notify your supervisor, request assistance if needed.
 - e) Assess whether or not the spill can be readily stopped.
 - f) Contain or stop the spill at the source.
2. Secondary steps to take:
 - a) Determine status of the spill event.
 - b) If necessary, pump fuel from a damaged and/or leaking tank or drum into a refuge container.
 - c) Notify the 24-hour Spill Report Line
 - d) Complete and Fax a copy of the Spill Report Form (*Appendix I*).
 - e) Notify permitting authorities.
 - f) If possible, resume cleanup and containment.

6.3 SPILL RESPONSE ACTIONS

DIESEL FUEL, HYDRAULIC OIL, AND LUBRICATING OIL

Take action only if safety permits – stop the source flow if safe to do so and eliminate all ignition sources.
Never smoke when dealing with these types of spills.

On Land

Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.

Remove the spill by using absorbent pads or excavating the soil, gravel or snow.

Remove spill splashed on vegetation using particulate absorbent material.

On Muskeg

Do not deploy personnel and equipment on marsh or vegetation.

Remove pooled oil with sorbent pads and/or skimmer.

Flush with low pressure water to herd oil to collection point.

Burn only in localized areas, e.g., trenches, piles or windrows.

Do not burn if root systems can be damaged (low water table).

Minimize damage caused by equipment and excavation.

On Water

Contain spill as close to release point as possible.

Use containment boom to capture spill for recovery after vapours have dissipated.

Use absorbent pads to capture small spills.

Use skimmer for larger spills.

On Ice and Snow

Build a containment berm around spill using snow.

Remove spill using absorbent pads or particulate sorbent material.

The contaminated ice and snow must be scraped and shovelled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

Storage and Transfer

All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labelled containers. All containers will be stored in a well ventilated area away from incompatible materials.

Disposal

All contaminated material will be transported to an appropriate disposal facility.

6.3 SPILL RESPONSE ACTIONS GASOLINE AND JET B AVIATION FUEL

Take action only if safety permits – stop the source flow if safe to do so and eliminate all ignition sources.
Never smoke when dealing with these types of spills.

On Land

Build a containment berm using soil material or snow and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.

Remove the spill by using absorbent pads or excavating the soil, gravel or snow.

Remove spill splashed on vegetation using particulate absorbent material.

On Muskeg

Do not deploy personnel and equipment on marsh or vegetation.

Remove pooled gasoline or Jet B with sorbent pads and/or skimmer.

Flush with low pressure water to herd oil to collection point.

On advice from regulatory agencies, burn only in localized areas, e.g., trenches, piles or windrows.

Do not burn if root systems can be damaged (low water table).

Minimize damage caused by equipment and excavation.

On Water

Contain spill as close to release point as possible.

Use containment boom to capture spill for recovery after vapours have dissipated.

Use absorbent pads to capture small spills.

Use skimmer for larger spills.

On Ice and Snow

Build a containment berm around spill using snow.

Remove spill using absorbent pads or particulate sorbent material.

The contaminated ice and snow must be scraped and shovelled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

Storage and Transfer

All contaminated water, ice, snow, soil, and clean up supplies will be stored in closed, labelled containers. All containers will be stored in a well ventilated area away from incompatible materials.

Disposal

All contaminated material will be transported to an appropriate disposal facility.

6.3 SPILL RESPONSE ACTIONS PROPANE

Take action only if safety permits. Gases stored in cylinders can explode when ignited.

Keep vehicles away from area.

Never smoke when dealing with these types of spills.

On Land

Do not attempt to contain the propane release.

On Water

Do not attempt to contain the propane release.

On Ice and Snow

Do not attempt to contain the propane release.

General

It is not possible to contain vapours when released.

Water spray can be used to knock down vapours if there is no chance of ignition.

Small fires can be extinguished with dry chemical or CO₂.

Personnel should withdraw immediately from area unless a small leak is stopped immediately after it has been detected.

If tanks are damaged, gas should be allowed to disperse and no recovery attempt should be made.

Personnel should avoid touching release point on containers since frost forms very rapidly.

Keep away from tank ends.

Storage and Transfer

It is not possible to contain vapours when released.

Disposal

All contaminated material will be transported to an appropriate disposal facility.

7.0 SPILL EQUIPMENT

Complete spill kits are kept on hand at all camps, fuel caches and drill shacks.

In addition, at least one empty fuel drum will be located at each fuel cache in the event of damaged or leaking drums. Extra absorbent pads will be kept with the helicopter, drill and any area where re-fuelling, transferring and/or handling is done.

8.0 TRAINING AND PRACTICE DRILLS

8.1 Training

All employees and contractors will be familiar with the spill response resources at hand, this Contingency Plan, and will also be trained for initial spill response methods. Involvement of other employees may be required, from time to time. Annual refreshers will be conducted to review the procedures within this plan.

Appendix I

NU Spill Report Form and Instructions

Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to spills@gov.nt.ca. 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.

A. Report Date/Time	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. Please do not fill in the Report Number: the spill line will assign a number after the spill is reported.
B. Occurrence Date/Time	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).
C. Land Use Permit Number /Water Licence Number	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.
D. Geographic Place Name	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. You must include the geographic coordinates (Refer to Section E).
E. Geographic Coordinates	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.
F. Responsible Party Or Vessel Name	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. 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.
G. Contractor involved?	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.
H. Product Spilled	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)
I. Spill Source	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 ²)
J. Factors Affecting Spill	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 equipment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	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. Please number the pages to ensure that recipients can be certain that they received all pertinent documents. If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	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.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	Leave Blank. This box is for the Spill Line's use only.



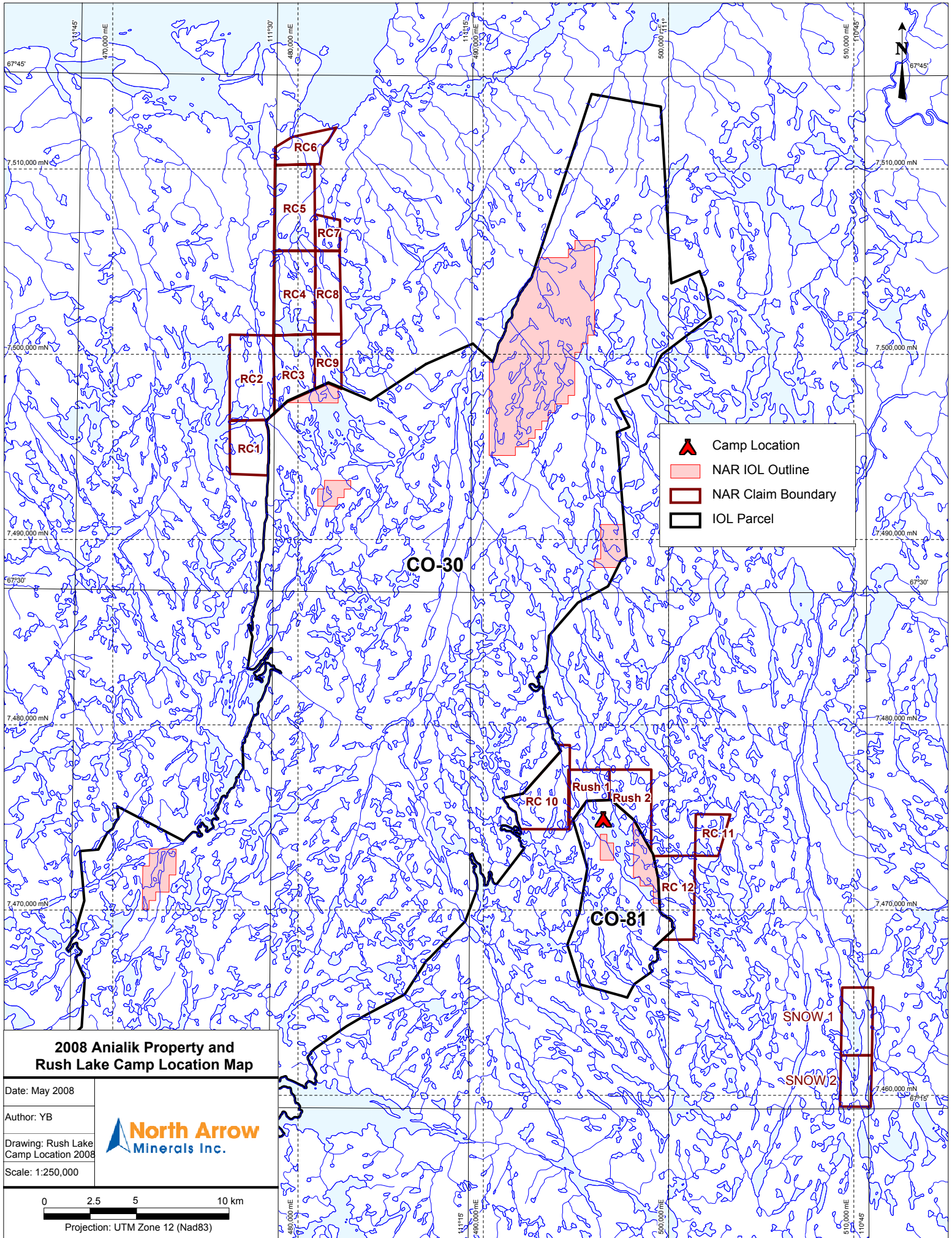
NUNAVUT SPILL REPORT (Oil, Gas, Hazardous Chemicals or other Materials)
NUNAVUT KUVIHIMAYMIK UNIUT (Ukhukyuak, Gasiliik, Hivuganaktun Aavughat Aalaatluniit)

24-Hour Report Line Uumiyuituk Unikhiut Hivayaut
Phone/Hivayaut (867) 920-8130
Fax/Kayumiktuk (867) 873-6924

A Report Date and Time Uniutim Ublua Ublukhiutalu		B Date and Time of Spill (if known) Ublua Ublukhiutalu Kuviniim (ilihimayaukpan)		C Original Report Hivulikpak Uniut Update No. _____ Ilihimapkangnik Napa.		Spill Number Kuviniim Napa	
D Location and Map Coordinates (if known) and Direction (if moving) Humiituk Nunayamilu Pakitjutaa (ilihimayaukpan) Humungaulikal (kugluakan)							
E Party Responsible for Spill (Full Name and Address) Kitkuut Kuvipkaiyun (Tamaita Atiin Nunakakviangalu)							
F Product(s) Spilled and Estimated Quantities (provide metric volumes/weights if possible) Hunat Kuviryun Angikilangiitlu (tunilugin kafi kaalanlu/ukumaitlangalu ilihimagungi)							
G Cause of Spill Huuk kiviyyuk							
H Is Spill Terminated? Kuvihuikaa? Yes/Hii No/Imaanak		I If Spill is Continuing, give Estimated Rate Kuvigaanginakan kayumiilanguta ukaguk		J Is Further Spillage Possible? Kuvifakniagungnaghivaa? Yes/Hii No/Imaanak		K Extent of Contaminated Area (in square metres if possible) Angikilanga halumaighimanuim (uuktuut kikagituk miitusni ilihimagungi)	
L Factors Affecting Spill or Recovery (weather conditions, terrain, snow cover, etc.) Huunat Havaluatiimajutin Kuviniimun Halumaghiniimunlu (hilakluknik, nunap kaanga, apuutpalaknik, atlatlu)				M Containment (natural depression, dykes, etc.) Kabitikvia (itighak, maghakviit, alatu)			
N Action, if any, taken or Proposed to Contain, Recover, Clean up or Dispose of Product(s) and Contaminated Materials Hulivin, hufiguvin, Kanuklu Kaatitiniaka, Pifaklugu, Halumaktiklugu Igitugiitluniit Kuvihimayut							
O Do You Require Assistance? No/Imaanak Yes/Hii, describe: Ikayuktauyumaviin? Kaanuk:			P Possible Hazards to Persons, Property or Environment e.g. fire, drinking water, fish or wildlife. Hivuganakniagungnaghivun Inuknun, Tamayanun Avatimunluniit e.g. ikualak, iimiktakvik, ikaluit hugajutinluniit.				
Q Comments and/or Recommendations Ukagiyaan uvvalu/unaluniit Pitkuugaluaktain						FOR SPILL LINE USE ONLY KUVINIIM HIVAYAUTAGINATA ATUKTAGHA Lead Agency Hivulik Havakvik Spill Significance Kuviniim Angingninga Lead Agency Contact and Time Hivulium Havakviim Ukakatigiluagha Humungakanlu Is this file now closed? Una tutkumavia umikpaa?	
Reported By Unikhiukti		Position, Employer, Location Haavanga, Havakvia, Humi			Telephone Hivayaut		
Reported To Unikhiuktuk Kinamun		Position, Employer, Location Haavanga, Havakvia, Humi			Telephone Hivayaut		

Appendix II

Map of Camp Location



Appendix III

Material Safety Data Sheets