Spill Prevention and Response Plan

Roche Bay PLC

January 2011

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List of Appendices

1. Introduction

Roche Bay PLC Spill Prevention and Response Plan (SPRP) will be in effect until June 2016. Any Future amendments will be recorded and posted on the attached record form on page II. The Spill Response Plan will be posted at operational remote sites, any fuel caches, and chemical storage areas will be available at the camp office as well as a spill kit. Roche Bay PLC is committed to the protection and conservation of the natural environment and the safety and health of all employees and contractors as well as the community at large from any potential harmful effects from operations and stored materials.

1.1 Purpose

The SPRP details clear procedures for the storage and handling of toxic materials to reduce the risk if environmental contamination. If accidental release of any hazardous materials should occur, the SPRP outlines clear plans of action.

Spill Response Plan will;

- promote safe use of potentially hazardous materials;
- promote effective and safe recovery of spilled potentially hazardous materials;
- reduce environmental impacts of spills to water or land;
- identify responsibilities and reporting procedures for spill events
- provide site specific information on the facilities and contingencies in place
- provide accessible emergency information to clean-up crews and management and government agencies, and;
- Comply with federal and territorial government regulations and guidelines for the spill contingency plan and notification requirements in the event of a spill.

1.2 Environmental Policy

The present SPRP has been prepared to comply with the commitments made in Roche Bay PLC's environmental policy (see Corporate and Social Responsibility Plan), which are to:

- Assess and minimize potential environmental impacts upon undertaking new tasks;
- Minimize risks to health, safety and the environment by implementing effective controls in facility designs and operations;
- Employ an emergency plan to reduce impacts of unforeseen events;
- Provide a professional environment for staff to plan and direct environmental compliance programs as well as an environment for training and developing environmentally responsible employees;
- Ensure contractors operate according to the companies environmental policies and procedures;
- Comply with all the appropriate environmental laws and regulations
- Verify environmental performance and introduce any required corrective actions;
- Communicate to all employees, government agencies, the public and stakeholders on activities involving health, safety and the environment;
- Reduce the generation of hazardous and non-hazardous waste and see to proper disposal of all waste materials;
- Instate measures to protect and conserve natural resources such as water and energy, and;
- Rehabilitate sites to comply with regulatory standards within an established time frame.

2. Facilities

Roche Bay PLC proposes to operate one camp and approximately twelve drill sites on their mining lease located on the Melville Peninsula, Nunavut. The proposed camp location is to be built on the west side of the mining lease and be supported by the southernmost lake on the property. The camp layout is detailed in Appendix II. Drill sites are to be located on the west side of the property in geologically favorable locations where equipment and/or fuel may be temporarily stored in small remote fuel caches for future use.

Table 1. Roche Bay PLC Camp and Cache Locations.

Camp	Latitude	Longitude
UTM	68811'54" N	85831'13"

2.1 Buildings and Structures at the Camp – *also in the Abandonment and Restoration Plan*

Structures

3-4	14'x16' Sleeper tents
1	14'x16' geology office and logistics/camp office
2	14'x16' Kitchen area tents
1	14'x16' Camp dry
1	12'x14' generator shed
1	14'x16' core processing and cutting tent
2	Outhouse or similar units

Vehicles

2	All Terrain vehicles (quads)
1	Helicopter

Drilling Equipment

1	A5 Diamond Drill plus miscellaneous drill equipment and spares.
20	Casing
50	100 ft Hose lengths
2	NQ Core Barrels
1	Overshot
-	Tools Bits Misc Parts

Water Tanks, Pressure Pump, Mud Pump Baskets

Supply pump and Coil heater

Air Transport Equipment

C130 Hercules

DCH5- Buffalo or similar

Helicopter (A star, Long Ranger, 500, or similar)

2.2 Fuel Storage

All fuels will be stored in 205 litre (45 gal) metal drums. Further details on the fuel storage monitoring program are located in Section 6 of this plan; and outlined in the Fuel Management Plan.

3.0 Petroleum and Chemical Storage and Inventory

All hazardous materials and supplies are to be flown into and out of the project property; a waste manifest is to accompany the movement of all hazardous materials. The hazardous materials to be located on site will consist of the following substances:

- P-50 Diesel,
- Jet A and/or Jet B turbo fuel,
- Gasoline,
- Grease (mechanical lubricant),
- Hydraulic Oil,
- Engine Oil,
- Waste Oil (to be removed from camp for proper disposal)
- Propane,
- Other potentially hazardous materials regarding the safety of the personnel and the environment.

The Material Safety Data Sheet (MSDS) for the hazardous materials to be stored at the camp can be found in ***Appendix V*****.**

3.1 Petroleum Product Transfer

Manuel, electric and engine powered pumps, and relevant filtration devices may be used for the transfer of petroleum products from their storage containers to their end-use fuel tanks.

- Cigarette smoking, sparks, open flames, and any potential ignition sources are prohibited from fuel store and transfer sites at all times.

3.2 Remote Location Fuel Storage and Handling Procedures

Roche Bay PLC may create temporary remote fuel caches during the field season comprising of drums containing Jet Fuel and/or P-50 to support field activities located far from camp. These caches will be temporary and follow CSA approved methods for storage of drummed products. A spill kit will be located at each fuel cache; the helicopters will also carry additional absorbent pads.

4.0 Risk Assessment and Mitigation of Risk

A spill kit will be located at the proposed camp, at all fuel caches and drill shacks. A description of contents is listed in Section 7 of this plan. Following is a list of risk sources:

1) Drummed products holding Jet A, Diesel, Gasoline, Waste Fuel, and Waste Oil may leak or rupture.
2) Fuel Cylinders holding Propane may produce leakage from valves; cylinders are to be secured at all times.
3) Vehicles and equipment including wheeled vehicles/equipment, aircraft (fixed and rotary wing), quads, generators and pumps may have incidents involving leaking or dripping fuel or oil produced from malfunctions, impact damages, lack of periodic maintenance, improper storage, or faulty operation.

Regular inspection and maintenance of camp and remote fuel caches will be carried out to reduce the risks categories listed above. Spill response training will be provided to all personnel with focus on personnel who handle fuels and other petroleum products.

5.0 Response to Failures and Spills

In the case of a spill or environmental emergency, an immediate, safe and environmentally responsible reaction is required. All spills will be reported as no spill or incident is minor enough to be ignored.

5.1 Basic Steps

The basic steps of the response plan are as follows:

1. *Ensure* the safety of all persons at all times.
2. *Identify* and find spill substance and its source, and if possible, stop the process or shut off the source.
3. *Inform* on-site co-coordinator or designate at once so immediate actions may be taken including the notification of the spill to the 24 hour Spill Line and INAC Water Resource Officer. A copy of the Spill Report form can be found in Appendix I.
4. *Contain* the spill or environmental hazard.
5. *Implement* any necessary cleanup/remedial action.

5.2 Chain of Command

1. *Immediately* notify and report to the 24-Hour Spill Line at 867-920-8130 (Fax:867-873-6924), the INAC Water Resources Officer in Nunavut at 867-975-4548, and Environment Canada personnel at 867-975-4644.
2. Before or after contacting the 24 Hour Spill Line a ***Spill Report Form (Appendix I)*** is filled out. A copy of the guidelines for filling out a report form can be found in Appendix III.
3. Notify Andrew Turner, Project Manager, at 780-4395380

5.3 Emergency Contact List – Spill Reporting and Response

Contact	Telephone Number
INAC Water Resource Officer, Iqaluit	867-975-4548
Environment Canada	867-975-4644, 24-hr page 867-766-3737
Government of Nunavut Department of Environment	867-975-5910
DFO (Central and Arctic Branch)	519-383-1813
Roche Bay PLC, Project and Camp Manager	780-439-5380
Michael Dufresne, Apex Geoscience	780-439-5380
Andrew Turner Apex Geoscience	780-439-5380
Yellowknife Fire Department	867-873-2222
Hall Beach RCMP	867-928-0123
Baffin Regional Hospital	867-979-7352
Nunavut Water Board	867-360-6338
Discovery Mining Services	867-820-4600
Qikiqtani Inuit Association	867-975-8400, Toll-free 800-667-2742

6.0 Taking Action

6.1 Preventative Measures

The following actions minimize the potential for spills during fuel handling, transfer and storage:

1. Fuel Transfer hoses with cam lock mechanisms are used
2. Monitor fuel content in receiving vessel during transfer; keeping additional absorbent pads on hand during a transfer of fuel.
3. Clean up drips and minor spills immediately
4. Periodic inspections of drums, tanks and hoses for leaks and proper storage.
5. Create fuel caches in natural depressions located a minimum of 31 metres from the normal high-water mark or any water body.
6. Train personnel with focus on operator personnel, in proper fuel handling and spill response procedures.

Roche Bay Plc will support the following principles for spill prevention:

- Provide up to date MSDS for all hazardous materials;
- Periodic and on-site recorded inspections of fuel/chemical storage areas;
- Provide training on handling hazardous materials and cleaning spills in accordance to approved procedures;
- Encourage personnel to take reasonable measures to prevent spills;
- Keep drums/containers sealed or closed when not in use;
- Keep storage areas secure from unauthorized access;
- Segregate incompatible materials;
- Ensure chemical storage areas are protected from weather and physical damage, and;
- Provide spill response materials at storage areas.

6.1.1 Responsibilities during Transport

Shipper:

- Complies with proper loading, restraint, containment and documentation, in accordance with TDG guidelines
- Ensures goods are classified and labeled properly.
- Ensure proper communication with the carrier
- Ensures safety at all times

Carrier:

- Will supervise and ensure proper loading, restraint, containment and documentation complying with all TDG regulations
- Ensure proper volumes for transport and maintains/replaces safety marks; placards if necessary
- Check and deliver TDG manifest to receiver
- Ensure safety of all personnel and equipment

Receiver:

- Supervises unloading procedures
- Complies with TDG guidelines
- Ensure safety of containment facilities
- Maintain all pumps and the loading/unloading of equipment on site

- Provide onsite emergency communications (radio, telephone)
- Completes regular site inspection of storage facilities
- Records all shipment manifests
- Keeps on site inventory of all dangerous goods
- Maintains safety procedures at all times.

On-site Coordinator

- Supervise and organize spill containment equipment and personnel
- Reports to internal and external parties
- Ensures availability of proper safety equipment
- Notifies personnel of current hazards
- Will provide training for safety and materials handling
- Maintains proper safety procedures at all times
- Must be compliant with all TDG guidelines

6.2 Preventative Measures

1. First steps to take when a spill occurs:
   - Ensure your own safety and the safety of others around you
   - Control danger to human life, if necessary.
   - Identify source of the spill
   - Notify supervisor and request assistance if needed
   - Assess if the spill can be readily stopped
   - Contain or stop the spill at the source

2. Secondary steps to take:
   - Determine status of the spill event
   - If necessary, pump fuel from a damaged or leaking tank or drum into a refuge container
   - Notify the 24-hour Spill Report Line
   - Complete and Fax a copy of the Spill Repost Form (Appendix I).
   - Notify permitting authorities
   - 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 the safe to do so; eliminate all ignition sources. **NEVER SMOKE** when dealing with these types of spills.

On Land
After all vapours have dissipated , build a containment berm using soil or snow and place a plastic tarp at the foot of the berm for easy capture of spill. Use absorbent pads, or excavate the soil, gravel or snow to remove the spill. Use particulate to remove spill splashed on vegetation. Contact regulatory agencies for approval before any removal of soil, gravel, or vegetation.

On Muskeg
Do not deploy personnel or equipment on marsh or vegetation. Minimize the damage caused by equipment on marsh or vegetation; Flush with low pressure water to move oil into a collection point; remove pooled oil with sorbent pads and/or a skimmer. Burn only in localized areas (trenches, piles or windrows), but do not burn if root systems can be damaged (low water table).

On water
Contain spill as close to release point as possible; after vapours have dissipated, use containment boom to capture spill for recovery. Use absorbent pads to capture small spills and skimmers for larger spills.

On Ice and Snow
Using snow, build a containment berm around the spill and remove the spill with absorbent pads or particulate sorbent material. Contaminated snow and ice must be scraped and shoveled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

Storage and Transfer
All contaminated water, ice, snow, soil and supplies used for clean-up will be stored in closed labeled containers kept in a well ventilated area away from any incompatible materials.

Disposal
Contaminated material will be sent to an approved facility. The movement of hazardous wastes will be monitored by the DOE, and tracked with a Waste Manifest to be present during all movements and transfers.

6.4 Spill Response Actions

GASOLINE AND JET B AVIATION FUEL

Take action, only if safety permits – stop the source flow if the safe to do so; eliminate all ignition sources. **NEVER SMOKE** when dealing with these types of spills.

On Land
After all vapours have dissipated , build a containment berm using soil or snow and place a plastic tarp at the foot of the berm for easy capture of spill. Use absorbent pads, or excavate the soil, gravel or snow to remove the spill. Use particulate to remove spill splashed on vegetation. Contact regulatory agencies for approval before any removal of soil, gravel, or vegetation.

On Muskeg
Do not deploy personnel or equipment on marsh or vegetation. Minimize the damage caused by equipment on marsh or vegetation; Flush with low pressure water to move oil into a collection point; remove pooled oil with sorbent pads and/or a skimmer. Burn only in localized areas (trenches, piles or windrows), but do not burn if root systems can be damaged (low water table).

On water
Contain spill as close to release point as possible; after vapours have dissipated, use containment boom to capture spill for recovery. Use absorbent pads to capture small spills and skimmers for larger spills.

On Ice and Snow
Using snow, build a containment berm around the spill and remove the spill with absorbent pads or particulate sorbent material. Contaminated snow and ice must be scraped and shoveled into plastic buckets with lids, 205 litre drums, and/or polypropylene bags.

Storage and Transfer
All contaminated water, ice, snow, soil and supplies used for clean-up will be stored in closed labeled containers kept in a well ventilated area away from any incompatible materials.

Disposal
Contaminated material will be sent to an approved facility. The movement of hazardous wastes will be monitored by the DOE, and tracked with a Waste Manifest to be present during all movements and transfers.

6.3 Spill Response Actions

Propane

Take action, only if safety permits. Gases stored in cylinders can explode when ignited. Keep vehicles away from the 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 no chance of ignitions exists.
Personnel should leave area immediately unless a small leak is stopped immediately after detection.
Personnel should avoid touching release points on containers as frost may form rapidly.
If tanks are damaged do not attempt a recovery and allow gas to disperse: Keep away from tank ends.
Small fires can be extinguished with dry chemical of CO_2.

Storage and Transfer
It is not possible to contain vapours when released.

Disposal
Contaminated material will be sent to an approved facility. The movement of hazardous wastes will be monitored from generators, carriers and receivers by the DOE, and tracked with a Waste Manifest to be present during all movements and transfers.

6.3 Chemical Spills

1) Assess hazard of spilled material; REFER TO THE MSDS SHEETS NOW. Members of the emergency response team who are susceptible in certain situations should be replaced with alternatives (i.e. asthmatics where fumes or airborne particles are evident).
2) Assemble necessary safety equipment before responding to a spill (i.e. protective latex or other gloves, goggles or safety glasses, masks or breathers, etc.).
3) Apply absorbents to soak up liquids.
4) Solid chemicals such as dusts or powders should be covered with plastic sheeting, to prevent disbursement of the substance by wind or curious animals.
5) Neutralize acids or caustics. Place spilled material and contaminated clean-up supplies in empty refuge drum, seal for disposal.
6) Contact the 24-hr Spill Line. Continue through steps in section 5.

7.0 Spill Equipment

Roche Bay PLC will install fire extinguishers in all buildings, at helicopter pads, the refueling area and other places where flammable substances are stored or handled. Spill kits are to be located at fuel caches, fueling stations, and other locations where hazardous spills may occur.

7.1 Spill Kits

Spill kits will be in bright blue or yellow 200L containers and will include:

- Basic protective equipment such as goggles and latex gloves,
- Absorbent materials such as pads, pillows, socks and franular substances
- Large 36”x52” lettered plastic bags for containing contaminated sorbent materials
- 50 Sonic bonded pads 17”x19”x3/8”
- 4 Socks 4’x3” dia
- 1 SPHAG Sorb ¾ cubic ft.
- 1 Plug-it seal compound 500 ml
- 1 pair Nitile gloves Large
- 2 pillows 18”x18”

Also on-site

- 2 Rolls of absorbent matting 38”x144’
- 2 Packs (100’s) of Enviro matting 16”x20”
- 4 Shovels (min)
- 6 (min) Empty 45 gal. drums for storing contaminated soil for disposal.

Spill Kits are located at:

- Camp fuel cache
- Helicopter/fixed wing fuel cache
- Drilling fuel cache
- Generator Shack
- Active drill sites

Additional sorbent materials are located in the storage shelter and at the drillers’ storage and repair tent. Containment booms and extra insta-berms for use in a response to a spill will also be located in the storage shelter on camp.

A checklist of the required items for each spill kit and the equipment storage area will be provided. The list will reviewed when new chemicals are added or an item is taken: any deficiencies will be remedied immediately. MSDS for all chemicals present in the vicinity of the spill kit will available near the kit locations and will be periodically updated. The expiry dates for all the chemicals on the site will be on the MSDS and those chemical about to expire will be replaced. (Sample MSDS on Appendix IV).

8.0 Training

The site manger will ensure the effectiveness of the Spill Prevention and Response Plan (SPRP) by ensuring the following:

- Ensure all staff and contractors' are given appropriate required training based on evaluating their training needs for spill prevention and spill clean-up;
- Complete detailed annual review and update of the SPRP;
- Updated versions of the SPRP will be distributed to on-site personnel and all relevant agencies, organizations and selected external responders;
- Update new and changed emergency communications as soon as they become available;
- Keep a formal record of distribution and amendments of the SPRP;
- Make certain emergency spill response exercises and inspections occur;
- Use results of inspections to improve spill response practices, and;
- Complete annual internal audits of the EMS, including SPRP

On-site Personnel

A designated Emergency Response Team (ERT) made up of on-site personnel will be established. Roche Bay PLC will make certain that the ERT present at all times and are trained with the emergency spill response resources; Roche Bay PLC will make certain that the ERT team are aware with the resource locations and have up to date training methodologies.

Training will include the following:

- Review of the responsibilities of ERT members and a review of the spill response plan;
- Location of fuel and chemical storages;
- Use of on and off-site spill response equipment training;
- Up-to-date emergency contact lists;
- Causes and possible effects of spills, and;

All personnel and contractors will undergo an orientation and training program on initial spill response procedures and be familiar with the spill reporting requirements. Fuel handling personnel will receive training in safe operation of the facilities, spill prevention techniques and initial spill response. The Site Manager will keep track employees training.

Contractors

Where relevant, contractors will be required to have WHMIS, TDG and OSHA training. All contractors will complete site-specific health and safety training.

Practice Drills

One practice drill will be held per season to practice emergency response skills and evaluate areas where more practice is needed.

Appendix I

Spill Report Form

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	☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME		

C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN
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 EQUIPMENT
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 ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC

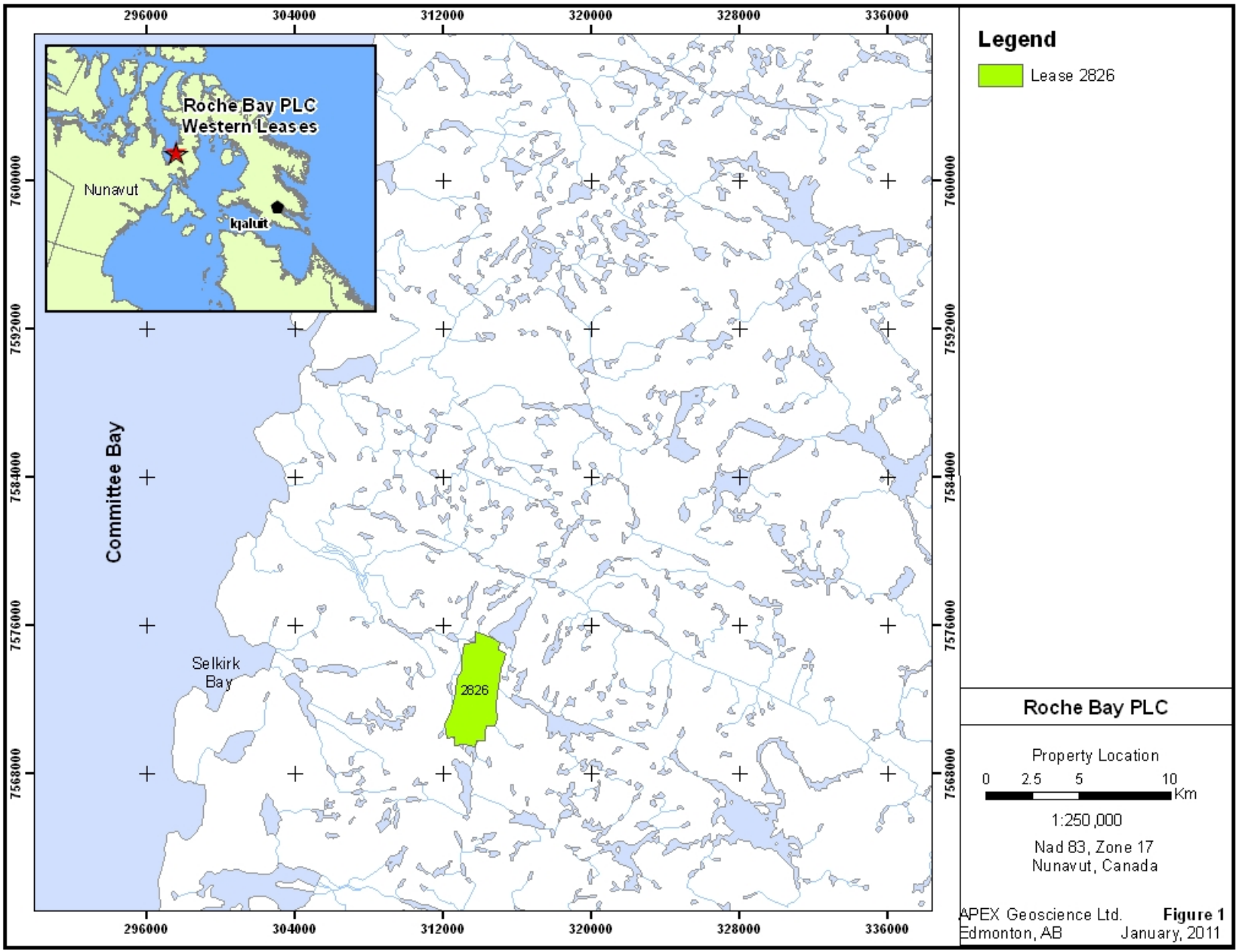
SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN

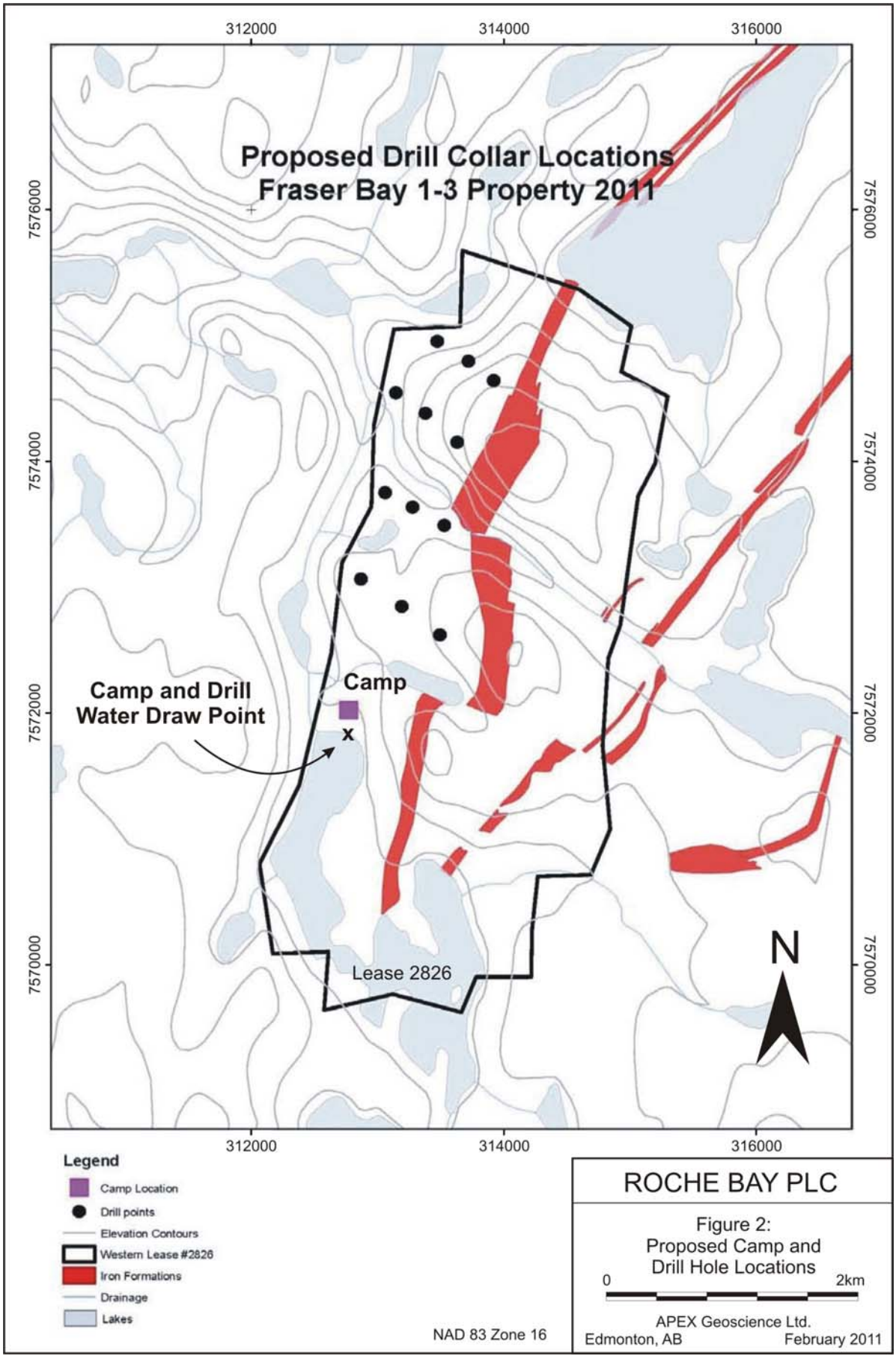
FILE STATUS ☐ OPEN ☐ CLOSED

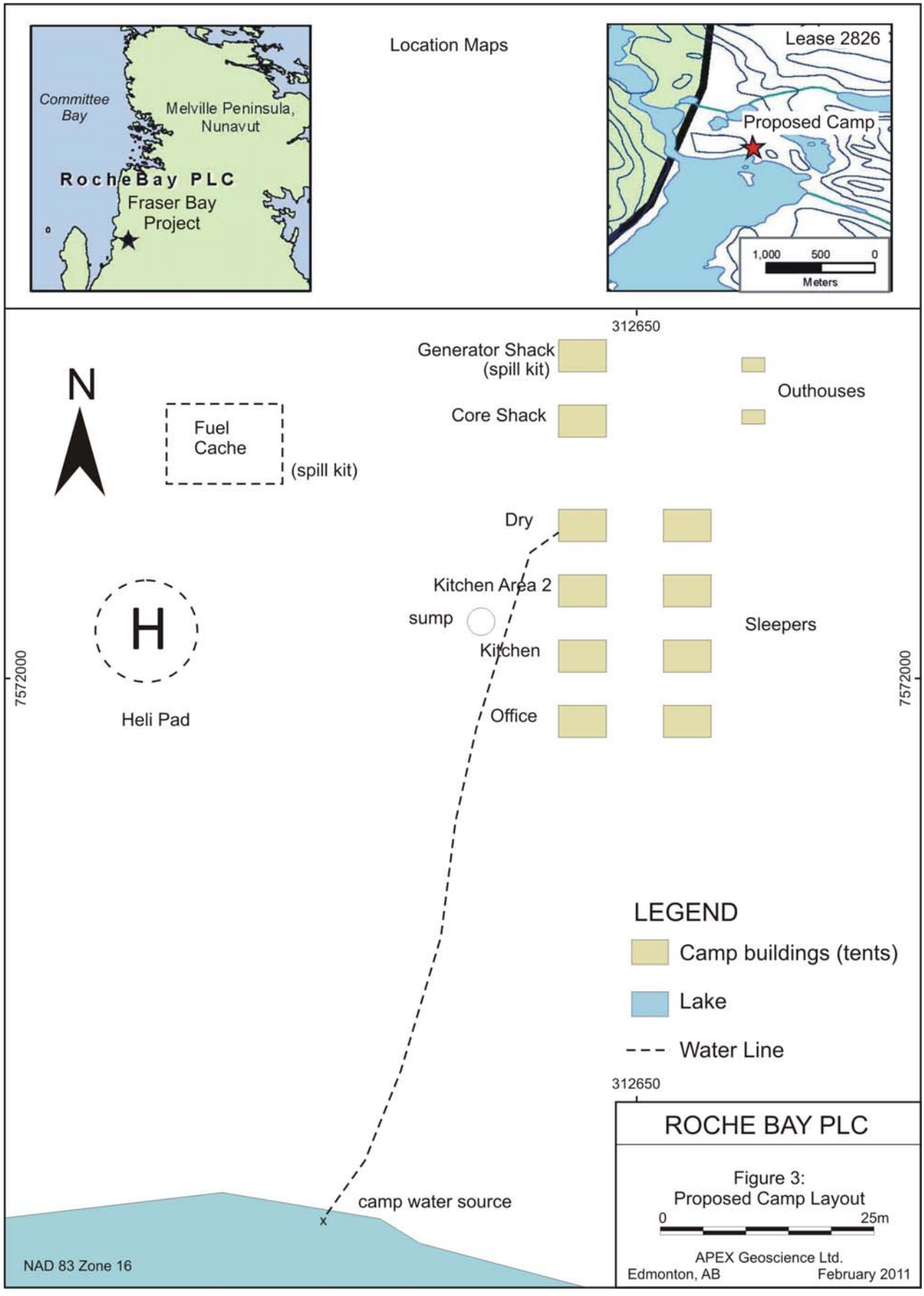
AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

Appendix II

Maps and Figures


296000
304000
312000
320000
328000
336000
7600000
7592000
7584000
7576000
7568000
Roche Bay PLC
Western Leases
Nunavut
Iqaluit
Committee Bay
Selkirk
Bay
2826
Legend
Lease 2826
Roche Bay PLC
Property Location
0 2.5 5 10
Km
1:250,000
Nad 83, Zone 17
Nunavut, Canada
APEX Geoscience Ltd.
Edmonton, AB
Figure 1
January, 2011


Proposed Drill Collar Locations
Fraser Bay 1-3 Property 2011
312000
314000
316000
7576000
7574000
7572000
7570000
Camp and Drill
Water Draw Point
Camp
x
Lease 2826
N
Legend
Camp Location
Drill points
Elevation Contours
Western Lease #2826
Iron Formations
Drainage
Lakes
NAD 83 Zone 16
ROCHE BAY PLC
Figure 2:
Proposed Camp and
Drill Hole Locations
0
2km
APEX Geoscience Ltd.
Edmonton, AB
February 2011


Location Maps
Committee Bay
Melville Peninsula, Nunavut
RocheBay PLC
Fraser Bay Project
Lease 2826
Proposed Camp
1,000 500 0
Meters
312650
Generator Shack (spill kit)
Outhouses
Core Shack
N
Fuel Cache
(spill kit)
Dry
Kitchen Area 2
sump
Sleepers
Kitchen
H
Office
7572000
7572000
Heli Pad
LEGEND
Camp buildings (tents)
Lake
Water Line
312650
ROCHE BAY PLC
Figure 3:
Proposed Camp Layout
0 25m
camp water source
x
NAD 83 Zone 16
APEX Geoscience Ltd.
Edmonton, AB
February 2011

Appendix III

Completing the Spill Report Form

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 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.
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**.

Appendix IV

Daily Fuel Inspection Record

Daily Fuel Inspection Record

Date	Main Fuel Cache				Main Generator Shed			Water Pump			Refueling Station			Sleep Tents			Comments
	Bungs and Rims	Corrosion	Spill Kit/Fire extinguisher	Signs	Inst-berm	Hoses/Values Fittings	Spill Kit/Fire extinguisher	Inst-berm	Hoses/Values Fittings	Spill Kit/Fire extinguisher	Inst-berm	Hoses/Values Fittings	Spill Kit/Fire extinguisher	Inst-berm	Hoses/Values Fittings	Spill Kit/Fire extinguisher	

Appendix V

MSDS

Material Safety Data Sheet

JET B AVIATION TURBINE FUEL

1 . Product and company identification

Product name : JET B AVIATION TURBINE FUEL

Synonym : Jet B; Jet B DI; JP-4; Jet F-40; NATO F-40; Turbine Fuel, Aviation, Wide Cut Type (Can/CGSB-3.22).

Code : W219, SAP: 150, 151, 152

Material uses : Used as aviation turbine fuel. May contain a fuel system icing inhibitor.

Manufacturer : PETRO-CANADA
P.O. Box 2844
150 – 6th Avenue South-West
Calgary, Alberta
T2P 3E3

In case of emergency : Petro-Canada: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state : Clear liquid.

Odour : Gasoline like.

WHMIS (Canada) :

Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : DANGER!

EXTREMELY FLAMMABLE LIQUID AND VAPOUR. FLAMMABLE. VAPOUR MAY CAUSE FLASH FIRE. CAUSES SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA.

Extremely flammable liquid. Irritating to skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure. Contains material which may cause birth defects, based on animal data. Avoid exposure during pregnancy. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Ingestion : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.

Skin : Irritating to skin.

Eyes : May cause eye irritation.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

2 . Hazards identification

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : Contains material which may cause birth defects, based on animal data.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Complex mixture of petroleum hydrocarbons (C6-C14)	64741-41-9	60 - 100
Benzene	71-43-2	0.1 - 0.5
Fuel System Icing Inhibitor (FSII) (if added**): (Diethylene Glycol Monomethyl Ether)	111-77-3	0.1 - 0.15
Anti-static, antioxidant, corrosion inhibitor and metal deactivator additives.	Not applicable	< 0.1

** Please note that Jet B DI, JP-4, Jet F-40 and NATO F-40 all contain Fuel System Icing Inhibitor (FSII). corrosion inhibitor

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Flammable liquid (NFPA).

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.

5 . Fire-fighting measures

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Benzene	**ACGIH TLV (United States). Absorbed through skin.** TWA: 0.5 ppm 8 hour(s). STEL: 2.5 ppm 15 minute(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: polyvinyl alcohol (PVA), Viton. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Clear liquid.

Flash point : Closed cup: -31°C (-23.8°F) [NFPA]

Auto-ignition temperature : 240°C (464°F) [NFPA]

Flammable limits : Lower: 1.3% [NFPA]
Upper: 8% [NFPA]

Colour : Clear and colourless.

Odour : Gasoline like.

Odour threshold : Not available.

pH : Not available.

Boiling/condensation point : 50 to 270°C (122 to 518°F)

Melting/freezing point : Not available.

Relative density : 0.75 to 0.8 kg/L @ 15°C (59°F)

Vapour pressure : 21.1 kPa (158 mm Hg) @ 37.8°C (100°F)

Vapour density : 3.5 [Air = 1]

Volatility : Not available.

Evaporation rate : Not available.

Viscosity : Not available.

Pour point : Freezing point: <-51ºC (<-60ºF) for all types of Jet B including F40

Solubility : Insoluble in water. Partially miscible in some alcohols. Miscible with other petroleum solvents.

10 . Stability and reactivity

Chemical stability : The product is stable.

Hazardous polymerisation : Under normal conditions of storage and use, hazardous polymerisation will not occur.

Materials to avoid : Reactive with oxidising agents, diborane and halogen compounds.

Hazardous decomposition products : May release COx, NOx, SOx, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Complex mixture of petroleum hydrocarbons (C6-C14)	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Diethylene Glycol Monomethyl Ether	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	4000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>50000 mg/m³	4 hours
Benzene	LD50 Dermal	Rabbit	>9400 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation Vapour	Rat	13200 ppm	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

11 . Toxicological information

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Complex mixture of petroleum hydrocarbons (C6-C14)	-	2A	-	-	-	-
Benzene	A1	1	A	+	Proven.	+

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1863	FUEL, AVIATION, TURBINE ENGINE	3	II		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Flammable liquid
Irritating material
Carcinogen

Canada

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

15 . Regulatory information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

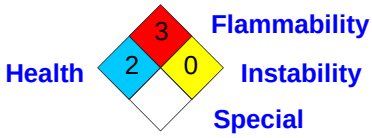
16 . Other information

Label requirements : EXTREMELY FLAMMABLE LIQUID AND VAPOUR. FLAMMABLE. VAPOUR MAY CAUSE FLASH FIRE. CAUSES SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		3
Physical hazards		0
Personal protection		H

National Fire Protection Association (U.S.A.) :



References : Available upon request.
TM/MC Marque de commerce de Petro-Canada - Trademark

Date of printing : **12/7/2009.**

Date of issue : 7 December 2009

Date of previous issue : No previous validation.

Responsible name : **Product Safety - DSR**

Indicates information that has changed from previously issued version.

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

UNITED 923

MATERIAL SAFETY DATA SHEET

320 37th Avenue, St. Charles, Illinois 60174 • 214 Dolomite Drive, Downsview, Ontario M3J2N2
www.unitedlabsinc.com
To Reorder Call: 800-323-2594

1. PRODUCT AND COMPANY IDENTIFICATION

FOR MEDICAL AND TRANSPORTATION EMERGENCIES
24 Hour INFOTRAC (US and CANADA): **800-535-5053**

PRODUCT NAME	USE/DESCRIPTION	REVISION DATE
UNITED 923 HYDRASLIK SAE 10W	Hydraulic Oil Premium Grade	May 13, 2008

HEALTH (0 = Maximum Safety) **1**

Always follow Label Directions and Cautions.

4 Extreme **3** High **2** Moderate **1** Slight **0** Minimal

See Hazards Identification Section of this MSDS for more detailed information.

FLAMMABILITY (0 = Maximum Safety) **1**

Susceptibility of Material to Burning.

4 Extremely flammable.
3 Ignites at normal temperature.
2 Ignites when moderately heated.
1 Must be preheated to burn.
0 Will not burn.

REACTIVITY (0 = Maximum Safety) **0**

Susceptible to Release of Energy.

4 May detonate-vacate area if materials are exposed to fire.
3 Strong shock of heat may detonate-use monitors from behind explosion resistant barriers.
2 Violent chemical change possible-use hose stream from distance
1 Unstable if heated-use precaution.
0 Normally stable.

PERSONAL PROTECTION: B

2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS#	%Range	ACGIH (TLV-TWA)	OSHA (PEL-TWA)	LD50 (Species/Route)	LC50 (Species)
Petroleum Hydrocarbon Blend	64742-54-7	30-60	5 mg/m3	5 mg/m3	NE	NE
Petroleum Hydrocarbon Blend	64742-57-0	30-60	5 mg/m3	5 mg/m3	NE	NE
Petroleum Hydrocarbon Blend	64742-57-0	30-60	5 mg/m3	5 mg/m3	NE	NE
Zinc dialkyldithiophosphate	68649-42-3	< 1	NE	NE	NE	NE

3. HAZARDS IDENTIFICATION

Eyes: May result in mild eye irritation.
Skin: Prolonged or repeated contact may result in skin irritation.
Inhalation: Inhalation of high vapor concentrations at elevated temperatures, may result in respiratory irritation.
Ingestion: May result in gastrointestinal tract irritation.

4. FIRST AID MEASURES

Eyes: Flush with plenty of water for at least 15 minutes while holding eyelids open. If irritation persists, call a physician or poison control center.
Skin: Wash with soap and water. If irritation persists, call a physician or poison control center.
Inhalation: Remove to fresh air. Apply CPR if needed. If irration persists, call a physician or posion control center.
If Swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center.

5. FIRE FIGHTING MEASURES

Flash Point (TCC) : >200°F/>93°C **Explosive Limits:** Lower (LEL): ND Upper (UEL): ND
Flame Projection (Aerosol): NA
Hazardous Products of Combustion: When strongly heated, as in a fire, this product may produce oxides of carbon, phosphorous, sulfur, hydrogen sulfide and chlorinated hydrocarbons.
Fire and Explosion Hazards: Avoid contact with strong oxidants and acids, heat, sparks and flame.
Extinguishing Media: Carbon dioxide, Dry chemical.
Fire Fighting Instructions: Wear self-contained breathing apparatus w/full protective clothing. Containers should be cooled with water to prevent vapor pressure build up. Burning product may float on water floods. Prevent runoff from entering sewers, streams or public water courses.

6. ACCIDENTAL RELEASE MEASURES

Small Spills: Soak up with an inert absorbent, such as clay or vermiculite and place in designated disposal container. Flush area well with water.
Large Spills: Prevent entry into sewers or waterways by diking. Soak up with an inert absorbent, such as clay or vermiculite and place in designated disposal container. Flush area well with water.

7. HANDLING AND STORAGE

Store in a cool, dry area away from heat, sparks, and flame. Keep containers closed. Avoid prolonged exposure to vapors and mists. Keep out of reach of children. Wash face and hands with soap and water after using this product. Launder contaminated clothing before reusing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eyes: Safety glasses recommended.
Skin: Chemical resistant gloves recommended.
Respiratory: None required if good ventilation is maintained. If TLV is exceeded, use NIOSH/MSHA approved respirator.
Engineering Controls: Provide adequate mechanical ventilation and local exhaust is generally adequate.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: >400°F/204°C **Specific Gravity** 0.83-0.90 (H2O=1) **Vapor Pressure:** ND **Melting Point:** ND
Vapor Density: ND **Evaporation Rate:** Slower **Solubility in Water:** Negligible **pH:** NA
Appearance and Odor: Red liquid with mild odor.

10. STABILITY AND REACTIVITY

Hazardous Polymerization: Will not occur.
Hazardous Decomposition: When strongly heated, as in a fire, this product may produce oxides of carbon, phosphorous, sulfur, hydrogen sulfide and chlorinated hydrocarbons.
Chemical Stability: Stable
Incompatibility: Avoid strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity (NTP/IARC/OSHA): None
California Proposition 65: Does this product contain chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm? None

12. ECOLOGICAL INFORMATION

ND

13. DISPOSAL CONSIDERATIONS

Consult your local, state, and federal regulations for proper disposal guidelines. Disposal regulations may be different for each state and/or locality.

14. TRANSPORT INFORMATION

DOT: Available upon request
TDG: Available upon request
UN: Availabale upon request

15. REGULATORY INFORMATION

VOC(Volatile Organic Compounds): None
TSCA (Toxic Substances Control Act): Listed
SARA Title III Section 302 EHS: ND
SARA Title III Section 311/312: ND
SARA Title III Section 313 Toxic Chemicals: Zinc dialkyldithiophosphate CAS# 68649-42-3 <1.0% (trace amount)
WHMIS Classification:
This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations/ WHMIS) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Read and follow all label directions and precautions before using this product. These products are intended for industrial and institutional use only. NOT FOR HOUSEHOLD USE OR RESALE. KEEP OUT OF REACH OF CHILDREN.

MATERIAL SAFETY DATA SHEET

SECTION I: IDENTIFICATION OF PRODUCT

COMPANY:	**Diversity Technologies Corp.**	DATE:	Dec. 9, 2008
	8750-53 Ave.	PHONE:	780-468-4064
	Edmonton, AB T6E 5G2	FAX:	780-469-1899
PRODUCT NAME:	**LINSEED SOAP**		
PRODUCT USE:	Lubricant.		
CHEMICAL FAMILY:	Not available	CAS#:	Not available

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION:	Not WHMIS controlled.
WORKPLACE HAZARD:	Not applicable

TRANSPORTATION OF DANGEROUS GOODS (TDG)

PROPER SHIPPING NAME:	Not regulated under TDG
TDG CLASSIFICATION:	Not applicable
UN NUMBER (PIN):	Not applicable
PACKING GROUP:	Not applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	CAS NUMBER	LD_{50} Oral-Rat	LC_{50} Inhal-Mouse	ACGIH-TLV
No hazardous ingredients available.					

SECTION III: HEALTH HAZARDS

ROUTE OF ENTRY:	[ ] EYE CONTACT [ ] SKIN [ ] INHALATION [ ] INGESTION
EYE CONTACT:	May cause slight irritation.
SKIN CONTACT:	May cause slight irritation.
INGESTION:	No information available. Not considered toxic based on information available for similar materials.
INHALATION:	Not a likely source of contact during normal use.
CARCINOGENICITY:	No information available.
TERATOGENICITY:	No information available.

REPRODUCTIVE TOXICITY:	No information available.
MUTAGENICITY:	No information available.
SYNERGISTIC PRODUCTS:	No information available.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT:	Wipe away excess. Remove contaminated clothing and wash affected area thoroughly with soap and water. If irritation develops or persists, obtain medical attention.
EYE CONTACT:	Immediately flush with gently flowing warm water until material is removed and irritation ceases. If irritation persists, obtain medical attention.
INGESTION:	If conscious give 1 to 2 glasses of water and induce vomiting; keep head below hips to prevent aspiration of vomitus. Obtain medical attention. Never give anything by mouth if patient is unconscious, rapidly losing consciousness or convulsing.
INHALATION:	Move to fresh air. Apply oxygen or artificial respiration if required. If breathing difficulties, or distress, continue obtain medical attention.

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOUR:	Brown paste; slight soapy odour	
SPECIFIC GRAVITY:	Not applicable	
BOILING POINT (°C):	100	
MELTING POINT (°C):	0	
SOLUBILITY IN WATER:	Soluble	pH: 9.5 – 11.5
PERCENT VOLATILE BY VOLUME:	Not applicable	
EVAPORATION RATE:	Not applicable	
VAPOUR PRESSURE (mmHg):	Not applicable	
VAPOUR DENSITY (air = 1):	Not applicable	
BULK DENSITY	Not applicable	

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Not flammable
FLAMMABLE LIMITS:	Not applicable
EXTINGUISHING MEDIA:	Use media suitable for packaging and surrounding materials.
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained breathing apparatus required for fire fighting personnel.

UNUSUAL FIRE AND EXPLOSION HAZARDS:	None known.

SECTION VII: REACTIVITY DATA

STABILITY:	STABLE [XX]	UNSTABLE [ ]
INCOMPATIBILITY (CONDITIONS TO AVOID):	None known.	
CONDITIONS OF REACTIVITY:	None known.	
HAZARDOUS DECOMPOSITION PRODUCTS:	Not determined.	
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR [XX]	MAY OCCUR [ ]

SECTION VIII: PREVENTATIVE MEASURES

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	Not applicable.
VENTILATION:	Not applicable.
PROTECTIVE GLOVES:	Personal preference.
EYE PROTECTION:	Safety glasses with side-shields recommended.
OTHER PROTECTIVE EQUIPMENT (Specify):	Wear clothing adequate to protect against exposure. Ensure eye-wash station and emergency shower are available.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Wash thoroughly after handling. Avoid contact with eyes, skin or clothing. Launder contaminated clothing before reuse. No specific storage requirements.

STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED

Use appropriate safety equipment. Scoop up excess material. Collect uncontaminated material for repackaging. Collect contaminated material in approved containers for disposal. Wipe up remaining spill with absorbent compound to prevent slipping hazard.

WASTE DISPOSAL METHOD

Dispose in accordance with federal, provincial and local regulations. This material can be landfilled in most areas; check with local operator. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal.

SECTION IX: PREPARATION

THE INFORMATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH,
BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.

DATE ISSUED:	December 9, 2008	BY:	Product safety committee
SUPERSEDES:	December 19, 2005	PHONE:	780-440-4923

MATERIAL SAFETY DATA SHEET
Jet Fuel

MSDS: 941

REVISION DATE: 2/26/2009

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Jet Fuel**

SYNONYMS: Jet Fuel, Kerosene, Jet A, Jet A-1, JP-8, Petroleum Distillate Fuel

PRODUCT CODE:

Jet A	(212110)	Jet A-1	(212212)
Jet A-1 (50)	(212211)	JP-8	(212130)

This Material Safety Data Sheet applies to the listed products and synonym descriptions for Hazard Communication purposes only. Technical specifications vary greatly depending on the product and are not reflected in this document. Consult specification sheets for technical information. This product contains ingredients that are considered to be hazardous as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

IMPORTANT: Read this MSDS before handling or disposing of this product. Pass this information on to employees, customers and product users.

MANUFACTURER: U. S. OIL & REFINING CO.

ADDRESS: 3001 Marshall Ave., Tacoma, WA 98421

EMERGENCY PHONE: (253)-383-1651
FAX PHONE: (253)-272-2495
CHEMTREC PHONE: (800) 424-9300
NATIONAL RESPONSE: (800) 424-8802

CHEMICAL FAMILY: Hydrocarbon

PRODUCT USE: Jet Fuel is a complex blend of hydrocarbons derived from various refinery streams, This product is intended for us as a fuel or for use in an engineered process. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.

PREPARED BY: U.S. OIL & REFINING CO.

CAS #: 8008-20-6

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

NAME	CAS NUMBER	CONCENTRATION %
Kerosene/Hydrocarbon mixture	8008-20-6	90 - 100%
Cyclohexane	110-82-7	0 – 1%
1,2,4 Trimethylbenzene	95-63-6	0 – 2%
Benzene	71-43-2	0 - .2%
Toluene	108-88-3	0 - .5%
Xylene	1330-20-7	0 – 2%
Naphthalene	91-20-3	0 – 3%
Ethylbenzene	100-41-4	0 - 0.5%

SECTION 3: HAZARDS IDENTIFICATION

Warning! Combustible! Mist or vapors can cause a flash fire. Liquid, mist or vapors can cause eye, skin and respiratory tract irritation. Ingestion of liquid and aspiration into the lungs can result in chemical pneumonia.

PHYSICAL STATE: Liquid
Color: Water white to light amber
Odor: Faint petroleum odor

ROUTES OF ENTRY: Dermal Contact. Eye Contact. Inhalation. Ingestion.

POTENTIAL HEALTH EFFECTS

EYES: Eye irritation may result from contact with liquid, mists and/or vapors. In severe cases, permanent eye damage may occur.

SKIN: Contact with the skin may cause irritation. Skin irritation leading to dermatitis may occur upon prolonged or repeated contact. Symptoms include redness, itching and dermatitis. Repeated contact may cause harmful effects in other parts of the body.

INGESTION: This material can irritate the mouth, throat, and/or stomach. Aspiration into the lungs may cause chemical pneumonia. Symptoms include burning sensation of the mouth, nausea and vomiting. In severe cases loss of consciousness may occur.

INHALATION: Vapors or mists can irritate the nose, throat and/or lungs and can cause central nervous system depression. Symptoms include headache, nausea, fatigue and dizziness. In severe cases loss of consciousness or death may occur.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: This product contains petroleum distillates similar to those shown to produce skin tumors on laboratory animals. Avoid prolonged or repeated skin contact.

Caution is recommended for personnel with pre-existing central nervous system diseases. Personnel with pre-existing central nervous system diseas, skin disorders, or chronic respiratory diseases should avoid exposure to this product.

OVER-EXPOSURE SIGNS/SYMPTOMS: Headache, nausea, vomiting, dizziness, central nervous system- respiratory depression, convulsions, loss of consciousness, coma or death. Eye or skin irritation.

See toxicological information (section 11)

SECTION 4: FIRST AID MEASURES

EYES: Flush eyes with plenty of water for a minimum of 15 minutes. Seek medical care if irritation persists.

SKIN: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation or pain persists. Launder or dry-clean clothing prior to re-use. Discard contaminated leather goods.

INGESTION: WARNING! DO NOT INDUCE VOMITING. If aspirated into the lungs, may cause chemical pneumonitis. Seek medical attention promptly.

INHALATION: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get immediate medical attention if breathing is difficult or stops.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Ingestion/Inhalation of this product or subsequent vomiting may lead to aspiration, which may cause pneumonitis.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABILITY OF THE PRODUCT:	**Combustible liquid**
FLAMMABLE LIMITS IN AIR, (% BY VOLUME):	LOWER: Approx 0.7 UPPER: Approx 5.0
FLASH POINT:	Closed Cup >38° C, (100° F)
AUTOIGNITION TEMPERATURE:	Not determined
PRODUCTS OF COMBUSTION:	Normal combustion forms water vapor and carbon dioxide. Incomplete burning can produce carbon monoxide and particulate matter.
FIRE/EXPLOSION HAZARDS IN THE PRESENCE OF VARIOUS SUBSTANCES:	Combustible liquid. When heated above the flash point, this material will release vapors that can ignite when exposed to open flame, sparks and static discharge. Mists or sprays may be flammable at temperatures below the normal flash point. Keep away from heat and open flame.
FIRE-FIGHTING MEDIA AND INSTRUCTIONS:	Combustible Liquid. Use dry chemical, foam or carbon dioxide to extinguish the fire. Consult foam manufacturer for appropriate media, application rates and water/foam ratio. If a leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak. Use water to flush spills away from sources of ignition. Do not flush down public sewers. Collect contaminated fire-fighting water separately. It must not enter the municipal sewage system. Dike area of fire to prevent runoff. Decontaminate emergency personnel and equipment with soap and water. Combustible liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flashback. Runoff to sewer may create fire or explosion hazard.
SPECIAL FIRE FIGHTING EQUIPMENT:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Cool tanks, containers and exposed structures with water.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Moderately combustible. When heated above the flash point, this material will release flammable vapors which if exposed to a source of ignition can burn or be explosive in confined spaces. Mists or sprays may be flammable at temperatures below the normal flash point. Keep away from heat and open flame.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:

Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (section 8). Do not touch or walk through spilled material. Tanks, vessels or other confined spaces which have contained product should be freed of vapors before entering. The container should be checked to ensure a safe atmosphere before entry. Empty containers may contain toxic, flammable/combustible or explosive residues or vapors. Do not cut, grind, drill, weld or reuse empty containers that contained this product. Do not transfer this product to another container unless the container receiving the product is labeled with proper DOT shipping name, hazard class and other information that describes the product and its hazards.

ENVIRONMENTAL PRECAUTIONS:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. If facility or operation has an "*oil or hazardous substance contingency plan*", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Review Fire Fighting Measures section before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) away from release. Contain spill in smallest possible area.

Recover as much product as possible (e.g., by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 800-424- 8802. For highway or railway spills, contact Chemtrec at 800-424-9300.

METHODS FOR CLEANING UP:

If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials) and use a nonsparking or explosion-proof means to transfer material to a sealable, appropriate container for disposal. For large spills, dike spilled material or otherwise contain it to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Water spill: Eliminate sources of ignition and warn other ships in the area to stay clear. Notify the proper authorities. Confine with skimming equipment if available or set booms to recover the spill.

SECTION 7: HANDLING AND STORAGE

HANDLING

Do not ingest. Do not get in eyes, on skin or on clothing. Keep container closed. Use only with adequate ventilation. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Wash thoroughly after handling. In case of fire, use water spray, foam, dry chemical or carbon dioxide as described in the Fire Fighting Measures section of the MSDS. Do not pressurize, cut, weld, braze, solder, drill on or near this container. "Empty" container contains residue (liquid and/or vapor) and may explode in heat of a fire. Use good personal hygiene practices. After handling this product, wash hands before eating, drinking or using toilet facilities. Keep out of reach of children. Failure to use caution may cause serious injury or illness. Do not use as a cleaning solvent or for other non-fuel uses. To prevent ingestion and exposure - Do not siphon by mouth to transfer product between containers.

STORAGE:

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

For information regarding transferring material refer to OSHA Standard 29 CFR 1910.106, “Flammable and Combustible Liquids”, National Fire Protection Association (NFPA) 77, “Recommended Practice on Static Electricity”, and/or the American Petroleum Institute (API) Recommended Practice 2003, “Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents”.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Special ventilation may be required for handling conditions at elevated temperatures. Ensure that eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

SKIN: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Flame retardant clothing is recommended. In case of skin contact, wash with mild soap and water or a waterless hand cleaner. Immediately remove soiled clothing and wash thoroughly before reuse. Discard oil-soaked leather goods.

RESPIRATORY: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

HANDS: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye: Eye protection (chemical-type goggles and/or face shield) should be worn whenever there is a likelihood of splashing or spraying liquid. Contact lenses should not be worn. Eye wash water should be provided.

Other: Use good personal hygiene practices.

PROTECTIVE CLOTHING OR EQUIPMENT: Gloves, Hardhat, Face Shield, Boots, Safety Glasses, Respirator, Fire Retardant Clothing

PERSONAL PROTECTIVE EQUIPMENT IN CASE OF A LARGE SPILL: Splash goggles. Full suit. Vapor respirator. Boots. Gloves. Suggested protective clothing might not be adequate. Consult a specialist before handling this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (Continued)

Established Occupational Exposure Limits

SUBSTANCE	VALUE	TIME/TYPE	SOURCE
Stoddard Solvent	500 ppm 60 ppm	8 Hour PEL 8 Hour PEL	OSHA NIOSH
Cyclohexane	300 ppm	98 Hour PEL	OSHA
Benzene	1 ppm 5 ppm	8 Hour PEL STEL	OSHA OSHA
Toluene	50 ppm	8 Hour TWA	ACGIH
Xylene	100 ppm 150 ppm	8 Hour TWA STEL	OSHA OSHA
Napthalene	10 ppm 15 ppm	8 Hour TWA STEL	OSHA NIOSH

Consult local authorities for acceptable exposure limits.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	Water white to light amber
ODOR:	Faint Petroleum Odor
BOILING POINT:	160 to 300°C (320 to 572°F)
FREEZING POINT:	-50 to -40°C
SPECIFIC GRAVITY:	0.775 to 0.840 (Water = 1) (@ 60°F)
VISCOSITY:	1.3 – 2.2 cSt @ 100°F (D-445)
VAPOR PRESSURE:	2.2 kPa @37.8°C (100F)
VAPOR DENSITY:	>1 (Air = 1)
VOLATILITY:	Not Determined
EVAPORATION RATE:	Not Available
MATERIALS TO AVOID:	Reacts with strong oxidizing material and strong acids
HAZARDOUS DECOMPOSITION PRODUCTS:	Burning or excessive heating may produce carbon monoxide and other harmful gases and vapors including oxides and/or other compounds of sulfur and nitrogen.

SECTION 10: STABILITY AND REACTIVITY

STABILITY AND REACTIVITY:	The product is stable
INCOMPATIBILITY WITH VARIOUS SUBSTANCES:	Reactive with strong oxidizing agents and strong acids
HAZARDOUS DECOMPOSITION PRODUCTS:	None known
HAZARDOUS POLYMERIZATION:	Will not occur
CONDITIONS TO AVOID (STABILITY):	Heat, sparks and open flame. Strong oxidizers. Strong acids.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICITY DATA

Jet Fuel/Straight-run Kerosene CAS 8008-20-6

CARCINOGENICITY: Application of petroleum hydrocarbons of similar composition and boiling range to mouse skin resulted in an increased incidence of skin tumors in some studies. Potential components which are listed by IARC as carcinogens or potential carcinogens are: benzene and ethylbenzene. Risk of cancer depends on duration and level of exposure.

TARGET ORGANS: Potential components which have demonstrated developmental and or target organ issues are: benzne, toluene, xylenes, naphthalene and ethylbenzene.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: This product is potentially toxic to aquatic organisms and should be kept out of sewage and drainage systems and all bodies of water.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, conditions of use which results in chemical, physical changes or contamination, may subject it to regulation as a hazardous waste. Transportation, treatment, storage and disposal of waste material must be conducted in accordance with federal, state and local regulations.

Consult your local or regional authorities.

SECTION 14: TRANSPORT INFORMATION

REGULATORY INFORMATION	UN NUMBER	EMERGENCY RESPONSE GUIDEBOOK	PROPER SHIPPING NAME	CLASS	PACKING GROUP
DOT Classification	UN1863	Guide 128	Fuel, Aviation, Turbine Engine	3	III

Note: This material may be re-classified as a combustible liquid for domestic land transportation under 49 CFR 173.150 (f)

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

EPA SARA Sections 302, 304 & 313 and CERCLA :

This material contains the following chemicals subject to the reporting requirements of SARA 302, SARA 304, SARA 313, CERCLA and 40 CFR 372:

Chemical Name	CAS Number	Material Concentration	CERCLA/SARA Section 302 TPQ (lbs.)	CERCLA/SARA Section 304 RQ (lbs.)
BENZENE	71-43-2	0 - 0.2%		10
1,2,4 TRIMETHYLBENZENE	95-63-6	0 - 2%		N/A
NAPHTHALENE	91-20-3	1 - 3%		100
XYLENES	1330-20-7	0 - 2%		100

Carcinogen Identification:

This mixture may contain chemicals that have been identified as a carcinogen by NTP, IARC, or OSHA.

Extremely Hazardous Substances for Emergency Response and Planning 40 CFR 355 & 40 CFR 370:

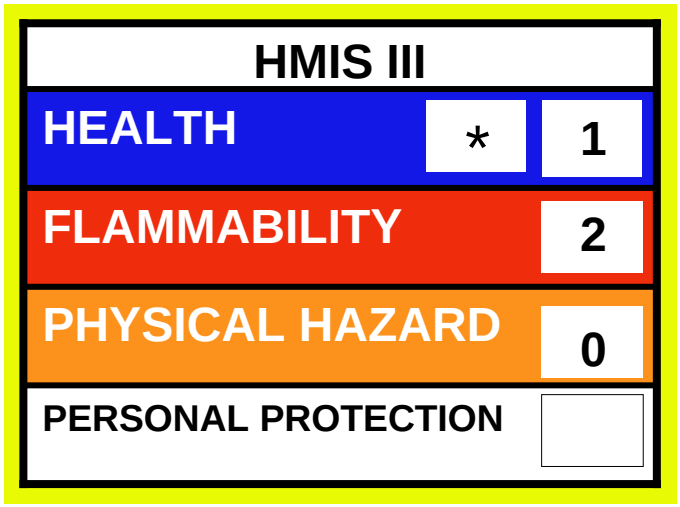
None.

EPA SARA 311/312 Title III Hazard Categories:

Acute Health Hazard:	**YES**
Chronic Health Hazard:	**YES**
Fire Hazard:	**YES**
Pressure Hazard:	**NO**
Reactive Hazard:	**NO**

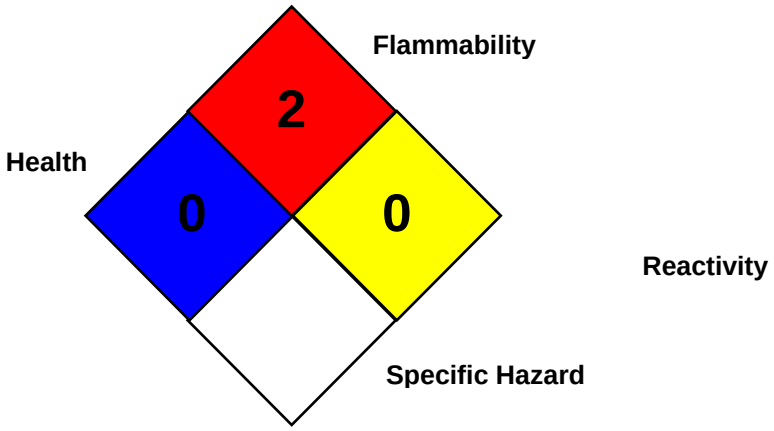
SECTION 16: OTHER INFORMATION

HAZARDOUS MATERIAL INFORMATION SYSTEM (U.S.A.)



*** Chronic Health Hazard**

NATIONAL FIRE PROTECTION ASSOCIATION (U.S.A.)



DISCLAIMER

The information in this MSDS was obtained from sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS ACCURACY OR CORRECTNESS.**

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.**

Material Safety Data Sheet

Revision Issued: 6/22/2010 Supercedes: 7/21/2003 First Issued: 10/22/96

Section I - Chemical Product And Company Identification

Product Name: Desert Crete Polymer 550

CAS Number: N/A HBCC MSDS No. CD01550

HILL BROTHERS Chemical Co.
1675 NORTH MAIN STREET • ORANGE, CALIFORNIA 92867-3499
(714) 998-8800 • FAX: (714) 998-6310
http://hillbrothers.com

1675 No. Main Street, Orange, California 92867
Telephone No: 714-998-8800 | Chemtrec: 800-424-9300

Section II - OSHA Regulated Ingredients

		Exposure Limits (TWAs) in Air		
Chemical Name	CAS Number	ACGIH TLV	OSHA PEL	STEL
No OSHA Regulated Ingredients				

Section III - Hazard Identification

Routes of Exposure: Eyes, skin, inhalation
Summary of Acute Health Hazards
Ingestion: No hazard in normal industrial use. Low order of toxicity.
Inhalation: Vapors may be irritating to respiratory system and nasal passages.
Skin: Frequent or prolonged contact may irritate the skin.
Eyes: Slightly irritating but does not injure eye tissues.
Summary of Chronic Health Hazards: N/A
Medical Conditions Generally Aggravated by Exposure: N/A
Note to Physicians: N/A

Section IV - First Aid Measures

Ingestion: If swallowed induce vomiting only if victim is alert. Get prompt medical attention. Do Not attempt to give anything by mouth to a drowsy or unconscious person.
Inhalation: Remove to fresh air. Get medical attention if irritation persists.
Skin: Flush with large amounts of water; use soap, if available.
Eyes: Flush eyes with large amounts of water for at least 15 minutes. If irritation persists, get medical attention.

Section V - Fire Fighting Measures

Flash Point: : Non-Flammable **Autoignition Temperature:** N/A
Lower Explosive Limit: N/A **Upper Explosive Limit:** N/A
Unusual Fire and Explosion Hazards: Dry polymer film will burn. CO_2 and CO may be emitted.
Extinguishing Media: Water fog; Foam; CO2; Dry chemical

Special Firefighting Procedures: Fire fighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes.

Section VI - Accidental Release Measures

Spills should be taken up with suitable absorbent and placed in containers. Spill area can be washed with water; collect wash water for approved disposal. Do not flush to storm sewer or waterway.

Section VII - Handling and Storage

Open drums in well ventilated area. Avoid breathing vapors.
Other Precautions: N/A

Section VIII - Exposure Controls/Personal Protection

Respiratory Protection: None required under normal handling conditions. Use NIOSH approved respirator if vapor or mist levels are irritating.
Ventilation: Local ventilation is adequate.
Protective Clothing: The use of chemically resistant gloves is recommended. Rubber boots and apron if exposure is severe. Soiled clothing should be laundered before re-use.
Other Protective Clothing or Equipment: Wear safety glasses with side shields.
Work/Hygienic Practices: Wash hands with plenty of soap and water before eating, smoking, and using toilet facilities. Do NOT place food, coffee or other drinks in the area where dusting or splashing of solutions is possible.

Section IX - Physical and Chemical Properties

Physical State: Liquid
pH: N/A
Melting Point/Range: N/A
Boiling Point/Range: 212°F
Appearance/Color/Odor: Milk white aqueous emulsion, sweet odor.
Solubility in Water: Miscible
Vapor Pressure (mmHg): 24 @ 25°C
Specific Gravity (Water=1): 1.02 - 1.04
Molecular Weight: N/A
Vapor Density (Air=1): 0.6
% Volatiles: 51.2 - 52.2 (by volume)
Evaporation Rate (Bu-Ac=1): 0.4
% VOC: zero

Section X - Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur
Materials to Avoid: Substances which react with water.
Hazardous Decomposition Products/Conditions to Avoid: Stable under normal temperature and pressure.

Section XI - Toxicological Information

N/A

Section XII - Ecological Information

N/A

Section XIII - Disposal Considerations

Waste disposal should be in accordance with existing federal, state and local regulations. Empty containers may contain product residue; follow MSDS and label warnings even after they have been emptied. This product does not meet the definition of hazardous waste.

Section XIV - Transport Information

DOT Proper Shipping Name: N/A
DOT Hazard Class/ I.D. No.: N/A

Section XV - Regulatory Information

WARNING
This product contains Acetaldehyde, a chemical known to the State of California to cause cancer
Reportable Quantity: N/A
NFPA Rating: Health - 1; Flammability - 0; Instability - 0
0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme
Carcinogenicity Lists: No **NTP:** No **IARC Monograph:** No **OSHA Regulated:** No

Section XVI - Other Information

Synonyms/Common Names: N/A
Chemical Family/Type: Styrene-Acrylic Copolymer
Sections changed since last revision: I, IX, XV

IMPORTANT! Read this MSDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure. This MSDS has been prepared according to the OSHA Hazard Communication Standard [29 CFR 1910.1200]. The MSDS information is based on sources believed to be reliable. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use, or misuse are beyond our control, **Hill Brothers Chemical Company** makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Also, additional information may be necessary or helpful for specific conditions and circumstances of use. It is the user's responsibility to determine the suitability of this product and to evaluate risks prior to use, and then to exercise appropriate precautions for protection of employees and others.

MATERIAL SAFETY DATA SHEET

Diesel Fuel (All Types)

MSDS No. 9909

EMERGENCY OVERVIEW
CAUTION!
OSHA/NFPA COMBUSTIBLE LIQUID - SLIGHT TO MODERATE IRRITANT
EFFECTS CENTRAL NERVOUS SYSTEM
HARMFUL OR FATAL IF SWALLOWED

Moderate fire hazard. Avoid breathing vapors or mists. May cause dizziness and drowsiness. May cause moderate eye irritation and skin irritation (rash). Long-term, repeated exposure may cause skin cancer.
If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs).

NFPA 704 (Section 16)

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

EMERGENCY TELEPHONE NUMBER (24 hrs): **CHEMTREC (800) 424-9300**
COMPANY CONTACT (business hours): Corporate Safety (732) 750-6000
MSDS INTERNET WEBSITE: www.hess.com (See Environment, Health, Safety & Social Responsibility)

SYNONYMS: Ultra Low Sulfur Diesel (ULSD); Low Sulfur Diesel; Motor Vehicle Diesel Fuel; Diesel Fuel #2; Dyed Diesel Fuel; Non-Road, Locomotive and Marine Diesel Fuel; Tax-exempt Diesel Fuel

See Section 16 for abbreviations and acronyms.

2. COMPOSITION and CHEMICAL INFORMATION ON INGREDIENTS

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
Diesel Fuel (68476-34-6)	100
Naphthalene (91-20-3)	Typically < 0.01

A complex mixture of hydrocarbons with carbon numbers in the range C9 and higher. Diesel fuel may be dyed (red) for tax purposes. May contain a multifunctional additive.

3. HAZARDS IDENTIFICATION

EYES
Contact with liquid or vapor may cause mild irritation.

SKIN
May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

INGESTION
The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

INHALATION
Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

CHRONIC EFFECTS and CARCINOGENICITY
Similar products produced skin cancer and systemic toxicity in laboratory animals following repeated applications. The significance of these results to human exposures has not been determined - see Section 11 Toxicological Information.

IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A). NIOSH regards whole diesel fuel exhaust particulates as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash).

4. FIRST AID MEASURES

EYES
In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN
Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops.

INGESTION
DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

INHALATION
Remove person to fresh air. If person is not breathing provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT:	> 125 ^{o}F (> 52 ^{o}C) minimum PMCC
AUTOIGNITION POINT:	494 ^{o}F (257 ^{o}C)
OSHA/NFPA FLAMMABILITY CLASS:	2 (COMBUSTIBLE)
LOWER EXPLOSIVE LIMIT (%):	0.6
UPPER EXPLOSIVE LIMIT (%):	7.5

FIRE AND EXPLOSION HAZARDS
Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

EXTINGUISHING MEDIA
SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

FIRE FIGHTING INSTRUCTIONS

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

7. HANDLING and STORAGE

HANDLING PRECAUTIONS

Handle as a combustible liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Diesel fuel, and in particular low and ultra low sulfur diesel fuel, has the capability of accumulating a static electrical charge of sufficient energy to cause a fire/explosion in the presence of lower flashpoint products such as gasoline. The accumulation of such a static charge occurs as the diesel flows through pipelines, filters, nozzles and various work tasks such as tank/container filling, splash loading, tank cleaning; product sampling; tank gauging; cleaning, mixing, vacuum truck operations, switch loading, and product agitation. There is a greater potential for static charge accumulation in cold temperature, low humidity conditions.

Documents such as 29 CFR OSHA 1910.106 "Flammable and Combustible Liquids, NFPA 77 Recommended Practice on Static Electricity, API 2003 "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents and ASTM D4865 "Standard Guide for Generation and Dissipation of Static

Electricity in Petroleum Fuel Systems" address special precautions and design requirements involving loading rates, grounding, bonding, filter installation, conductivity additives and especially the hazards associated with "switch loading." ["Switch Loading" is when a higher flash point product (such as diesel) is loaded into tanks previously containing a low flash point product (such as gasoline) and the electrical charge generated during loading of the diesel results in a static ignition of the vapor from the previous cargo (gasoline).]

Note: When conductivity additives are used or are necessary the product should achieve 25 picosiemens/meter or greater at the handling temperature.

STORAGE PRECAUTIONS

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

WORK/HYGIENIC PRACTICES

Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

8. EXPOSURE CONTROLS and PERSONAL PROTECTION

EXPOSURE LIMITS

Components (CAS No.)	Source	Exposure Limits TWA/STEL	Note
Diesel Fuel: (68476-34-6)	OSHA	5 mg/m, as mineral oil mist	
	ACGIH	100 mg/m^3 (as totally hydrocarbon vapor) TWA	A3, skin
Naphthalene (91-20-3)	OSHA	10 ppm TWA	
	ACGIH	10 ppm TWA / 15 ppm STEL	A4, Skin

ENGINEERING CONTROLS

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

EYE/FACE PROTECTION

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

SKIN PROTECTION

Gloves constructed of nitrile, neoprene, or PVC are recommended. Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

RESPIRATORY PROTECTION
A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE
Clear, straw-yellow liquid. Dyed fuel oil will be red or reddish-colored.

ODOR
Mild, petroleum distillate odor

BASIC PHYSICAL PROPERTIES

BOILING RANGE:	320 to 690 oF (160 to 366 ^{o}C)
VAPOR PRESSURE:	0.009 psia @ 70 ^{o}F (21 ^{o}C)
VAPOR DENSITY (air = 1):	> 1.0
SPECIFIC GRAVITY (H_2O = 1):	0.83 to 0.88 @ 60 ^{o}F (16 ^{o}C)
PERCENT VOLATILES:	100 %
EVAPORATION RATE:	Slow; varies with conditions
SOLUBILITY (H_2O):	Negligible

10. STABILITY and REACTIVITY

STABILITY: Stable. Hazardous polymerization will not occur.

CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS
Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers; Viton ®; Fluorel ®

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

11. TOXICOLOGICAL PROPERTIES

ACUTE TOXICITY
Acute dermal LD50 (rabbits): > 5 ml/kg
Acute oral LD50 (rats): 9 ml/kg
Primary dermal irritation: extremely irritating (rabbits)
Draize eye irritation: non-irritating (rabbits)
Guinea pig sensitization: negative

CHRONIC EFFECTS AND CARCINOGENICITY
Carcinogenic: OSHA: NO IARC: NO NTP: NO ACGIH: A3

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

MUTAGENICITY (genetic effects)
This material has been positive in a mutagenicity study.

12. ECOLOGICAL INFORMATION

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

13. DISPOSAL CONSIDERATIONS

Consult federal, state and local waste regulations to determine appropriate disposal options.

14. TRANSPORTATION INFORMATION

PROPER SHIPPING NAME:	Diesel Fuel	Placard (International Only):
HAZARD CLASS and PACKING GROUP:	3, PG III	
DOT IDENTIFICATION NUMBER:	NA 1993 (Domestic) UN 1202 (International)	
DOT SHIPPING LABEL:	None	

Use Combustible Placard if shipping in bulk domestically

15. REGULATORY INFORMATION

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a “petroleum exclusion” clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.

SARA SECTION 311/312 - HAZARD CLASSES

ACUTE HEALTH	CHRONIC HEALTH	FIRE	SUDDEN RELEASE OF PRESSURE	REACTIVE
X	X	X	--	--

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product may contain listed chemicals below the *de minimis* levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

CALIFORNIA PROPOSITON 65 LIST OF CHEMICALS

This product contains the following chemicals that are included on the Proposition 65 "List of Chemicals" required by the California Safe Drinking Water and Toxic Enforcement Act of 1986:

INGREDIENT NAME (CAS NUMBER)	Date Listed
Diesel Engine Exhaust (no CAS Number listed)	10/01/1990

CANADIAN REGULATORY INFORMATION (WHMIS)

Class B, Division 3 (Combustible Liquid) and Class D, Division 2, Subdivision B (Toxic by other means)

16. OTHER INFORMATION

NFPA® HAZARD RATING HEALTH: 0
FIRE: 2
REACTIVITY: 0

Refer to NFPA 704 "Identification of the Fire Hazards of Materials" for further information

HMIS® HAZARD RATING HEALTH: 1 * * Chronic
FIRE: 2
PHYSICAL: 0

SUPERSEDES MSDS DATED: 02/28/2001

ABBREVIATIONS:

AP = Approximately < = Less than > = Greater than
N/A = Not Applicable N/D = Not Determined ppm = parts per million

ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists
AIHA	American Industrial Hygiene Association
ANSI	American National Standards Institute (212) 642-4900
API	American Petroleum Institute (202) 682-8000
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act
DOT	U.S. Department of Transportation [General info: (800) 467-4922]
EPA	U.S. Environmental Protection Agency
HMIS	Hazardous Materials Information System
IARC	International Agency For Research On Cancer
MSHA	Mine Safety and Health Administration
NFPA	National Fire Protection Association (617)770-3000
NIOSH	National Institute of Occupational Safety and Health
NOIC	Notice of Intended Change (proposed change to ACGIH TLV)
NTP	National Toxicology Program
OPA	Oil Pollution Act of 1990
OSHA	U.S. Occupational Safety & Health Administration
PEL	Permissible Exposure Limit (OSHA)
RCRA	Resource Conservation and Recovery Act
REL	Recommended Exposure Limit (NIOSH)
SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA	Self-Contained Breathing Apparatus
SPCC	Spill Prevention, Control, and Countermeasures
STEL	Short-Term Exposure Limit (generally 15 minutes)
TLV	Threshold Limit Value (ACGIH)
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average (8 hr.)
WEEL	Workplace Environmental Exposure Level (AIHA)
WHMIS	Canadian Workplace Hazardous Materials Information System

MATERIAL SAFETY DATA SHEET

Product Name:
CARBOB Gasoline
(3393)

SECTION 1 – PRODUCT IDENTIFICATION AND USE

Product name CARBOB Gasoline ***Note: All Irving gasolines are unleaded.***
Chemical name Natural gasoline
Common names and synonyms Automotive gasoline, California Reformulated Blendstock for Oxygenated Blending
WHMIS classification Flammable liquid Class B Division 2; Very toxic material Class D Division 2 Subdivisions A and B
Hazard codes

	NFPA	HMIS
Health	1	1
Flammability	3	3
Reactivity	0	0

NFPA & HMIS Ratings: 0=Insignificant/No Hazard. 1=Slight Hazard. 2=Moderate Hazard. 3=High/Serious Hazard. 4=Extreme/Severe Hazard.

PIN #, UN # 1203
TDG, DOT class Class 3
Packing group II
Shipping name Gasoline
Product use Fuel

Supplier Irving Oil Limited, Refining Division
Box 1260, Saint John
New Brunswick Canada E2L 4H6
Phone (506) 202-2000
Emergency (Chemtrec) 1-800-424-9300
Refinery (506) 202-3000

SECTION 2 – HAZARDOUS INGREDIENTS

Ingredients	CAS#	Concentration (wt%)	ACGIH-TLVs (2005) (ppm) TWA	ACGIH-TLVs (2005) (ppm) STEL	OSHA PELs (ppm) (general industry) TWA	OSHA PELs (ppm) (general industry) STEL	OSHA PELs (ppm) (general industry) Peak	NIOSH RELs (ppm) TWA	NIOSH RELs (ppm) STEL	LD_{50} (rat, oral) (g/kg)	LC_{50} (rat, 4 hours)
Gasoline	8006-61-9	100	300	500	300*	500*	None*	Not established		13.6	Not available
					Not established†						
Contains a variety of aromatic and aliphatic hydrocarbons including:											
Benzene	71-43-2	0.35-0.7	0.5	2.5	1* 10†	5* 25C†	None* 50†	0.1	1.0	0.9	13,200 ppm
n-Hexane	110-54-3	5-28	50	None	50* 500†	None* None†	None* None†	50	None	25	48,000 ppm
Toluene	108-88-3	Not available	50	None	100* 200†	150* 300†	None* 500†	100	150	0.6	49 g/m^3
Xylenes	1330-20-7	14-20	100	150	100* 100†	150* None†	None* None†	100	150	4.3	5,000 ppm

*Final Rule limits (currently non-enforceable). †Transitional limits (currently in effect). C means Ceiling limit.
Gasoline is a complex mixture of hydrocarbons. Its exact composition depends on the source of the crude oil from which it was produced and the refining methods used. Gasoline contains hundreds of individual organic chemicals. This section identifies only some of the well-known chemical constituents.

SECTION 3 – PHYSICAL DATA

Form Liquid
Colour Clear.
Odour Characteristic gasoline odour
Odour threshold About 0.1 ppm
pH Not applicable
Coefficient of oil/water distribution Not available. Expected to be >1.
Specific gravity 0.72 to 0.74 @ 15˚C (60˚F)
Vapour density 2.5 to 4 (air = 1)
Vapour pressure 130 to 150 mm Hg @ 20^{o}C (68˚F)
Evaporation rate Rapid. ~4. (Butyl acetate = 1)
Boiling point 38 to 220˚C (100 to 428˚F)
Freezing point <-80˚C (-112˚F)

SECTION 4 – FIRE AND EXPLOSION HAZARDS

Flammability ☒ Yes ☐ No **Conditions** Easily ignited by heat, sparks or flames.
Flash point Typically about -43˚C (-45˚F) (cc) **Auto ignition temperature** Typically 257^{o}C (495˚F)
Lower flammable limit Typically 1.4% **Upper flammable limit** Typically 7.6%
Explosion data: Sensitivity to: **Mechanical impact** Not expected to be sensitive **Static discharge** Vapour: yes
Means of extinction In general, do not extinguish fire unless flow can be stopped. Use carbon dioxide, dry chemical, or foam. Cool containers with flooding quantities of water until well after the fire is out.
Special precautions Vapour is heavier than air. It will spread along the ground & collect in low or confined areas (sewers, basements). Also travels to source of ignition and flash back. Containers may explode when heated.
Hazardous combustion products Carbon monoxide. Nitrogen oxides. PAHs, phenols, and other aromatic hydrocarbons.

SECTION 5 – REACTIVITY INFORMATION

Stability Stable
Conditions to avoid Sources of ignition. Static discharges. High temperatures.
Incompatible substances Oxidizers such as peroxides, nitric acid, and perchlorates.
Hazardous decomposition Carbon monoxide, nitrogen oxides, and numerous aromatic hydrocarbons.

SECTION 6 – HEALTH HAZARD INFORMATION

Route of Entry
- ☐ **Eye**
- ☒ **Skin absorption** (benzene, n-hexane, toluene)
- ☒ **Inhalation**
- ☒ **Ingestion**

Hazardous Contact
- ☒ **Eye**
- ☒ **Skin contact**

Acute exposure Headache, nausea, dizziness and other symptoms of central nervous system (CNS) depression. Aspiration into the lungs can cause severe pneumonitis (serious lung irritation), with coughing, gagging, shortness of breath, chest pain, and/or pulmonary edema (fluid accumulation).

Chronic exposure Peripheral & CNS damage, such as tremors, hallucinations, memory loss, & impaired mental capacity. Damage to liver, kidneys and blood-producing system. Prolonged skin contact may cause dermatitis.

Carcinogenicity EPA, IARC, and NIOSH consider gasoline to be a suspected (potential) carcinogen. ACGIH refers to gasoline as a confirmed animal carcinogen with unknown relevance to humans. NTP and OSHA have not classified gasoline for carcinogenicity. Benzene is a recognized carcinogen.

Teratogenicity	Yes (toluene)
Reproductive toxicitv	Not available
Mutagenicity	Not known to be mutagenic
Sensitizatio	No

Irritancy Skin eyes, and respiratory tract. Very serious irritant if trapped against skin.

Toxicologically synergistic products Other petroleum hydrocarbons and other chemicals that cause CNS depression or other neurological effects can be expected to produce additive or synergistic effects.

SECTION 7 – FIRST AID

Inhalation Move victim to fresh air. Give artificial respiration if breathing has stopped and if a qualified AR administrator is available. Apply CPR if both pulse and breathing have stopped. Obtain medical attention immediately.

Ingestion Never give anything by mouth if the person is unconscious, rapidly losing consciousness, or convulsing. If the person is conscious, have them drink 8 to 10 ounces of water or milk to dilute the material in the stomach. **Do not** induce vomiting. If vomiting occurs spontaneously, have the person lean forward to avoid aspiration. Obtain medical attention immediately.

Eye If irritation occurs, flush eye with lukewarm, gently flowing fresh water for at least 10 minutes.

Skin Quickly and gently blot away excess chemical. Remove contaminated clothing and shoes. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical assistance.

SECTION 8 – PRECAUTIONARY MEASURES

Personal protective equipment

Gloves	Tychem®BR/LV or Tychem®TK preferred.
Eye	Chemical safety goggles or face shield, as a good general safety practice.
Respiratory	NIOSH-approved SCBA or air line respirator with escape cylinder for confined spaces. A qualified occupational health and safety professional should advise on respirator selection. If an air-purifying respirator is appropriate, use a “P series” filter & organic vapour cartridges.
Clothing & footwear	Coveralls to prevent skin contact with product. If clothing or footwear becomes contaminated with product, completely decontaminate it before re-use, or discard it.

Engineering controls Enclose processes. Use local exhaust ventilation to remove vapour at its site of generation. Handle laboratory samples in a fume hood. Use mechanical ventilation in confined spaces.

Handling procedures & equipment Eliminate all sources of ignition. Ensure that ventilation systems are explosion-proof, non-sparking, and grounded. Use intrinsically-safe electrical systems. Ground and bond transfer containers. Keep containers closed. Have safety shower and eyewash in the work area. Never siphon gasoline by mouth.

Leak & spill Procedure Keep unauthorized persons away. Eliminate all sources of ignition. Ventilate area. Stop leak if it can be done safely. Prevent entry into sewers, waterways, or confined spaces. Small spills: Contain with earth, sand, or non-flammable absorbent material. Shovel (non-sparking tools) into clean, dry, labelled containers and cover. Flush area with water. Large spills: Contact emergency services for advice.

Waste disposal Contact appropriate governmental agencies for approved disposal of material.

Storage Cool, dry, well-ventilated area, out of direct sunlight. No ignition sources or incompatible materials. Containers should be grounded, vented and equipped with a flame arrester. Consider leak detection and alarm equipment for storage area.

Shipping Load at normal temperature (up to 38^{o}C) and pressure. Bond and ground containers for transfer.

SECTION 9 – PREPARATION DATE OF MSDS

Prepared by	Irving Oil Limited, Refining Division	**Phone**	(506) 202-3000
Revision date	January 30, 2006	**To re-order MSDS, phone**	(506) 202-2000

Lubricants Report

Product Data Sheet from Shell Lubricants

PDS# 3.51.01

DIAMOND DRILL ROD GREASE

DRILL ROD LUBRICANT

PRODUCT LINE

Diamond Drill Rod Grease is a premium quality lubricant specifically designed for reducing rotating friction between drill rods and casings. Its excellent adhesion and water resistance properties ensure that it stays in place.

APPLICATIONS

Diamond Drill Rod Grease is applied by hand to the outside of the drilling rods, prior to insertion into the hole.

PERFORMANCE BENEFITS

- Reduces friction and thus horsepower requirements
- Increases drilling efficiency
- Contains a germicidal agent to help prevent infection of cuts which may occur during handling of the drill rods.

TYPICAL PROPERTIES

PRODUCT CODE	**504-971**	**ASTM METHOD**
NLGI GRADE	3	
Thickener Type	Barium-Sodium Complex	
Texture	Fibrous	
Colour	Amber	
Cone Penetration @ 77°F (0.1mm), - worked 60 strokes	234	D 217
Dropping Point (°F/°C)	385/196	D 2265
Base Oil Viscosity (cSt) @ 40°C @ 100°C	 117.6 10.8	D 445
Water Washout @ 79°C (% wt loss)	5.0	D 1264
4 Ball EP Properties, load wear (kg)	42	D 2596
Rust Prevention	Pass	D 1743
Leakage Tendency @ 105°C (grams)	1.38	D 1263

Visit your nearest Shell Associate or Reseller for more details.
Need more product information? Please the Shell Customer Service Centre at 1-800-661-1600
or e-mail us at questions@shell.com

MSDS requests? Please call 1-800-661-1600 or fax your request to (403) 691-3997

Appendix VI

Emergency Response Plan

-To be posted in camp-

ROCHE BAY PLC
EMERGENCY RESPONSE PLAN

In The Event of an Emergency and/or When Instructed by the Project Supervisor or First Aid Attendant to …

Call The Nursing Station…

Primary

Health Center – Repulse Bay **1-867-462-9916**

(Head Nurse – Maria Fraser) **Or** **1-867-462-4083**

Or

1st Alternate

Health Center – Pelly Bay **1-867-769-6441**

(Head Nurse – Renee Joseph)

Or

2nd Alternate

Health Center – Rankin Inlet **1-867-645-2816**

(Head Nurse – Kamlesh Chaabra)

24 Hour Medi-vac Service

Kivalik Air, Rankin Inlet **1-867-645-4455**

(Contact: Anthony Hancock)

Be Prepared to Provide to the Nurse …

1. **Your Name and Location:** **Fraser Bay 1-3 Property Base Camp**

   68°11N / 85°31W

2. **Patient Location:** **(if not in camp)**

3. **Number of Injured Persons:**

4. **Patient Information (for each injured person):**

   a) **Condition:** Conscious / Unconscious

   Nature of Injury

   b) **Age of Patient:**

   c) **History:** What happened?

   When did it happen?

Obtain instruction from Nurse OR First Aid Attendant as to the need for a Medi-vac

If Medi-vac required, contact Medi-vac company (see Page 1) and obtain information as to expected time of arrival (ETA) in camp and …

REPORT back to First Aid Attendant

EMEGENCY CONTACT NUMBERS

Nursing Stations

Primary

Health Center – Repulse Bay **1-867-462-9916**

(Head Nurse – Maria Fraser) **Or** **1-867-462-4083**

1st Alternate

Health Center – Pelly Bay **1-867-769-6441**

(Head Nurse – Renee Joseph)

2nd Alternate

Health Center – Rankin Inlet **1-867-645-2816**

(Head Nurse – Kamlesh Chaabra)

24 Hour Medi-vac Service

Kivalik Air, Rankin Inlet **1-867-645-4455**

(Contact: Anthony Hancock or Diane Erickson)

RCMP

RCMP – Repulse Bay (Emergency) **1-867-462-1111**

(Non-Emergency) **1-867-462-0123**

RCMP – Rankin Inlet (Emergency) **1-867-645-1111**

(Non-Emergency) **1-867-645-0123**

RCMP – Pelly Bay (Emergency) **1-867-769-1111**

(Non-Emergency) **1-867-769-0123**

WSCC

WSCC 24hour Hotline	**1-867-873-7468**
WSCC Main Line (Yellowknife)	**1-867-669-4409**
Martin Van Rooy Direct (Iqaluit)	**1-867-979-8527**
WSCC Main Line (Iqaluit)	**1-877-404-4407**

PROJECT NUMBERS

Project Manager, Andrew Turner Office		**1-780-439-5380**
	Cell	**1-780-231-4117**
Great Slave Helicopters (Yellowknife)		**1-867-873-2533**
Kenn Borek Air (Rankin Inlet)		**1-867-645-2535**
Buffalo Airways (Yellowknife)		**1-867-873-6112**
Lone Peak Drilling		**1-250-421-9028**

Field Numbers

Camp – Logistics Line	**(to be determined)**
Camp – Office Line	**(to be determined)**
Camp – Public Line	**(to be determined)**
Camp – Fax Line	**(to be determined)**
Fraser Bay 1-3 (Drill) SatRad Number	**(to be determined)**
Heli Iridium Numbers	**(to be determined)**

Fixed Wing Iridium Numbers	**(to be determined)**

Other Important Telephone Numbers

ROCHE BAY PLC

President, Benjamin Cox	**Office**	**1-687**
APEX Geoscience (on behalf of)	**Office**	**1-780-439-5380**

Expeditors

Discovery Mining Services – Yellowknife	**1-867-920-4600**
APEX Geoscience – Rankin Inlet	**(to be determined)**
APEX (Logistics) Cell – Rankin Inlet	**(to be determined)**
M&T Enterprises – Rankin Inlet	**1-867-645-2778**

WSCC

Yellowknife Switchboard	**1-867-920-3888**
Toll Free	**1-800-661-0792**
Fax	**1-867-873-4596**
Chief Mine Inspector	**1-867-669-4408**
WSCC Inspector Martin Van Rooy	**1-867-979-8527**
WSCC Inspector Peter Bengts	**1-867-920-4412**
24 Hour Hotline For Serious Accidents	**1-800-661-0792**
Emergency Spill Report	**1-867-920-8130**

Public Health Office – YK	**1-867-920-8646**
Poison Control Center	**1-800-332-1414**

Camp Information

Camp	Status	Latitude	Longitude	Telephone	Level II Supervisor
Base	**Open June 1 until October 2011**	**68º11'**	**85º31'**	**To be determined**	**To be determined**