CAMECO CORPORATION

SPILL CONTINGENCY AND FUEL MANAGEMENT PLAN

TURQAVIK – ABERDEEN PROJECT

Aberdeen Lake Area, Nunavut

Effective Date: January 1, 2012

Prepared by: Allison Rippin-Armstrong, Gerard Zaluski

RECORD OF REVISIONS

Rev. No.	Date	Section	Description of Revision	Prepared/Revised by
0	28 February 2006	All	Initial issue	Arnold Moen Nijssen / Peter Zeljeznak
1	18 January 2007	1.0, 4.0 5.0, 6.0, 8.0	To incorporate drilling and winter activity	Peter Zeljeznak
2	03 April 2007	4.1	Add Environment Canada contact	Garth Drever
3	27 April 2007	2.0	Global manager change	Peter Zeljeznak
4	16 January 2008	1.0; 2.0; 4.0	Exploration program and management changes	Rebecca Hunter
5	22 May 2008	4.1; 7.0 (new)	Phone number changes, and added overland transport precautions	Rebecca Hunter
6	17 March 2009	9.0, 4.0	Phone numbers changed, drilling additives and lubricants added to hazardous materials list.	Joel Lesperance
7	19 January	1.0, 4.1, 6.0	Modified introduction, telephone roster, removed ATV section.	Rebecca Hunter
8	28 January	9.0, 9.1	Added coolant and Boart drill additives to MSDS list. Added quantity of fuel stored for 2010.	Joel Lesperance, Rebecca Hunter
9	May 19, 2010	4.0, 4.1	Added Reportable Spill Quantities table, changed contact phone numbers. Added a copy of the NT-NU Spill Report Form as Appendix 2. Modified Camp Detail Map.	Ekaterina Savinova
10	August 8, 2011	1.0, 4.0, 4.1, 4.2, 5.0, 5.1, 5.2, 5.3, 9.1	Fuel cache locations, contact names and numbers. Updated ERP and action plans for bulk fuel storage.	Brady Balicki, Gerard Zaluski
11	January 5, 2012	All	Entire Plan reformat, reconfiguration	Allison Rippin-Armstrong, Gerard Zaluski

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APPENDICES

1. INTRODUCTION AND PROJECT DETAILS

The staff of Cameco Limited ("Cameco") have prepared this Spill Contingency and Fuel Management Plan ("Contingency Plan") for exploration and camp activities at their Turqavik-Aberdeen Project, located in the Aberdeen Lake Area, Nunavut. This Contingency Plan demonstrates that Cameco has appropriate response capabilities and measures in place to effectively address potential spills at its Turqavik-Aberdeen Project site.

1.1 Company Information

Name of Company: Cameco Limited

Project Location: Turqavik-Aberdeen Project

- Present camp location: Southwest shore of Qamanaarjuk Lake, approximate coordinates 64^{O} 37′ 43″ N, 97^{O} 59′ 40″ W
- Proposed Aberdeen camp location: approximate coordinates 64^{O} 23′ 30″ N, 98^{O} 27′ 54″ W
- Present Fuel caches: Main cache: 64^{O} 27′ 24″ N, 97^{O} 54′ 18″ W
  Secondary cache: 64^{O} 22′ 00″ N, 98^{O} 25′ 26″ W
- Proposed Bulk Fuel Storage Site: Proximal to camp, approximate coordinates 64^{O} 23′ 35″ N, 98^{O} 28′ 3″ W
-

Mailing Address: 2121 - 11th Street West
Saskatoon, SK
S7M 1J3

Phone Number: (306) 956-6359
Fax Number: (306) 956-6390

Email: rebecca_hunter@cameco.com

Attention: Rebecca Hunter, Project Geologist

1.2 Effective Date

The effective date of this Contingency Plan is of January 1, 2012.

1.3 Last Revisions to Spill Contingency Plan

The last revisions to the Contingency Plan were prepared during August 2011 with the overall Plan re-written and re-formatted by Allison Rippin-Armstrong to conform with AANDC's *Guidelines for Spill Contingency Planning* (April 2007), Nunavut's regulation R-068-93 *Spill Contingency Planning and Reporting Regulations*, and AANDC's Guidelines for Spill Contingency Planning (2007).

1.4 Distribution List

The appropriate procedures in this plan are to be followed for handling fuel, chemicals and hazardous materials and for product spills and/or emergencies. The responsible supervisor will determine what additional action is required in each instance.

All employees and contractors will be introduced to this plan and made aware of where it is kept during their onsite orientation. Employees and contractors issued this plan must become familiar with its contents relevant to their responsibilities.

This plan has been distributed directly to:
Internal:

- Rebecca Hunter, Project Geologist, Exploration, Nunavut & NWT
- Gerard Zaluski, District Geologist, Exploration, Nunavut & NWT
- Wayne Summach, Program Manager, Emergency Preparedness
- John Zaidan, Superintendent, Transportation and Safety

External:

- Nunavut Water Board (NWB)
- Aboriginal Affairs and Northern Development Canada (AANDC)
- Kivalliq Inuit Association (KivIA)
- Nunavut Impact Review Board (NIRB)

1.5 Purpose and Scope

The purpose of this Contingency Plan is to outline preventative measures and response actions in the event of spills. The Contingency Plan identifies:

- Key response personnel;
- Roles and responsibilities;
- Equipment and other resources;
- Spill response procedures;
- List of hazardous materials on site;
- Figures including a map showing the location of spill kits; and
- MSDS sheets, as well as the equipment and other resources available to respond to a spill.

This document details procedures to minimize potential health and safety hazards, environmental damage and describes appropriate cleanup efforts. The format of the plan ensures quick access to relevant information required for spill response.

1.6 Company Environmental Policy

Consistent with our vision, values and measures of success, Cameco recognizes the safety and health of its workers and the public, protection of the environment, and quality of our processes as the highest corporate priorities during all stages of our activities, which include exploration, development, operations, decommissioning and reclamation. As such, we are striving to be a leading performer through a strong safety culture and our commitment to the following principles:

- Keeping health hazards, including radiation exposures, and environmental risks, at levels as low as reasonably achievable;
- Preventing pollution;
- Complying with and moving beyond legal requirements;
- Ensuring quality of processes, products and services; and
- Continually improving our overall performance.

1.7 Regulatory Framework

Several regulatory requirements, regulations and guidelines are both directly and indirectly linked to spill contingency planning and reporting in Nunavut. These include:

- *Nunavut/NWT Mine Health and Safety Regulations* – specifically Part VIII, Division 3
- *Spill Contingency Planning and Reporting Regulations of the Environmental Protection Act*
- *Environment Canada's Environmental Emergency (E2) requirements*
- *Environment Canada's Guidelines for the Preparation of Hazardous Material Spill Contingency Plans, 1990*
- *Environment Canada's Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*
- *Indian and Northern Affairs Canada Reporting of Minor Spills on Frozen Waterbodies Used as Working Surfaces, n2005*
- *Indian and Northern Affairs Canada Spill Reporting Protocol for Mining Operations in the Northwest Territories and Nunavut, 2004*
- *Transportation of Dangerous Goods (TDG) Act and Regulation*
- *Workplace Hazardous Materials Information System (WHMIS)*
- *Canadian Environmental Protection Act*
- *Fisheries Act*
- *Canadian Environmental Quality Guidelines*
- *Canadian Standards Association (CSA) Emergency Preparedness and Response*

1.8 Project Description

The current camp location on the southwest shore of Qamanaarjuk Lake is used as a camp and staging area for exploration work. Permits and licences currently exist covering the camp, fuel caches and exploration activities however Cameco is in the process of amending and applying for renewal permits and licences, along with a new camp location and bulk fuel storage area. The camp is operated during active exploration programs.

1.9 Site Description

The project area is composed of mineral claims in the Aberdeen Lake area, with the midpoint of the project area located approximately 100 kilometres west-northwest of Baker Lake. It is a remote area, with no adjacent communities or inhabitants. Thus the only people immediately affected by a potential spill are employees or contractors.

The present camp is located on the southwest shore of Qamanaarjuk Lake located at 64^{O} 37′ 43″N, 97^{O} 59′ 40″W. The majority of the fuel is cached at two sites, the main cache at 64^{O} 27′ 24″N, 97^{O} 54′ 18″W and a smaller cache at 64^{O} 22′ 00″N, 98^{O} 25′ 26″W.

This plan includes a new camp location (Aberdeen camp) proposed near 64^{O} 23′ 30″N, 98^{O} 27′ 54″W along with a bulk fuel storage location proposed to be proximal to the new Aberdeen camp location (64^{O} 23′ 35″N, 98^{O} 28′ 3″W). It also includes exploration work including drilling for 2012.

During the 2012 spring operations, the contractors will transport two diamond drills, rods, fuel, materials, and other supplies overland using low-ground pressure vehicles (tracked LMC 5700 ski hill groomers) and sleds pulled by same. Diamond drills will be heli-lifted between drill sites,

eliminating the need for additional mobilization equipment. All efforts will be made to minimize impact on the environment and will be exercised at all times during the exploration program.

Most of the supplies and personnel will be shuttled to camp from Baker Lake with fixed wing aircraft or helicopter. One of the primary selection criteria for the campsite was for it to have an adjacent natural or close-to-natural airstrip capable of use by large-tired single or twin-engine aircraft (such as the deHavilland Otter or Twin Otter), this situation will facilitate any emergency response supply. The largest quantities of hazardous materials involved in the proposed operation will constitute liquid fuel. The majority of this is stored at the fuel caches, all in secondary containment berms. A bulk fuel storage facility is proposed for 2012, which will consist of 11 double-walled storage tanks of 50,000 litres in capacity, 6 for aviation fuel and 5 for diesel.

Personnel and supplies will be airlifted by helicopter from the amp to and from the drill site on a daily basis. A portable insulated shelter will be on site at the drill throughout the drill program.

Figure 1, details the location of the Turqavik and Aberdeen project in Nunavut and Figure 2 is a detailed map showing the property's constituent mineral claims. Figure 3 is a map of the Aberdeen camp site (Figure 3a is the Qamanaarjuk Lake campsite). Figure 4 illustrates the proposed 2012 diamond drilling areas.

1.10 Hazardous Materials On-Site

The following products will be the most commonly used hazardous materials at this Cameco Corporation operation. The list is subject to change based on product replacements, etc. Any future revisions of this plan will reflect these changes. All Material Safety Data Sheets (MSDS) will be kept together in a binder in the camp office and will be available to all personnel. A digital copy of all MSDS sheets will also be stored on the internal network at camp. MSDS sheets are found in Appendix D.

Common Liquid Fuels

- Propane - Dimethylmethane fuel used for cooking and heating hot water, stored in 100-pound steel cylinders.
- Regular Unleaded Gasoline - Automotive fuel for use in pumps and snowmobiles, stored in 206-litre steel drums.
- Jet A-1 Aviation Fuel - Aviation turbine fuel (Kerosene Type) for use in helicopter and coil heaters (used in coil heaters when contaminated), stored in six 50,000 L double-walled storage tanks. Fuel may also be stored in 205 litre steel drums in secondary containment berms at the two fuel caches. See Figure 2 for location
- Arctic P-50 Low Sulphur Diesel - Automotive fuel used in generator and coil heaters at drill, stored in five 50,000 L double-walled storage tanks. Diesel may also be stored in 205 litre steel drums in secondary containment berms at the two fuel caches, with smaller amounts at the camp and at drill sites. See Figure 2 for location

Lubricants

Various engine and mechanical lubricants on site (camp):

- Mobile Jet Oil II - Aviation Turbine Lubricant/Oil.
- Aeroshell Grease 22 - Aviation lubricating grease.
- Aeroshell Grease 7 - Aircraft lubricating grease.
- 10W 30 Engine Oil - Used for generator engine.

Battery Electrolyte: Sulphuric Acid In Battery Cells

- Battery electrolyte - sulphuric acid in battery cells.

Coolants

- Antifreeze – Ethelene Glycol antifreeze for use as engine coolant.

Drilling Additives

(Core Tech Diamond Drilling Additives (from previous contractor still on site))

- Extreme Number One Granular Drilling Mud Polymer - High grade, Anionic, Acrylamide Copolymer in the form of a free flowing coarse white powder.
- Extreme Super G - Environmentally friendly biodegradeable polymer in powder form for use with drilling fluid.
- Extreme Stop - Specially developed extremely absorbent stable polymer powder.
- Extreme Linseed Lube - Linseed soap used in drilling operations to reduce cutting compaction.
- Extreme Super-G Gold - Environmentally friendly, biodegradable liquid drilling fluid polymer, used in replacement of bentonite.
- Extreme Rod Grease: High Tack Diamond Drill Rod Grease - Hydro treated neutral base oil used for drilling operations.
- Extreme Torq-EEZ: Liquid Drill Rod Lubricant – Stable, pressure reducing non-flammable lubricant in liquid form used for reducing drill rod friction on borehole wall.

(Boart Longyear Diamond Drilling Additives (majority stored at Kiggavik – Areva's camp))

- 550X Polymer – Drilling mud additive, anionic water soluble polymer.
- PD650 – Drilling mud additive, anionic water soluble polymer.
- Linseed Soap – Drilling lubricant.
- Lubtub – Drilling fluid additive, polymer salt.
- Calcium Chloride - Used to prevent freezing of drill hole while drilling in permafrost conditions.

1.10.1 Types and Number of Storage Containers

Fuel to be stored at each location:

Main Cache

• Diesel	700	205 l drums, or in bulk (see below)
• Gasoline	4	205 l drums
• Aviation fuel	1700	205 l drums, or in bulk (see below)
• Propane	30	100 lb cylinders

Secondary Cache

Bulk Fuel Storage

- Diesel – five (5) 50,000 l double-walled storage tanks
- Jet Fuel – six (6) 50,000 l double-walled storage tanks

1.10.2 Storage Location

There are currently two fuel caches established for this project:

- Main cache: 64^{O} 27′ 24″ N, 97^{O} 54′ 18″ W
- Secondary cache: 64^{O} 22′ 00″ N, 98^{O} 25′ 26″ W

Cameco is proposing and has applied to permit a bulk fuel storage site at the main cache to be located proximal to the new camp location, at 64^{O} 23′ 35″ N, 98^{O} 28′ 3″ W.

1.11 Existing Preventative Measures

The first step in spill response is to take actions to prevent the spill from occurring. Regular worksite inspections will be conducted to identify potential areas of concern and implement measures to minimize the risk of spills. All personnel who handle fuel and/or chemicals as part of their work duties will be trained on safe handling and proper procedures. Cameco will support the following general principles in an effort to reduce the potential for spills:

- Regularly inspect all fuel and chemical storage areas;
- Maintain records of inspections on site. Records will be made available to the Inspector upon request;
- Provide training to all personnel who handle fuel, chemicals and hazardous materials;
- Keep storage areas secure from unauthorized access;
- Store fuel, chemicals and hazardous materials and wastes in secondary containment;
- Keep drums and containers sealed or closed when not in use;
- Segregate incompatible products;
- Provide up to date, current MSDS for all hazardous materials on site;
- Emphasize a culture of prevention;
- Ensure chemical storage areas are protected from weather and physical damage; and
- Provide sufficient spill kits at convenient locations to storage areas for fuel, chemicals, and hazardous materials and wastes.

<u>Steel Drums</u>

Steel drums will be stored in such a manner that they will not be susceptible to tipping over, rolling or otherwise being unstable. Care will be exercised so that nothing can cause damage to steel fuel drums by falling or rolling onto or into them. When unloading steel fuel drums from aircrafts, the use of a ramp or a cushion (automotive tire) will ensure that they are not damaged. All fuel caches >4,000 L will be stored in secondary containment berms.

Liquid fuel in steel drums, as well those contained within the bulk fuel storage will be stored well back from the lakeshore, and above the high water mark of any water body. Steel drums will be located on durable ground. Steel drums will be inspected on a regular basis for any signs of damage, leaks or spills.

<u>Bulk Storage, Liquid Fuel from Reservoir and Distribution Lines</u>

As per CCME guidance, fuel will be stored in 11 double-walled tanks with a capacity of 50,000 L to ensure secondary containment of the fuel tanks located at the bulk fuel storage location.

In addition, secondary containment or surface liners of adequate size and volume will be utilized during all fuel or hazardous substance transfers, and will be placed under all barrels as

well as transfer locations. This secondary containment system will meet the requirements as described in the 2003 CCME Guidance Document PN 1326. Transfer operations will be attended by trained personnel at all times. Absorbent materials and spill kits will also be on hand during the transferring of fuel.

Stability of all reservoir and distribution assemblies is of utmost importance to ensure that the risk of damage is minimized. All stands for reservoirs will be constructed to strength standards beyond those required. Distribution lines from reservoirs to appliances will be fitted with an appropriate shut-off valve immediately downstream from the reservoir. The line will be installed in such a way to avoid wind chafing, the potential for damage by animals and with safety in mind with regard to tripping hazards. This will be done by securing it to rigid structures, encasing it in armor or any other effective manner. These measures apply broadly to heating oil, gasoline and propane set-ups.

Double-walled EnviroTanks provide acceptable secondary containment. However, to further reduce the risk of spills, secondary containment will be placed under associated piping, and during fuel transfers.

The operations and maintenance for the bulk storage on site will be compliant with the CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products (COP), 2003. Cameco will have formal procedures for inventory control, inspections, maintenance and fuel transfer.

Propane

Propane will be stored in appropriate, certified containers. Propane containers will be inspected and monitored on a regular basis for any signs of deterioration or corrosion. Containers will be secured and fastened in an upright position to ensure there is no risk of damage to the regulator in the event of a fall.

Battery Acid

Acquisition of non-spillable Optima batteries will reduce the risk of a spill of this type. Optima batteries can be shipped by air, they are exempt from UN2800 classification. All batteries will be protected from damage by fastening them into the space designed for them when used with various power equipment and stored safely when not in use.

Overland Transport

The following are precautions taken when transporting materials overland:

- Speed on winter roads should not exceed 30 km/h for fully loaded vehicles and 50 km/h for empty vehicles.
- Trucks should carry at least 10 square metres of polyethylene material (for lining a trench or depression), a spark proof shovel and oil absorbent blankets and squares.
- Trucks should carry reliable radio and/or satellite communication.
- Trucks should carry sufficient response equipment for the safe removal of fuel from an overturned truck (such as hatch cone covers, hoses etc.)
- Spills will be reported as quickly as they can and that time will depend on the extent of the spill and the remoteness of the situation.

Petroleum Transfer

To minimize fuel spills associated with dispensing, filling or transferring fuel, all activities are attended. Smoking is prohibited in fuel storage and fuelling areas at all times. Fuel transfer is carried out by trained personnel only.

Location and Contents of Spill Kits

Spill kits, of various sizes and contents, are located throughout the project area based on needs and size of fuel cache. Three (3) 206 litre drum overpack kits (SPC A95) and two (2) spill locker spill kits (SPC SKA-SL) located at the camp (near generator shack and helicopter fueling area) and fuel caches. Spill kits include:

- Socks
- Absorbent pads
- Absorbent pillows
- Caution tape
- Gloves
- Safety goggles
- Protective coveralls
- Disposal bags
- Instructions

Additionally, Cameco will keep one empty drum at fuel caches. Spill kits will be stored at each fuel cache, fuel transfer and refueling stations.

1.12 Additional Copies

Copies of the Contingency Plan are kept on-site at all times at the fuel storage areas, in the office and in the kitchen building. A copy is also held at the company's head office in Saskatoon, Saskatchewan. Additional copies of the Contingency Plan can be obtained by contacting the company directly at the phone number, fax number of email presented in Section 1.1.

2. RESPONSE ORGANIZATION

An immediately reportable spill is defined as a release of a substance that is likely to be an imminent environmental or human health hazard or meets or exceeds the volumes outlined in Nunavut's regulation R-068-93, *Spill Contingency Planning and Reporting* (Table 2 Spill Reporting Quantities). It must be reported to the NU 24-Hour Spill Report Line at 867-920-8130. Any spills less than these quantities do not need to be reported immediately to the spill reporting line. Rather, these minor spills will be tracked and documented by the company and submitted to the appropriate authority either immediately upon request or at a pre-determined reporting interval. If there is any doubt that the spilled or released quantity exceeds reportable levels, the spill will be reported to the NU 24-Hour Spill Report Line.

Emergency satellite phones are located in the camp office. In the event of a spill involving danger to human life these phones will be used to contact emergency response personnel. In addition, all employees and contractors carry two-way radios for communication with the Camp Manager and other staff on site.

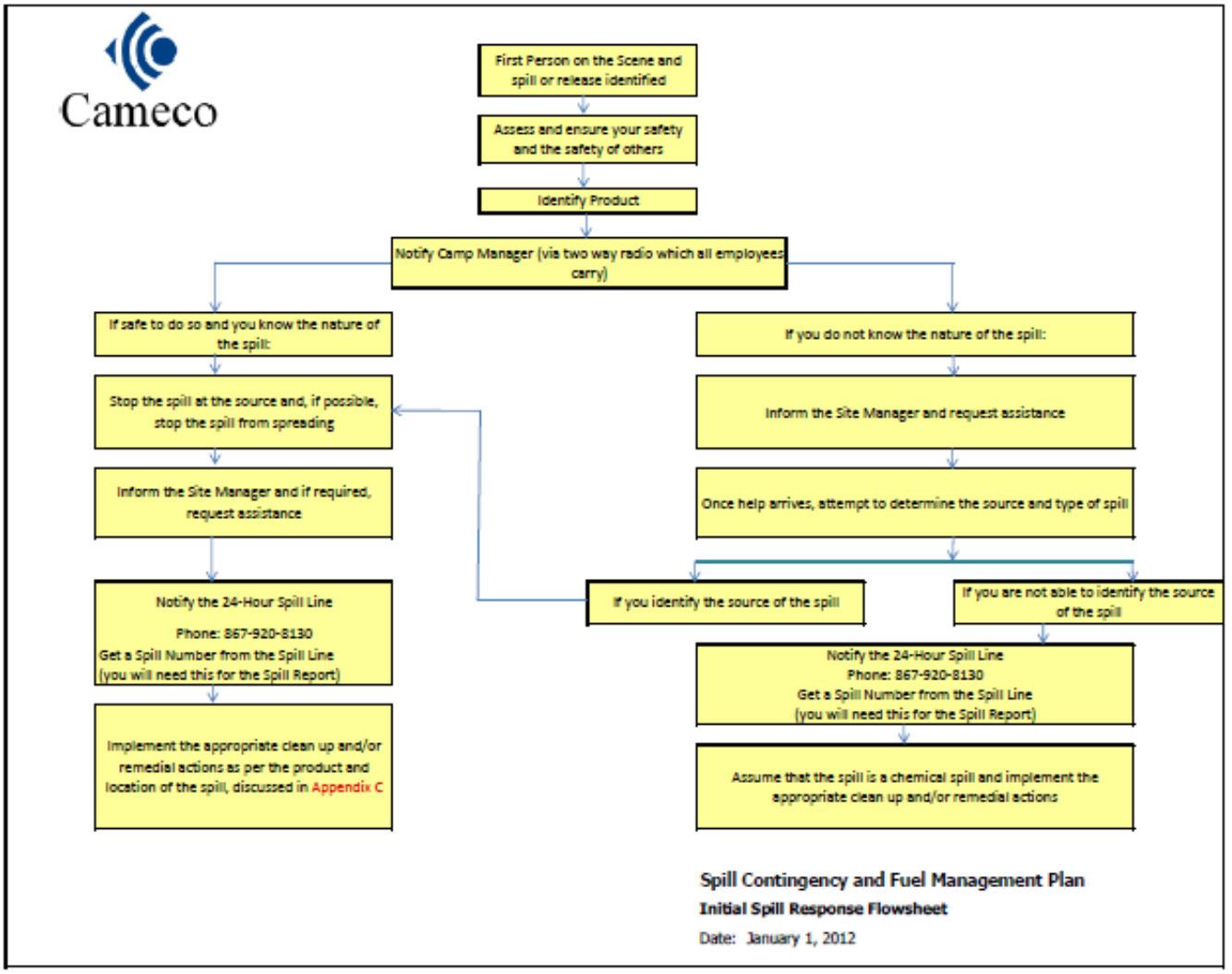
Following reporting of the spill to the Camp Manager, the Camp Manager will report spills to the NU 24-Hour Spill Line as necessary. The Camp Manager will also inform Cameco management as per the Response Organization and Responsibilities flowsheet to ensure all spills are tracked in a company database and to notify the head office in the event of media inquiries. The Cameco 24-hour emergency numbers are:

Wayne Summach, Program Manager, Emergency Preparedness	306-222-5802
John Zaidan, Superintendent, Transportation and Safety	306-260-1982

If no response from the two numbers above:

24-hour Corporate Security Station	306-385-5555

2.1 Initial Spill Response Flowchart



2.2 Response Organization and Responsibilities

RESPONSE ORGANIZATION AND RESPONSIBILITIES

Camp Manager

Initiates the Plan to any reportable spill

Leads the Plan to any reportable spill

Leads the investigation into the cause(s) of the spill

Cooperates with and reports to the appropriate government regulatory agency as required

Determines, in consultation with supervisors, whether to request external assistance in dealing with any spill

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Project Geologist, Exploration, NU & NWT

Advises Cameco Corporation District Geologist, Exploration, NU & NWT of any reportable spill

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District Geologist, Exploration, NU & NWT

Maintains communications with Cameco Corporation Regional Director, Exploration, Americas of any reportable spill

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Regional Director, Exploration, Americas

Advises Cameco Corporation Director, Worldwide Exploration Projects of any reportable spill

↓

Director, Worldwide Exploration Projects

Advises Cameco Corporation Vice President, Exploration of any reportable spill

↓

Vice President, Exploration

Makes or delegates any Public News Release regarding a reportable spill

Notifies or delegates notification of next of kin of any Cameco Corporation casualty

3.0 ACTION PLAN

3.1 Potential Spill Sizes and Sources for each hazardous material on site

Table 1: List of Products and On-Hand Quantities

Substance	Estimated Quantities	Risk of Spill	Comments
Diesel	700 x 205 L	Low	In drums with containment berm, and double-walled tanks when commissioned
Ethylene glycol (vehicle antifreeze)	50 L	Low	Stored in a dry covered area
Gasoline	4 Drums (205 L)	Low	In drums with containment berm
Hydraulic Oil	15 x 25 L Pails	Low	Stored in a dry covered area
Jet Fuel (Jet A)	1,700 x 205 L	Low	In drums with containment, and double-walled tanks when commissioned
Motor Oil	15 x 25 L Pails	Low	In drums with containment berm
Petroleum Grease	4 x 25 L Pails	Nil	In drums with containment berm
Transmission Oil	4 x 25 L Pails	Low	In drums with containment berm
Propane	30 x 100 lb	Low	In cylinders
Waste Oil	Minimal	Low	Stored in drums within secondary containment

3.2 Procedures

3.2.1 Procedures for Initial Actions

The following reporting procedure will be followed when a spill of any size is discovered:

The person first observing the spill must report the spill to the supervisor of the area. The responsible supervisor will initiate appropriate spill control and cleanup immediately. Meantime, the supervisor will inform the incident to the Camp Manager.

If the spill is of reportable size, the Camp Manager will report the spill to the NT/NU 24-hour Spill Line (867-920-8130). A Nunavut Spill Report Form will be completed and filed by the Site Manager. A copy of the NT-NU Spill Report Form is included in Appendix A. Spills are to be documented and reported within 24 hours of occurrence.

Environment Canada recommends that all releases of harmful substances, regardless of quantity are immediately reportable where the release is:

- Near or into a water body;
- Near or into a designated sensitive environment or sensitive wildlife habitat;
- Poses an imminent threat to human health or safety;
- Poses an imminent threat to listed species at risk or its critical habitat.

Nunavut's regulation R-068-93, *Spill Contingency Planning and Reporting Regulations*, also impose a legal requirement to report any spill of flammable liquids greater than 100 litres in quantity. The following table is taken from these regulations (R-068-93) and provides the reportable quantities of spilled products.

Table 2: Spill Reporting Quantities

Substance	TDG Class	Reportable Amount
Explosives	1	Any amount
Compressed gas (flammable)	2.1	Any amount of gas from containers with a capacity greater than 100 L
Compressed gas (non-corrosive, non flammable)	2.2	Any amount of gas from containers with a capacity greater than 100 L
Compressed gas (toxic)	2.3	Any amount
Compressed gas (corrosive)	2.4	Any amount
Flammable liquid	3	100 L
Flammable solid	4.1	25 kg
Spontaneously combustible solids	4.2	25 kg
Water reactant solids	4.3	25 kg
Oxidizing substances	5.1	50 L or 50 kg
Organic Peroxides	5.2	1 L or 1 kg
Poisonous substances	6.1	5 L or 5 kg
Infectious substances	6.2	Any amount
Radioactive	7	Any amount
Corrosive substances	8	5 L or 5 kg
Miscellaneous products or substances excluding PCB mixtures	9.1	50 L or 50 kg
PCB mixtures of 5 or more parts per million	9.1	0.5 L or 0.5 kg
Environmentally hazardous	9.2	1 L or 1 kg
Dangerous wastes	9.3	5 L or 5 kg
None	None	Any amount

A log will be kept for **all** spills (regardless of volume) and will be available upon request during inspections by the Water Resource Officer, AANDC. A copy of the log for the previous month will be included in monthly reports to NWB, AANDC, and KIA.

If in doubt of whether a spill is reportable, err on the side of caution and report the spill.

3.2.2 Spill Reporting Procedures

Emergency contact lists will be kept up to date and will be located at the drills and in the field office.

When a spill occurs:

- Ensure your own safety first;
- If possible, identify the product that has spilled;
- Once safe to do so, immediately contact the Camp/Project Manager.

Once the spill is controlled/contained:

- Fill out the Spill Report as completely as possible prior to calling the 24-Hour Spill Report Line (867-920-8130);
- Call the 24 Hour Spill Response Line and request the Spill Report number that has been allocated to this incident;
- Email a copy of the Spill Report to the Kivalliq Inuit Association and the AANDC Water Resource Manager.

Follow Up:

- Provide a completed copy of the Spill Report Form and a detailed report to AANDC, the KivIA, the NWB and EC within seven (7) days of the incident.

Emergency Contacts

Table 3 Internal Emergency Contact Numbers (24 hour numbers)

Wayne Summach, Program Manager, Emergency Preparedness	306-222-5802
John Zaidan, Superintendent, Transportation and Safety	306-260-1982
24 hour Corporate Security Station	306-260-5555
Daryl Giesbrecht, Camp Manager	989-244-1134 (during field season)

Table 4 External Emergency Contact Numbers

Health and Safety Emergency	
Stanton Territorial Hospital, Yellowknife, NT	867.669.4111
Stanton Territorial Hospital Poison Control, Yellowknife, NT	867.669.4100
Rankin Inlet Health Centre	867.645.2816
Poison and Drug Information Service, Calgary, AB	800.332.1414
RCMP in Yellowknife, NT	867.669.1111
RCMP in Baker Lake, NU	867.793.0123
RCMP in Rankin Inlet, NU	867.645.0123
Workers' Safety and Compensation Commission (WSCC), Iqaluit, NU	877.404.4407
North Slave Region Fire Management, Yellowknife, NT	867.920.6115
Fire Marshall's Office, Yellowknife	867.873.7944
Environmental Emergency	
Government of Nunavut, Environmental Protection Service, Department of Sustainable Development, Iqaluit, NU	867.975.5900
Nunavut Water Board, Gjoa Haven, NU	867.360.6338
INAC Field Operation Manager, Iqaluit, NU (Mr. Peter Kusugak)	867.975.4295
INAC Water Resources, Iqaluit, NU (Inspector)	867.975.4550
Environment Canada, Environmental Protection Branch, Yellowknife, NT	867.766.3737
DFO, Area Manager Nunavut, Iqaluit, NU	867.975.8011
DFO, Habitat Coordinator, Yellowknife, NT	867.669.4911
DFO, Director, Conservation and Compliance, Yellowknife, NT	867.669.4903
Nunavut Water Board, Gjoa Haven, NU	867.360.6338
Kivalliq Inuit Association (KIA), Rankin Inlet, NU	867.645.5725
NWT/Nunavut Spill Hotline, 24 hr Emergency, Yellowknife, NT	867.920.8130
CANUTEC (Spill Support Information)	613.996.6666
Canadian Nuclear Safety Commission 24 hr Duty Officer	613.995.0479
Stuart Hunt & Associates Ltd., St. Albert, AB (Nuclear)	800.661.4591
Charter Aircraft (for Evacuation)	
Air Tindi, Yellowknife, NT	867.669.8200
First Air, Yellowknife, NT	867.983.2077
Arctic Sun West, Yellowknife, NT	867.873.4464
Nunasi Helicopters, Yellowknife, NT	867.873.3306
Canadian Helicopters, Yellowknife, NT	867.669.9604
Great Slave Helicopters, Yellowknife, NT	867.873.2081

3.2.3 Procedures for Containing and Controlling the Spill

Basic Steps:

1. The **first priority when a spill occurs is safety** — the safety of the immediate responder and others working in the area. Once it is safe to do so, and only if the responder has the appropriate training, continue to respond to the spill. If you do not have the appropriate training, or have concerns, immediately request assistance.
2. Identify and find the spill at the source. Be sure to stay upwind of the spill. Call for assistance and notify the Camp/Project Manager. If it is safe to do so, stop the spill.
3. Attempt to contain the spilled material if it is safe to do so.
4. Consult the MSDS Sheets and the SOP's in Appendix C to determine appropriate PPE.
5. Shut down all equipment and machinery in the area to avoid potential fire hazards.
6. Use Spill Kits to contain and begin to clean up spill if safe to do so. Follow directions in the SOP's.
7. Implement necessary clean-up and remedial actions in a safe and responsible manner.

Petroleum spills within contained areas can be cleaned up as personnel are available. In other areas, advice from the Corporate Environmental Department may be required depending on the scale of the spill and environmental sensitivity of the incident area.

3.2.3.1 On Land

Small petroleum product spills typically occur during refueling of vehicles or equipment and during fuel transfer. Staining is indicative of small hydrocarbon spills. Where there is no overland flow, control and clean-up procedures are:

- If the spill occurs on soil or snow, soil should be excavated to 10 cm below the depth that no visual hydrocarbon stains can be found. Contaminated soil or snow should be excavated and temporarily stored at the site with other hazardous materials for off-site disposal.

Puncture or rupture of 206-litres steel drums or the 50,000 L double-walled storage tanks located within the bulk fuel storage containing liquid fuels will initially be assessed for risk of ignition. Sources of ignition will be extinguished or isolated from the spill if safe to do so. Efforts will be made to plug punctures with appropriate material from the spill kit (expandable neoprene plugs or wedges and shims). Ruptures will be high-centered to stop further spill of fuel. Absorbent material will be placed on spilled fuel and into appropriate containers (plastic or metal cans or pails in good condition) as it becomes saturated with fuel. A containment berm will be built from soil and/or tarps to contain a large spill. Fuel skimmed or wicked off of the surface to be disposed of, most probably by incineration. High-centered ruptures will be used as a point of entry for manually-operated fuel transfer pump suction tubes, and remaining fuel will be removed to a sound drum. Contaminated soil, vegetation or gravel will be removed into buckets with lids for proper disposal.

A detected leak from a fuel reservoir and distribution line assembly will initially be assessed for risk of ignition. Sources of ignition will be extinguished or isolated from the leak if safe to do

so. Shut-off valve immediately downstream from reservoir will be turned off. Absorbent material will be placed on the spilled fuel; if spilled onto snow or ice this will be scooped up with a shovel and stored in an appropriate container. Spilled fuel collected will be disposed of by incineration. The site of the leak will be searched for and repaired if and when found, if the site of the leak is not found the entire assembly may be replaced paying special attention to quality of materials, equipment and techniques of installation employed.

3.2.3.2 On Water

Direct petroleum product spills on waterbodies are very unlikely because:

- Fuel is delivered during winter when water surfaces are frozen;
- Fuel is delivered by air when overland transport is not possible;
- Fuel storage has secondary containment; and,
- Fuel transfer operations and storage locations are away from waterbodies.

Confinement and collection of liquid fuel in lake water will be attempted with floating booms of petroleum absorbent material. For larger spills, liquid will be removed by skimming. Spilled fuel collected will be disposed of by incineration. Contaminated water and/or absorbent material will be removed into buckets with lids for proper disposal.

3.2.3.3 On Snow and Ice

A containment berm of snow will be constructed around the spill. Any liquid will be removed by skimming or collected with absorbent material. Spilled fuel collected will be disposed of by incineration. Contaminated snow and/or ice will be removed into buckets with lids for proper disposal upon instruction of the regulatory agency.

3.2.3.4 Spill of Battery Acid

In case of a spill of battery acid the first concern will be for the safety of any person(s) at risk of harm. Sources of ignition to the potentially explosive gas will be extinguished or isolated if safe to do so. Personal protective equipment, eye and hand wear at a minimum, will be donned and a neutralizer (sodium bicarbonate) will be bermed around the spill site. If safe to do so the entire battery may be placed into a non-corrodible container. The neutralizer may then be worked into the entire area of the spill until no more obvious reaction is noticed. Used neutralizer will be placed in suitable containers for appropriate disposal.

Other
Procedures for Transferring, Storing, and Managing Spill-Related Wastes
Procedures for Restoring Affected Areas

4 TRAINING PROGRAM

4.1 Outline of Training Program

All personnel at camp (including all Cameco Corporation employees, contractors and visitors) will be presented with a copy of this Plan upon arrival at site. The contents of this Plan will be reviewed during their orientation to camp by the Camp Manager, including the location of Material Safety Data Sheets (on a labeled wall rack in the office), the location of spill kits and additional supplies and tools. Specific training sessions will be scheduled for individuals involved in handling hazardous materials to ensure they know all steps to be undertaken in handling these materials, as well as the steps involved in the event of a spill, including the proper use of spill kits.

Training for spill contingency will consist of alerting all personnel to be watchful for any leaks or spills and where these are most likely, instruction in the correct operation and use of the equipment and materials in an effort to reduce the possibility of any spills, introduction to the protocol of the chain of command and the legal requirement to report certain spills as well as how to collect, store and dispose of spilled product.

4.2 Training Schedule and Record Keeping

An up-to-date record will be kept by the Camp Manager indicating the training undertaken.

FIGURES

APPENDIX A

NT/NU SPILL REPORT FORM

APPENDIX B

NT/NU SPILL REPORT COMPLETION GUIDELINES

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			

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 C
SPILL RESPONSE SOP'S

DIESEL SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	Use adequate ventilation.
Respiratory Protection	Not generally required unless needed to prevent respiratory irritation. In case of spill or leak resulting in unknown concentration, use NIOSH/MSHA-approved supplied air respirator.
Eye Protection	For splash protection, use chemical goggles and face shield.
Skin Protection	Use gloves resistant to the material being used, i.e., neoprene or nitrile rubber. Use protective garments to prevent excessive skin contact.

2.0 HEALTH HAZARD DATA

Recommended Exposure Limits	Not established.
Acute Effects of Overexposure	Eye: May cause mild irritation, with stinging and redness of eyes.
	Skin: May cause severe irritation. Repeated or prolonged contact may cause defatting of the skin, resulting in dermatitis. Dermal LD50 for diesel fuel is >5 mL/kg (rabbit).
	Inhalation: May cause irrigation to nose, throat or lungs. Headache, nausea, dizziness, unconsciousness may occur.
	Ingestion: May cause irritation to intestines. May cause headache, nausea, unconsciousness. If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs. Oral LD50 for diesel fuel is 9 mL/kg (rat).

3.0 FIRST AID AND EMERGENCY PROCEDURES

Eye	Flush eyes with running water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
Skin	Immediately wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.
Inhalation	Remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.
Ingestion	Do not induce vomiting. Seek immediate medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	>130°F (>54°C) (Estimated)
Flammable Limits (% by Volume in Air)	LEL: Not Established; UEL: Not Established.
Fire Extinguishing Media	Dry chemical, foam or carbon dioxide.
Special Fire Fighting Procedures	Evacuate area of all unnecessary personnel. Shut off source, if possible. Use NIOSH/MSHA-approved self-contained breathing apparatus and other protective equipment and/or garments described in Section 1.0 if conditions warrant. Water fog or spray may be used to cool exposed containers and equipment. Do not spray water directly on fire – product will float and could be reignited on surface of water.
Fire and Explosion Hazards	Carbon and sulphur oxides and various hydrocarbons formed when burned.

5.0 SPILL AND LEAK PROCEDURES

Evacuate the area of all unnecessary personnel. Wear protective equipment and/or garments described in Section 1.0 if exposure conditions warrant. Shut off source, if possible, and contain the spill. Protect from ignition. Keep out of water sources and sewers. Absorb in dry, inert material (sand, clay, etc.). Transfer to disposal drums using non-sparking equipment.

6.0 RESPONSE PERSONNEL

- Emergency Coordinator (large spill);
- Other personnel as required and designated by the Site Manager.

7.0 EQUIPMENT

Small Spill

- Portable diesel pump and hoses;
- Container of appropriate size;
- Absorbents from facility spill kit (which require replacement once the spill is cleaned up);
- Personal protective equipment as specified in MSDS.

Large Spill

- The Spill Coordinator may set up a decontamination zone with decontamination equipment (solvent wash, steamer, tyvek suits, etc);
- Portable diesel pump and hoses;
- Truck-, or skid-mounted tank or drums of appropriate size;
- Absorbents;
- Personal protective equipment as specified in MSDS.

8.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Spills will be contained by containment berms. Recovery would involve pumping the spilled diesel back into the tank if tank integrity were not affected or into a suitable tank or tanks for temporary storage if the subject tank were damaged. Any diesel that was not contaminated by foreign matter would be put back into the supply store. Contaminated diesel would be burned or backhauled on for disposal by a hazardous waste contractor. If backhauled, the contaminated fuel would be temporarily stored at the site.

If the spill is reportable (>100 L) report on the NT/NU Spill Line, **867-920-8130**. In any case, log the spill and complete report.

Water

- Very unlikely;
- Containment boom deployed if possible;
- Diesel pumped from within berm and burned or pumped to a waste oil tank for backhaul south.

Ice

- Scrape up contaminated ice;
- Remove residual ice to a container.

Land

- Use dyking, trenching, ditches, weirs, or berms as appropriate to contain spill; pump diesel uncontaminated by foreign matter into suitable containers for use
- Pump to a waste oil container for backhaul south;
- Place contaminated soil in a container for backhaul south.

Log the spill and complete report.

9.0 RESTORATION

Restoration applied will depend entirely on the nature of the spill and where it occurs:

- Spills on soil require removal of the soil and replacement with clean soil; sites will be revegetated if practical.
- Spills on ice require no restoration.
- Spills on wetlands or muskeg will require restoration of wetland vegetation if practical once contaminants are removed.

JET B SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	Local exhaust and mechanical (general) ventilation to maintain exposure levels.
Respiratory Protection	Avoid breathing vapour and/or mist. Use with adequate ventilation. If ventilation is inadequate, use NIOSH/MSHA certified respirator which will protect against organic vapour/mist.
Skin Protection	Impervious protective gloves.
Eye Protection	Safety glasses or goggles.
Other Protective Equipment	Protective clothing as required, to avoid skin contact. An emergency eye wash station and shower should be available.
Work Hygienic Practices	Wash with soap and water after handling product and before eating, drinking or smoking.

2.0 HEALTH HAZARD DATA

Acute Effects of Overexposure	May be mildly irritating to eyes. Prolonged or repeated contact may cause dermatitis. Vapours may irritate the nose, throat and upper respiratory tract and cause central nervous system depression. Aspiration hazard.
Signs/Symptoms of Overexposure	Eye irritation, skin irritation, dermatitis, upper respiratory tract irritation, nausea, vomiting, diarrhea, headaches, dizziness, drowsiness.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air. Restore breathing. Get medical attention.
Ingestion	Do not induce vomiting. Get medical attention.
Skin Contact	Remove contaminated clothing. Wash with soap and water. If irritation persists, get medical attention.
Eye Contact	Flush with water for 15 minutes while holding eyelids open. Get medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method)	-10°F, -23°C (CC)
Explosion	LEL: 1.3% UEL: 8%
Fire Extinguishing Media	Agents approved for Class B hazards (dry chemical, carbon dioxide, halogenated agents, foam, steam) and water fog.
Special Fire Fighting Procedures	Fire fighters should use NIOSH-approved SCBA and full protective equipment when fighting chemical fire. Use water spray to cool nearby containers exposed to fire.
Unusual Fire and Explosion Hazards	Do not use direct stream of water on fire. Toxic gases are released during combustion. Vapour may explode if ignited in enclosed area.

5.0 SPILL AND LEAK PROCEDURES

Evacuate the area of all unnecessary personnel. Wear protective equipment and/or garments described in Section 1.0 if exposure conditions warrant. Shut off source, if possible, and contain the spill. Protect from ignition. Keep out of water sources and sewers. Absorb in dry, inert material (sand, clay, etc.). Transfer to disposal drums using non-sparking equipment.

6.0 RESPONSE PERSONNEL

- Emergency Coordinator (large spill);
- Other personnel as required and designated by the Site Manager.

7.0 EQUIPMENT

Small Spill

- Portable diesel pump and hoses;
- Container of appropriate size;
- Absorbents from facility spill kit (which require replacement once the spill is cleaned up);
- Personal protective equipment as specified in MSDS.

Large Spill

- The Emergency and Spill Coordinator may set up a decontamination zone with decontamination equipment (solvent wash, steamer, tyvek suits, etc);
- Portable diesel pump and hoses;
- Truck- or skid-mounted tank and/or drums of appropriate size;
- Absorbents (spill kits);
- Personal protective equipment as specified in MSDS.

8.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Spills from drums and bulk tanks will be contained by containment berms. Recovery would involve pumping the spilled Jet A back into the tank if tank integrity were not affected or into a suitable tank or drums for temporary storage if the subject tank were damaged. Any Jet A that was not contaminated by foreign matter would be put back into the supply store. Contaminated Jet A would be burned or backhauled for disposal by a hazardous waste contractor. If backhauled, the contaminated fuel would be temporarily stored at site.

If the spill is reportable (>100 L), report on the NT/NU Spill Line, **867-920-8130**. In any case, log the spill and complete report.

Water

- Very unlikely;
- Containment boom deployed if possible;
- Jet A pumped from within berm and burned or pumped to a waste oil tank for backhaul south.

Ice

- Scrape up contaminated ice;

- Remove residual ice to a container.

Land

- Use dyking, trenching, ditches, weirs, berms, as appropriate to contain spill;
- Pump jet a uncontaminated by foreign matter into suitable containers for use;
- Burn contaminated Jet A or pump to a waste oil container for backhaul south;
- Place contaminated soil in a container for backhaul south to a hazardous waste facility.

Log the spill and complete report.

9.0 RESTORATION

Restoration applied will depend entirely on the nature of the spill and where it occurs:

- Contaminated sand will be backhauled south to a hazardous waste contractor for disposal.
- Spills on soil require removal of the soil and replacement with clean soil; sites will be revegetated, if practical.
- Spills on ice require no restoration.
- Spills on wetlands or muskeg will require restoration of wetland vegetation, if practical, once contaminants are removed.

JET A SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation	Use adequate ventilation.
Respiratory Protection	Not generally required unless needed to prevent respiratory irritation. In case of spill or leak resulting in unknown concentration, use NIOSH/MSHA-approved supplied air respirator.
Eye Protection	Use splash-proof, dust-resistant SAF goggles.
Skin Protection	Use gloves resistant to the material being used, i.e., neoprene or nitrile rubber. Use protective garments to prevent excessive skin contact.

2.0 HEALTH HAZARD DATA

Recommended Exposure Limits	Not established.
Acute Effects of Overexposure	Eye: May cause mild irritation, with stinging and redness of eyes.
	Skin: May cause severe irritation. Repeated or prolonged contact may cause defatting of the skin, resulting in dermatitis.
	Inhalation: May cause irrigation to nose, throat or lungs. Headache, nausea, dizziness, unconsciousness may occur.
	Ingestion: May cause irritation to intestines. May cause headache, nausea, unconsciousness. If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Eye	Flush eyes with running water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
Skin	Immediately wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.
Inhalation	Remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.
Ingestion	Do not induce vomiting. Seek immediate medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	>130°F (>54°C) (Estimated)
Flammable Limits (% by Volume in Air)	LEL: 0.7. UEL: Not Established.
Fire Extinguishing Media	Dry chemical, foam, carbon dioxide or water spray.
Special Fire Fighting Procedures	Evacuate area of all unnecessary personnel. Shut off source, if possible. Use NIOSH/MSHA-approved self-contained breathing apparatus and other protective equipment and/or garments described in Section 1.0 if conditions warrant. Water fog or spray may be used to cool exposed containers and equipment. Do not spray water directly on fire – product will float and could be reignited on surface of water.
Fire and Explosion Hazards	Moderate fire hazard when exposed to heat/flame. Vapour heavier than air; may travel considerable distance to ignite source and flashback.

5.0 SPILL AND LEAK PROCEDURES

Evacuate the area of all unnecessary personnel. Wear protective equipment and/or garments described in Section 1.0 if exposure conditions warrant. Shut off source, if possible, and contain the spill. Protect from ignition. Keep out of water sources and sewers. Absorb in dry, inert material (sand, clay, etc.). Transfer to disposal drums using non-sparking equipment.

6.0 RESPONSE PERSONNEL

- Emergency Coordinator (large spill);
- Other personnel as required and designated by the Site Manager.

7.0 EQUIPMENT

Small Spill

- Portable diesel pump and hoses;
- Container of appropriate size;
- Absorbents from facility spill kit (which require replacement once the spill is cleaned up);
- Personal protective equipment as specified in MSDS.

Large Spill

- The Emergency and Spill Coordinator may set up a decontamination zone with decontamination equipment (solvent wash, steamer, tyvek suits, etc);
- Portable diesel pump and hoses;
- Truck- or skid-mounted tank and/or drums of appropriate size;
- Absorbents (spill kits);
- Personal protective equipment as specified in MSDS.

8.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

Spills from drums and bulk tanks will be contained by containment berms. Recovery would involve pumping the spilled Jet A back into the tank if tank integrity were not affected or into a suitable tank or drums for temporary storage if the subject tank were damaged. Any Jet A that was not contaminated by foreign matter would be put back into the supply store. Contaminated Jet A would be burned or backhauled for disposal by a hazardous waste contractor. If backhauled, the contaminated fuel would be temporarily stored at site.

If the spill is reportable (>100 L), report on the NT/NU Spill Line, **867-920-8130**. In any case, log the spill and complete report.

Water

- Very unlikely;
- Containment boom deployed if possible;
- Jet A pumped from within berm and burned or pumped to a waste oil tank for backhaul south.

Ice

- Scrape up contaminated ice;
- Remove residual ice to a container.

Land

- Use dyking, trenching, ditches, weirs, berms, as appropriate to contain spill;
- Pump jet a uncontaminated by foreign matter into suitable containers for use;
- Burn contaminated Jet A or pump to a waste oil container for backhaul south;
- Place contaminated soil in a container for backhaul south to a hazardous waste facility.

Log the spill and complete report.

9.0 RESTORATION

Restoration applied will depend entirely on the nature of the spill and where it occurs:

- Contaminated sand will be backhauled south to a hazardous waste contractor for disposal.
- Spills on soil require removal of the soil and replacement with clean soil; sites will be revegetated, if practical.
- Spills on ice require no restoration.
- Spills on wetlands or muskeg will require restoration of wetland vegetation, if practical, once contaminants are removed.

GASOLINE SPILL RESPONSE

1.0 PERSONAL PROTECTION INFORMATION

Ventilation System	Local exhaust generally not required. Use only explosion proof electrical equipment.
Personal Respirators (NIOSH-Approved)	Use NIOSH-approved SCBA in confined spaces or if exposed to heavy mist.
Skin Protection	Impervious gloves (viton, nitrile, neoprene) and impervious clothing.
Eye Protection	Safety glasses with side shields and face shield.

2.0 HEALTH HAZARD DATA

Acute Effects of Overexposure	Eye: Mild irritant with stinging and redness of the eyes.
	Skin: Prolonged exposure may cause defatting, redness, itching, inflammation, cracking and possible secondary infection.
	Inhalation: Headache, nausea, weakness, sedation, unconsciousness
	Ingestion: May cause irritation to the intestines. If swallowed maybe aspirated resulting in inflammation and possible fluid accumulation in the lungs.

3.0 FIRST AID AND EMERGENCY PROCEDURES

Inhalation	Remove to fresh air, provide oxygen therapy or resuscitation as indicated.
Ingestion	Rinse mouth with water. Do not induce vomiting. Call physician immediately.
Skin Contact	Remove contaminated clothing and flush with soap and water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.
Eye Contact	Flush with water for at least 15 minutes. If irritation or adverse symptoms develop, seek medical attention.

4.0 FIRE AND EXPLOSION DATA

Flash Point (Method Used)	-40°C, -40°F (TCC)
Flammable Limits	LEL: 1.4%; UEL: 7.4%
Explosion	Fumes may accumulate away from the produce and if ignited flash back.
Fire Extinguishing Media	Dry chemical, foam, CO_2
Special Information	Evacuate the area of all unnecessary personnel. NIOSH/MSHA approved SCBA and full protective equipment. Approach from upwind if possible. Water should be used to keep surrounding materials not on fire cool. Burning may cause toxic products of combustion.

5.0 RESPONSE PERSONNEL

- Spill Coordinator;
- Other personnel as required.

6.0 EQUIPMENT

- Hand tools as appropriate for clean up;
- Portable pump if spill contained and pooled;

- Absorbent materials;
- Appropriate container for recoverable spilled product.

7.0 CONTAINMENT, RECOVERY AND DISPOSAL ACTIONS

If spill is reportable, report on the NT/NU Spill Line, **867-920-8130**.

If material released/spilled, eliminate sources of ignition. Evacuate area. Wear proper personal protective equipment. Contain spill. Stop leak. If can be done without risk, absorb liquid with suitable absorbent material. Collect for disposal.

If spill is on soil, excavate soil to below visible contamination. Place contaminated soil in the in a container for backhaul south to a designated disposal facility.

Test the clean soil and if petroleum concentrations meet applicable CCME Soil Quality Guidelines. If not excavate more soil and retest.

Log the spill and complete report.

8.0 RESTORATION

- If spill is to soil, once soil has tested clean, replace contaminated soil with clean fill.

APPENDIX D

MATERIAL SAFETY DATA SHEETS (MSDS)