

# Back River Project Spill Contingency Plan



Revised and Updated by:  
Dan Russell, P.Geo., Environmental Coordinator

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**APPROVALS**

Position	Name	Signature	Date
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**DOCUMENT CONTROL RECORD**

The re-issue of this document, listed below, has been reviewed and approved by management and is authorised for use within the DPM organisation. The footer “control document” is in red. All copies of this document without “control document” in red should be used for reference purposes only.

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## 1.0 INTRODUCTION

### 1.1 Plan Purpose

Dundee Precious Metals Inc. (DPM) is actively exploring the Back River property mineral rights (encompassing the primary exploration camp at Goose Lake, as well as a satellite camp at George Lake and unoccupied claim groups in the areas of Boot Lake and Boulder Pond; Figure 1) and will be spending approximately C\$18 million on exploration in 2007. Advanced exploration programs have been carried out over the previous years. Similar activities are anticipated in 2008 and beyond as DPM continues to advance the project toward eventual production.

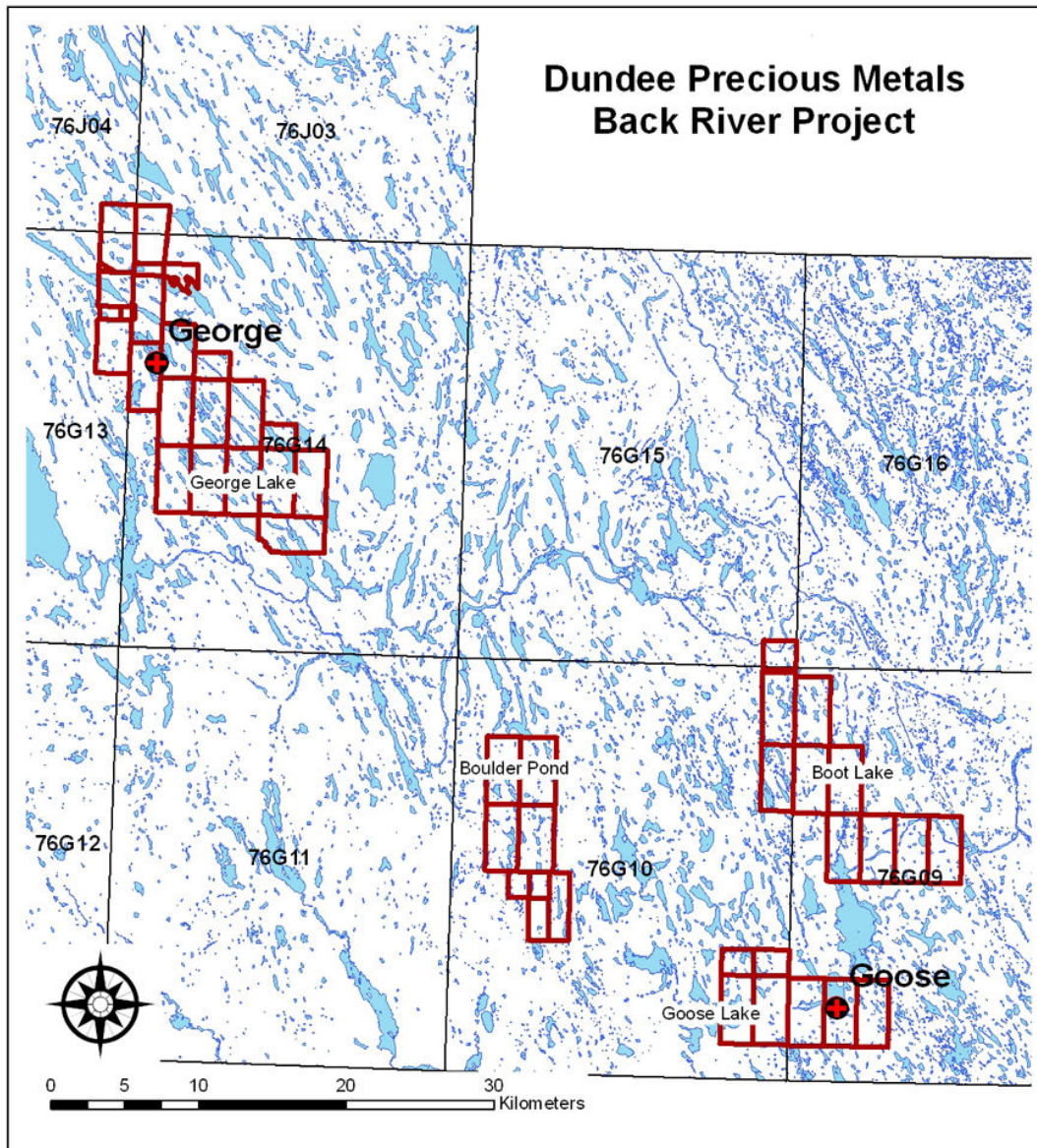


Figure 1. Location map of the Back River exploration project, western Nunavut.

The Back River exploration project is located in western Nunavut, south of Bathurst Inlet within the Slave Structural Province. It lies approximately 525 kilometres northeast of Yellowknife and 400 kilometres south of Cambridge Bay, NU. The project area is within the zone of continuous permafrost, and is represented on National Topographic System 1:250,000 scale map sheets 76G and 76J. Coordinates for the camps are as follows:

- Goose Lake 65°32' north 106°25' west
- George Lake 65°55' north 107°27' west

This document is a review and analysis of the preparedness for events, which may occur due to unforeseen circumstances. The plans and predetermined lines of response detail actions to be taken in the event of unintentional materials release during the ongoing exploration program. DPM plans to carry out the plans in the areas of wastewater, sewage treatment, fuel and chemical storage. This report addresses all project areas within the Back River exploration project. The plan will be updated yearly and would address any significant changes in operating plans, should they occur.

This contingency plan is a living document, and will be amended as required, to accommodate change. It first describes the main facilities to be operated as a component of the ongoing exploration drilling programs, followed by contingency measures to support them. On site activity is planned to run from approximately March to September of each year, due mainly to access limitations. Should operations extend beyond these times, and if operational scenarios change, notification will be made to the appropriate agency.

A copy of the plan will be posted for all exploration staff and visitors to the project site as part of DPM's field orientation program.

### **1.2 Environmental Policy**

DPM is committed to maintain sound environmental practices in all of its activities from exploration through to closure and land relinquishment.

To achieve this, DPM in working with its employees and contractors will:

- Ensure all operations are conducted in an environmentally sound manner to ensure compliance with all applicable national and local regulations;
- Avoid releasing any deleterious substances (including chemical, fuel, drill cuttings or other unauthorized materials) into the environment, and especially any water body;
- Minimize its impacts on land and vegetation;
- Avoid unnecessary disturbance to wildlife from our activities;
- Ensure employees and contractors are familiarized with the requirements for handling of deleterious substances (including fuel) prior to working with them;
- Train all employee and contractors to understand their environmental responsibility related to DPM.

### **1.3 Dundee Precious Metals' Policy on Initiation for Cleanup activities**

It is the policy of DPM to initiate clean up activity when, in the opinion of management, DPM is clearly associated, or likely associated with the spilled product. The guiding principles of DPM's Spill Contingency Plan is to comply with existing regulations to ensure protection of the environment, and to keep employees, government officials and the public aware of our plans.

## **1.4 Spills**

Spills of hydrocarbons or other hazardous materials may occur as isolated events or they may occur with other emergencies such as fire, explosion, natural causes, or an accident.

## **1.5 Risk Management**

The likelihood of a spill incident happening at Back River at either the Goose Lake or George Lake tank farms is very low, due to the double-walled tanks contained in the lined, bermed area, and the prescribed procedures for fuel transfer and anti-siphon devices in the tanks.

The greatest hazards associated with drummed fuel include rupture of drums during movement of heavy equipment around the property or leaks during storage. The first risk can be mitigated through proper operator training of equipment operation, clear marking and segregation of fuel supplies and heightened operator awareness when working near fuel supplies. The second risk is easily mitigated with secondary containment and regular inspection of the drums. Additional hazards are present during refuelling operations (mitigated with drip trays and absorbent mat), and during local drum movement (e.g. from storage to helipads), which is mitigated by using experienced operators, carefully securing the drums to the loader during movement, and safe driving practices.

As the salt is delivered in pelletized form, any spill is easily cleaned up. Regular inspection of the storage area will allow for rapid detection of any spill.

Regular inspections of the greywater line will turn up any leaks in the system which can be repaired quickly. Any issues would likely be noticed by most people in camp as either pools of water/damp spots and/or an odour.

Despite the mitigation measures taken, should any incident arise as a result of human error or unforeseen circumstances, the operating procedures outlined below will be implemented.

## **2.0 PROJECT FACILITY DESCRIPTION**

### **2.1 Existing Facilities and Previous Work**

DPM acquired existing camps constructed by Miramar Bathurst Resources and Kit Resources. The main operating camp is at Goose Lake with a satellite camp at George Lake. The camps will be upgraded either by maintenance done on existing tent frames or adding new wood frame or Weatherhaven type structures. Both camps will be rehabilitated to the extent needed for this year's exploration program. The emergency/survival Weatherhaven shelters at the drills will be lifted back to the nearest camp when the exploration program is finished for the year. A prefabricated Quonset hut was erected at the George Lake camp in 2006 for maintenance on the drills and other equipment.

### **2.2 Domestic Greywater and Sewage**

As an emergency camp/staging area, the George Lake camp has a single Pacto for disposal of human waste. The waste bags are securely enclosed in garbage bags and transported to Goose Lake for incineration. DPM is currently evaluating the option of moving our old incinerator to George Lake for on-site incineration of all combustible waste. Greywater discharge is not an issue as the shower and kitchen facilities are not actively used. At Goose Lake camp sewage is dealt with using a Pacto toilet system with incineration of the ensuing waste. Greywater from the kitchen and shower facilities is screened for coarse particles (e.g. food), and released to a sump for settling, after which it is released to the environment.

### 2.3 Solid Waste

Combustible solid wastes generated from the camp activities are incinerated. A new commercial incinerator was installed at the Goose Lake camp to handle day-to-day waste; the old incinerator may be transported to George Lake to help facilitate the cleanup of that site. Products such as putrescible domestic and office waste are burned. Non combustible wastes such as scrap metal, non-reusable barrels, incinerator ash, etc., are removed from site using back-haul flights to Yellowknife. In 2006 DPM purchased a drum crusher, which is used to crush all waste fuel drums prior to backhauling the drums to Yellowknife for disposal in a fully permitted disposal site.

Although the potential for waste rock (including drill core), currently stored at George Lake core storage or Goose Lake core storage, to be acid producing is unlikely, any such waste would be disposed of in an approved location and under acceptable practices. DPM is currently undertaking preliminary ARD studies.

### 2.4 Fuel Storage

Diesel fuel is required to generate power on-site, heat buildings and to fuel mobile equipment. The diesel fuel storage for the continuing exploration program by DPM consists of 205L drums as well as six 70,000L ULC approved double walled enviro-tanks at Goose Lake camp. A comparable bulk fuel storage facility which consists of two 70,000L ULC double walled enviro-tanks was constructed at the George Lake site in 2006. These tanks are situated within an engineered lined secondary berm which was started in September 2006, and is slated for completion in the summer of 2007. Secondary containment (Instaberm) have been ordered for all of the drummed fuel on site. Initial fuel supplies for 2007 for each camp are as follows:

Fuel	Goose Lake	George Lake
Diesel – Enviro tanks	360,000 L	120,000 L
Diesel – 205 L drums	N/A	750 drums
Jet B – 205 L drums	1000 drums	1500 drums
Gasoline	4000 L	N/A
AvGas – 205 L drums	80 drums	N/A
Propane – 1000# cylinders	4	1
Propane – 100# cylinders	15	~100 (previously on-site)

All barrels are located at least 30 metres above the high water mark of any water body. Despite having bulk storage for diesel we will always have sealed barrels of jet fuel for the helicopters in order to strategically relocate it to an activity area as required. Specialized oils and greases used by the drilling contractors are will be stored in sheds or sea-cans designated for that purpose.

Inventories at each site are dynamic.

### 2.5 Chemicals

DPM is committed to the safe and proper handling of waste materials to ensure minimal environmental impact and land disturbance. Waste chemicals that require special attention and handling are waste oil, hydraulic oil, lubricating oil, calcium hypochlorite, grease, explosives and ethylene glycol.

DPM is examining the option of installing a waste oil furnace at the Goose Lake camp, using the heat generated to heat the maintenance Quonset or the core shacks. This eliminates the need to remove the waste oil from the project area, resulting in a reduction in risk of spill and a considerable cost savings. Waste oil and oil from filters not used in the waste oil-burner will be used as incinerator fuel or backhauled for appropriate disposal. Drained spent oil filters will be stored in drums for removal from the site for disposal at an authorized disposal facility.

There are minimal quantities of reagents such as dilute HCl (<5L), concentrated HNO<sub>3</sub> (vials of <10mL), and other materials on site for geological testing and environmental sample preservation.

Calcium chloride is added to the fresh water to form a brine solution that acts as antifreeze when drilling in permafrost conditions. The drilling return water is reheated and reused using a mega-bag system which catches the drill cuttings as well. Approximately 15,000 50-lb bags were delivered to the project site for 2007.

DPM does not anticipate the need to use explosives during the 2007 exploration season. Explosive products, when on-site, will be stored in appropriate facilities at designated explosives storage site(s).

Small quantities of various household chemicals are on site for domestic use.

Material Safety Data Sheets (MSDS) will be collected and kept at the site for all chemicals and fuel products. Appropriate storage and handling of these products will be undertaken. The action plans for spills of diesel fuel, lubricating and hydraulic oils and ethylene glycol are also included at the end of this report, as well as copies of both the NWT Spill Report and DPM (internal) Spill Report forms.

### **3.0 SYSTEM FAILURE AND PREVENTATIVE MEASURES**

#### **3.1 Domestic Sewage and Waste**

Minimal quantities of domestic waste are transported from the site at George Lake to Goose Lake for incineration. Waste is securely packaged in 1 or more garbage bags and transported in the external basket of the helicopter, which is securely closed. There is a negligible risk of spillage due to the safety protocols strictly enforced by our helicopter contractor.

Waste from the kitchen and Pacto systems at Goose Lake are carried to the incinerator in a small trailer, with virtually no risk of spillage. The greywater lines are routinely inspected for leaks and repaired as necessary. The screens at the greywater sump are cleaned of debris daily.

#### **3.2 Solid Waste**

Failures may occur in the handling of solid waste in the following modes:

- Incinerator at Goose lake fails;
- Wildlife start coming to the greywater sump;
- Accidental damage to the incinerator and it components, or the waste oil heater;
- Mechanical breakdown;
- Improper maintenance.

Visual inspection of the incinerator and its combustion products will be carried out on a regular basis. The incinerator will be operated according to the manufacturer's instructions.

#### **3.3 Fuel**

Fuel spills could potentially occur from:

- Fuel storage containment (tanks, barrels) leaks;
- Spills during drum transport from aircraft to fuel storage area;
- Spills from vehicles or equipment as a result of accidents;
- Spills during fuel transfer from barrels to equipment or heaters.



Spills occurring during fuel handling, transfer or storage operations will be minimized by:

- Secondary containment;
- Proper storage of barrels;
- Regular inspections of the storage facilities and barrels;
- Staff training in proper fuel handling procedures;
- Spill response training for personnel associated with fuel handling;
- Immediate cleanup of minor spills;
- Enclosing spigots on fuel containers with absorbent mat to collect any slow drips.

The potential for spills affecting surface waters is low, as fuel storage and transfer points are located away from watercourses and lakes. Close inspection of fuel transfer activities will be undertaken during all times while fuel is being pumped/transferred to equipment. Secondary containment will be used at all refuelling points and storage areas.

### **3.4 Chemicals**

Any chemicals brought on site are stored in manufacturers approved packaging. Leaks may occur, causing minor spills of chemical product in storage. More likely a leak will occur during the transfer of chemicals or from accidental failure of containers.

DPM provides training to its staff in product handling and inspection procedures, which we feel, will result in reduced occurrences of chemical spills.

## **4.0 INITIAL ACTIONS**

In the event of any leak, spill or system failure, steps taken by company personnel at the spill site are as follows:

- Be alert, ensure your safety and the safety of others first;
- Assess the hazard to persons in the vicinity of the spill or leak;
- Assess nature and status of the spill, leak or system failure and measures to be taken to bring the situation under control;
- When safe to do so, stop the flow of the spilled material;
- Report the spill or leak of container immediately to the Environmental Coordinator or Site Superintendent so they can ensure the appropriate notification is made:
  - ❖ NWT/NU 24-hour spill reporting line (867) 920-8130
  - ❖ Jim Noble at Environment Canada (867) 975-4644
  - ❖ 24-hour Emergencies Pager (867) 920-5131
- Resume safe, effective actions to contain, stop the flow of spilled product or clean up the incident; and
- Record all information on the status of the situation. Take photographs of the site (if possible) before the clean up and after the clean up has been completed.

## **5.0 SYSTEM MALFUNCTION RESPONSES**

### **5.1 Domestic sewage and Solid waste**

Any problems with the sewage disposal system, incinerator or other waste disposal mechanism will be immediately reported to the Site Superintendent.

In the event of a power failure, the stand by generator will be put into operation as soon as possible. Similarly, in the case of a pump failure, the backup pump will be put on-line. Any greywater drainage problems will be processed as quickly as possible to minimize the chance of a spill. However, if necessary, appropriate safety equipment and personal protective clothing will be available to site personnel.

## **5.2 Fuel Spill**

Fuel spills, leaks at storage facilities or vehicle accidents will be handled by following these steps:

- Identify the source of the leak or spill;
- Contact the Environmental Coordinator/Site Superintendent
- Stop leaks from tank or barrel by:
  - ❖ Turning off valves;
  - ❖ Utilizing patching kits to seal leaks;
- Placing plastic sheeting at the foot of the tank or barrel to prevent seepage into the ground: and;
- Contain the spill and the source if possible;
- Take photographs of the spill site before and after the clean up.

Further information on the handling of fuel spills is detailed in section 10 of this report.

### **5.2.1 Fuel Spills on Land**

Fuel spills on land (gravel, rock, soil, vegetation) can be contained by:

- Constructing temporary berms and deploying absorbents;
- Stains on rock can be soaked up with absorbent mats. The mats should be placed in empty drums for storage prior to incineration.

Contaminated soil and vegetation is to be disposed of at an approved facility.

### **5.2.2 Fuel Spills on Snow**

Snow can be an effective natural absorbent for spilled fuel:

- Temporary berms can be made from snow by compacting it and spraying with water to create an ice barrier or lining the snow with plastic;
- The snow-fuel mixture can be scraped up and stored in a lined area or in drums for future disposal; and
- Mark or stake the area affected by the spill so that the site can be revisited and re-evaluated once the snow has melted.

### **5.2.3 Fuel Spills in Waterways or on Lakes**

All spills into waterways (streams or lakes), regardless of the amount, MUST be reported to:

- ❖ NWT/NU 24-hour spill reporting line (867) 920-8130
- ❖ Jim Noble at Environment Canada (867) 975-4644
- ❖ 24-hour Emergencies Pager (867) 920-5131

It is important to immediately limit the area of the spill on water. Booms can be drawn in to encircle spilled fuel. The absorbent mats are hydrophobic (absorbs hydrocarbons and repel water).

- Deploy booms to contain the spill area. Boom effectiveness will be limited by winds, waves and other factors; and
- Use absorbent mats and similar materials to capture small spills on water.

**5.2.4 Fuel Spills on Ice**

Where a spill occurs on ice, snow can be compacted around the edge of the spill to serve as a berm. The ice provides a good barrier to any seepage of fuel into the water, but the contaminated snow/ice must be scraped up as soon as possible.

Permission may be given from the government to burn off fuel on the ice – contact Jim Noble or the 24-hour Emergencies Pager prior to burning. Remaining contaminated snow can be placed in drums in a lined area (on land).

**5.3 Chemical Spills**

Assess the hazard of the spilled material by referring to the relevant MSDS sheet. The following general procedures may be followed:

- If the chemical is hazardous, ensure personnel protective equipment is appropriate utilized (latex gloves, eye protection, etc.) before approaching the spill;
- Use absorbent mats to soak up spilled liquids;
- Plastic sheeting can be utilized to prevent chemicals from being blown around;
- Neutralize acids or caustics; and
- Place spilled material, absorbents, and rags in an open-top drum for storage until ultimate disposal at an approved location.

**6.0 RESPONSE EQUIPMENT**

**6.1 General Equipment**

Heavy equipment used in exploration drilling operations will be available on-site for emergency use to respond to spill incidents. Helicopters and fixed-wing aircraft could also be available. Presently, the facilities are well equipped to respond to emergencies or spills.

**6.2 Spill Kits**

Complete spill kits are located as follows:

<b>Goose Lake Camp</b>		<b>George Lake Camp</b>	
Tank farm	Drummed fuel storage	Tank farm	Drummed fuel storage
Generator	Quonset	Generator	Quonset
Coreshack	Drum crusher		
Incinerator			

The following Items are contained in each Spill Kit:

Quantity	Item
1	45 gal, 16 Gauge Open Top Drum, c/w Bolting Ring & gasket
1	48" x 48" x 1/16" Neoprene Pad (drain Stop);
20	Short Putty Epoxy Sticks
1	Splash Protective Goggles
1	Pkg. - Polyethylene Disposable Bags (5 ml) 10 per Package
1	Shovel (Spark Proof);
1	Case T-123" x 10' absorbent Boom, 4-Booms/Case;
1	Pkg. – Universal absorbent Mats, 16 ½" x 20", 100 Mats per Package
1	Roll – Oil only absorbent mats 150' x 33":

### 6.3 Mobile Environmental Response Unit

A mobile Environmental Response Unit is believed to be available to DPM from a major fuel supplier (Shell) in Yellowknife or Cambridge Bay (for phone number, see Contractors in Section 7). This unit can be transported to the site from Cambridge Bay in less than three hours weather permitting.

## 7.0 RESPONSE ORGANIZATION

### 7.1 Contact Information

The members of the Back River Project Spill Response Team and their duties are listed below. Approximately 10 personnel will be available on-site to assist with spill response activities.

Field Contacts			
Environmental Coordinator	Dan Russell	604-759-0907 416-565-2464	drussell@dundeeprecious.com
Site Superintendant	Dan Stapleton	604-759-0601	dstapleton@dundeeprecious.com
Project Manager	Bill Cronk	604-759-0638	bcronk@dundeeprecious.com
Senior Project Geologist	Cam Bartsch	604-759-0638	cbartsch@dundeeprecious.com

Office Contacts			
Exploration Manager	Doug Cater	416-365-5191	dcater@dundeeprecious.com
Office Manager (Vancouver)	Carra Hodgson	604-484-4223	chodgson@dundeeprecious.com

Additional assistance may be obtained as necessary from the following organizations:

Potential Back River DPM Contractors:		
Discovery Mining Services, Yellowknife	Rod Brown	(867) 920-4600
Shell Canada, Mobile Environmental Response	Steve Bassett	(867) 874-2562
Drill Contractor-Bradley Bros.	Art Murdy	(819) 797-0755
Kitnuna	Wilf Wilcox	(867) 983-2331
Nuna Logistics Ltd.	Court Smith, John Zigarick	(867) 682-4667

Potential Local Air Charter	
Air Tindi, Dispatch	(867) 669-8218
NWT Air (First Air), dispatch	(867) 669-6645
First Air Dispatch	(867) 669-6682
Great Slave Helicopters	(867) 873-2081
Summit Air	(867) 667-7327

<b>Potential Equipment and Material Suppliers:</b>	
Dupont (Fuel Dye)	(905) 821-5660
Frontier Mining (Sorbents)	(867) 920-7617
Acklands (sorbents)	(867) 873-4100 (867) 920-5359

**Other contacts which may be of some assistance:**

<b>Nunavut/NWT</b>			
NWT Resources, Wildlife & Economic Development (RWED)		Environmental Protection Services	(867) 873-7654
	Philip Lee	Regional Superintendent	(867) 920-6134
	Grant Corey	Cambridge Bay	(867) 983-7315
Nunavut Department of the Environment, Iqaluit			(867) 982-7240
	Gladis Lemus	Acting Director	(867) 975-5910
Workers Compensation Board, Yellowknife			(867) 920-3888
	Sylvester Wong	Director Prevention Services	(867) 669-4408
	Peter Bengts	Mine Safety	(867) 669-4412
Kitikmeot Inuit Association (KIA)	Geoffry Clark	Director of Lands, Environment and Resources	(867) 982-3310
	Stanley Anablak		
Nunavut Water Board	Dionne Filiatreault	Executive Director	(867) 360-6338
	Phyllis Beaulieu	Manager of Licensing	

<b>Federal Government</b>			
Environment Canada	Craig Broome	Manager of Enforcement	(867) 669-4730
	Wade Romanko	Environmental Emergencies Officer	(867) 669-4736
	Cindy Parker		(867) 975-4631
Indian & Northern Affairs Canada (INAC)	Andrew Keim	Water Resources Officer	(867) 975-4289
	Peter Kugusak	Manager of Field Operations	(867) 975-4295
Fisheries and Oceans	Margaret Keast		(867) 979-8000
RCMP (Yellowknife)			(867) 669-1111
RCMP (Cambridge Bay)			(867) 983-2111

**7.2 Responsibilities**

**7.2.1 All Employees (First Responders):**

- Identify the source of the spill;
- Assess the initial severity of the spill and any safety concerns;
- Report all spills immediately to Supervisor;
- Determine the size of the spill and stop or contain it, if possible;
- Participate in spill response as member of cleanup crew.

**7.2.2 Emergency response Team (Spill Cleanup Crew):**

- Conduct cleanup of spills under direction of Environmental Coordinator/Site Superintendent;
- Deploy boom, absorbent pads and other equipment and materials as required;
- Take appropriate measures;
- Continue cleanup as directed by Environmental Coordinator/Site Superintendent or until relieved.

### **7.2.3 Environmental Coordinator/Site Superintendent:**

- Report spill to Project Manager;
- Obtain GPS coordinates for all spills;
- Obtain photographs of spill site before clean up starts if possible and after the cleanup has been completed. Take pictures of undisturbed area beside the spill area for a comparison. If spill occurs on snow, stake or otherwise identify the affected area so that it can be evaluated once the snow melts;
- Assist in initial and ongoing response efforts;
- Supervise emergency response team;
- With work crew, take initial action to remove the source and contain spill;
- Continue actions until relieved by other personnel;
- Decide with Environmental Coordinator/Site Superintendent if mobilization of additional equipment from a Spill Response Organization or Contractor is warranted;

### **7.2.4 Environmental Coordinator**

- Reports spill to 24-hour Spill Reporting Line or Jim Noble at Environment Canada
- Contact the Emergency Response Team if required;
- Records the time of the report, source of information and details on location, size, type of spill and any other information and details on either the DPM (<25 L) or NWT (>25 L or any spill into a water body) spill report form;
- Together with the Site Superintendent and Project Manager decide if additional equipment and manpower is required to contain and cleanup spills;
- Oversees completion and distribution of spill report;
- Ensures investigation and identifies measure to prevent similar spills;
- Liase with NWT applicable agencies regarding on-going cleanup activities;
- Co-ordinate inspections and spill closure by applicable agencies;
- Organizes spill response training and exercises;
- Updates and distributes Spill Contingency Plans.

### **7.2.5 Site Superintendent**

- Ensures cleanup is completed to DPM's objectives and standards;
- Provides update to Environmental Coordinator/Project Manager/Senior Project Geologist;
- Liase with NWT applicable agencies regarding on-going cleanup activities;
- Conducts ongoing monitoring of cleanup operations leading to close-out;
- Ensures Emergency Response Team is adequately trained in spill response;
- Organizes spill response training and exercises.

### **7.2.6 Project Manager/Senior Project Geologist**

- Provides advice, when requested, to the Senior Exploration Geologist, the On-Scene Coordinator, the Environmental Coordinator and the Site Superintendent on handling the spill situation;
- Assists in developing effective spill management and prevention practices; and
- Provides advice, when requested, to the On-Scene Coordinator, the Spill Cleanup Supervisor and the Site Superintendent on storage and disposal options.

### **7.2.7 Legal Counsel**

Advises the Project Manager and the Senior Project Geologist on matters related to:

- Legislative authority of various government agencies;
- Questions of due diligence;
- Costs/fines and liabilities, including penalties associated with regulations; and
- Consults with the corporation coordinator and advises on matter related to insurance.

## **8.0 REPORTING PROCEDURES**

The spill response team must be notified immediately of any spill. Communication on-site will be via radio and other centers by satellite phone. The Environmental Coordinator/Site Superintendent or designate will ensure spills are reported as required and that the relevant form is filled out as completely as possible. *It is the intention of DPM to report all spills over 25 litres and to maintain an inventory of all spills less than 25 litres, which can be viewed by any inspector or agency representative.*

## **9.0 TRAINING AND SPILL EXERCISES**

### **9.1 Training**

All members of the Spill Response Team will be trained and be familiar with the spill response equipment, including their location and access, the Spill Contingency Plan and appropriate spill response methodologies. During 2007 the onsite-training program for the Back River Project will be initiated at the start of the field program. The training program includes the dissemination of information regarding the Spill Contingency Plan, the Nunavut environmental Protection and Spill regulation, and the field application of suitable techniques.

All DPM personnel will be familiar with spill reporting requirements.

Fuel handling crews will be fully trained in the safe operation of these facilities, spill prevention techniques and initial spill response. Similarly, the staff involved in wastewater treatment operations will be trained in the safe and effective operation of these facilities.

### **9.2 Spill Exercises**

DPM will conduct regular spill exercises to test the response of the Spill Response Team to manage fuel and other system failures.

Reports will be made by the Site Superintendent or designate, noting the response time, personnel, and problems or deficiencies encountered. These reports will be used to evaluate the ability to respond to spills and determine areas necessary for improvement.

## **10.0 ACTION PLAN FOR SPILL OF DIESEL OR JET FUEL**

Initial Spill Responses:

- **STOP** the flow if possible;
- **CONTAIN** flow of oil by dyking, barricading or blocking flow by any means available. Use earth moving equipment if practical;
- **ELIMINATE**, open flame ignition sources;
- If flow has reached any natural stream, mobilize team to deploy river boom, and sorbent booms; and

- If possible, pump fuel into other appropriate tankage/containers.

Hazards:

- Flammable
- Slightly toxic by ingestion, highly toxic if aspired

Action for Fire:

- Use carbon dioxide, dry chemical, foam, or water spray (fog), although water may spread the fire;
- Use fog streams to protect rescue teams and trapped people;
- Use water to cool surface of tanks;
- Divert the fuel to an open area and let it burn off under controlled conditions;
- If the fire is put out before all diesel is consumed, beware of re-ignition;
- Where diesel fuel is running downhill, try to contain it as quickly as possible; and
- Rubber tires are almost impossible to extinguish, have affected vehicles removed from the danger zone.

Recovery:

- Unburned diesel fuel can be soaked up by sand and peat moss, or by chemical sorbents such as Grabil or Conwed;
- If practical, contaminated soil should be excavated;
- Diesel fuel entering the ground should be recovered by digging sumps or trenches; and
- Diesel fuel on a water surface should be recovered by skimmers or sorbent booms. (See Section on Recovery of Oil Spills)

Disposal:

- Incineration under controlled conditions; and
- Burial at an approved site.

Properties:

- Chemical composition mixture of hydrocarbons in the range C9 to C18;
- Clear, oily liquid; and
- Not soluble, floats on water

Environmental Threat:

- Moderately toxic to fish and other aquatic organisms;
- Harmful to waterfowl; and
- May create visual film on water and shorelines.

Containers:

- Transported by appropriate methods to acceptable storage, (typically 205 litre drums);
- Bulk transportation and storage.

## 11.0 ACTION PLAN FOR ETHYLENE GLYCOL (ANTIFREEZE) SPILL

Initial Spill response:

- **STOP** the flow at source if possible;
- **ELIMINATE** open flame ignition sources;
- **CONTAIN** flow of liquid by dyking, barricading or blocking flow by any means available; and
- **PREVENT** antifreeze from entering any flowing streams or open water – antifreeze is **HIGHLY** soluble in water and cannot be contained if spilled.



Hazards:

- Moderately toxic by ingestion and inhalation; and
- Flammable.

Action for Fire:

- Use carbon dioxide, dry chemical, foam or water spray (fog);

Recovery:

- Ethylene glycol antifreeze can be soaked up by peat moss or by commercial sorbents such as Hazorb; and
- Access to spilled or recovered ethylene glycol by mammals should be prevented.

Disposal:

- Incineration under controlled conditions; and
- Burial at an approved site.

**12.0 INTERNAL DPM SPILL REPORT FORM**




**Back River Spill Report**

This form is to be used for internal documentation of spills of any petroleum product, chemical, ethylene glycol (antifreeze), or other hazardous material in quantities of less than 25L. For quantities in excess of 25L, spills MUST be reported to the NWT/NU 24-hour spill reporting line (867-920-8130), and the appropriate form filled in. ALL spills (regardless of quantity) into a water body must be reported to the spill reporting line.

<b>Report Date and Time:</b>				<b>Spill Date and Time:</b>			
<b>Spill Location:</b> <input type="checkbox"/> Goose Lake <input type="checkbox"/> Other (e.g. Drill, Boulder Pond) <input type="checkbox"/> George Lake				<input type="checkbox"/> Spill occurred			
				<input type="checkbox"/> Spill observed			
<b>Describe Location:</b>							
<b>Coordinates (Lat/Long or UTM):</b>							
<b>Product(s) Spilled:</b>	Jet fuel	Diesel (P50)	Gasoline	AvGas	Oil (type)	Antifreeze	Other (describe)
<b>Quantity (L or kg):</b>							
<b>Personnel Involved:</b> <input type="checkbox"/> DPM Employee <input type="checkbox"/> Contractor <input type="checkbox"/> Visitor <input type="checkbox"/> Other							
<b>Cause of Spill:</b>							
<b>Containment/Cleanup Measures Taken:</b>							
<b>Factors Affecting Spill or Recovery (weather, snow, ground conditions, etc.):</b>							
<b>Additional Action Required:</b>							
<b>Additional Comments:</b>							
	<b>Name</b>	<b>Employer</b>	<b>Signature</b>				
<b>Reported by:</b>							
<b>Reported to:</b>							

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13.0 NWT SPILL REPORT FORM

		<h2 style="margin: 0;">NWT SPILL REPORT</h2> <p style="margin: 0;">(Oil, Gas, Hazardous Chemicals or other Materials)</p>		24 – Hour Report Line Phone: (867) 920-8130 Fax: (867) 873-6924	
<b>A</b> Report Date and Time	<b>B</b> Date and Time of spill (if known)	<b>C</b> <input type="checkbox"/> Original Report <input type="checkbox"/> Update no. _____	Spill Number		
<b>D</b> Location and map coordinates (if known) and direction (if moving)					
<b>E</b> Partly responsible for spill					
<b>F</b> Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)					
<b>G</b> Cause of spill					
<b>H</b> Is spill terminated? <input type="checkbox"/> yes <input type="checkbox"/> no		<b>I</b> If spill is continuing, give estimated rate		<b>J</b> Is further spillage possible? <input type="checkbox"/> yes <input type="checkbox"/> no	
<b>L</b> Factors effecting spill or recovery (weather conditions, terrain, snow cover, etc.)				<b>M</b> Containment (natural depression, dikes, etc.)	
<b>N</b> Action, if any, taken or proposed to contain, recover, clean up or dispose of product(s) and contaminated materials					
<b>O</b> Do you require assistance? <input type="checkbox"/> no <input type="checkbox"/> yes, describe:			<b>P</b> Possible hazards to person, property, or environment; eg. fire, drink water, fish or wildlife		
<b>Q</b> Comments or recommendations				<b>FOR SPILL LINE USE ONLY</b>	
				Lead agency	
				Spill significance	
				Lead Agency contact and time	
				Is this file now closed? <input type="checkbox"/> yes <input type="checkbox"/> no	
Reported by	Position, Employer, Location	Telephone			
Reported to	Position, Employer, Location	Telephone			
NWT 1752/0202					