Fuel Spill Contingency Plan
Nunavut

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V1Y 4R2

This Fuel Spill Contingency Plan applies to exploration programs conducted by Trigon Exploration Canada Ltd. in the Kitikmeot region of Nunavut.

Copies and updates of this plan may be obtained by writing to:

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1.0 Introduction

The purpose of Trigon Exploration Canada Ltd.'s Fuel Spill Contingency Plan is to provide a plan of action for any spill during exploration programs conducted by the company in the Kitikmeot region of Nunavut. This plan will be posted at all camp and drill site locations in the aforementioned region.

2.0 Fuel Storage and Inventory

In preparation for exploration programs and during the programs, fuel will be stored at remote fuel caches, camp and drill locations in the following manner:

- Quantities of up to 19 drums (<4000 litres) of aviation and/or diesel fuel and possibly propane will be stored a minimum of 50 metres from normal high water mark.
- Fuel cache coordinates will be recorded and an updated inventory of the fuel used will be maintained.
- Empty fuel drums will be flown to Kugaaruk and returned to the fuel supplier for recycling.
- A maximum of 2 full diesel and 2 full aviation fuel drums will be stored at each drill location for the duration of drilling at that location. Empties will be slung to a nearby cache to await a flight to Kugaaruk.
- A fuel spill kit with will be available at all fuel storage locations and on the helicopter.

3.0 Spill Kits

Appropriately sized spill kits and/or equipment will be positioned with all camps, drill sites, and remote fuel caches. Each spill kit will contain a copy of the Trigon Spill Contingency Plan, complete with an Emergency Contact List, Spill Report Form and an Initial Response Procedure Card.

While the contents of each kit will vary depending on the location and quantity of fuel, the contents may include:

- fuel absorbent material (pads, booms, etc.)
- heavy duty plastic bags and/or tarps
- empty drums or buckets for storage/disposal of contaminated materials
- hand tools, pumps will be easily available

4.0 Spill Prevention

Methods will be implemented for the handling and care of petroleum products, drilling additives, etc. so as to prevent accidental spillage of these materials. Handlers of fuels will ensure that valves are closed and hoses are in good repair. Drip pans and absorbent material will be placed under leaking equipment and, if practicable, the leaks will be repaired as soon as possible. All personnel will be briefed and given a copy of the Fuel Spill Contingency Plan before field operations begin.

5.0 Response to Spills

All spills will be cleaned up promptly and reported to the appropriate company representatives and relevant government authorities. Spill kits will be available at all camps, drill sites and remote fuel caches. The following responses are recommended for fuel spills in differing environments:

Spills on Land (gravel, rock, soil and vegetation)

- Trench or ditch to intercept or contain flow of fuel or petroleum products on land, where feasible (loose sand, gravel and surface layers of organic materials are amenable to trenching/ditching; trenching in rocky substrates is typically impractical and impossible).
- Construct a soil berm down slope of the spill. Use of synthetic, impervious sheeting can also be used to act as a barrier.
- Where available, recover spills through manual or mechanical means including shovels, heavy equipment and pumps.
- Absorb petroleum residue with synthetic absorbent pad materials.
- Recover spilled and contaminated material, including soil and vegetation.
- Transport contaminated material to approved disposal or recovery site. Equipment used will depend on the magnitude and location of the spill.
- Where safe, disposal can be done through controlled in-situ combustion with approval of government authorities.
- Land based disposal is only authorized with the approval of government authorities.

Spills on Snow

- Trench or ditch to intercept or contain flow of fuel or petroleum products on snow, where feasible (ice and snow are amenable to trenching/ditching).
- Compact snow around the outside perimeter of the spill area.
- Construct a dike or dam out of snow, either with shovels or with heavy equipment, where available.
- If feasible, use synthetic liners to provide an impervious barrier at the spill site.
- Locate the low point of the spill area and clear channels in the snow, directed away from waterways, to allow non-absorbed material to flow into the low point.
- Once collected in the low area, options include shoveling spilled material into containers, or picking up with mobile heavy equipment, where available.
- Where safe, disposal can be done through in-situ combustion with approval from government authorities.
- Liquid oil wastes, oil contaminated snow and debris and oil residues left after controlled, in-situ burning will be picked up and disposed of at a land disposal site approved by government authorities.
- Transport contaminated material to approved disposal site. Equipment used will depend on the magnitude and location of the spill.

Spills on Ice

- Contain spill using methods described above for snow if feasible and/or mechanical recovery with heavy equipment.
- Prevent fuel/petroleum products from penetrating ice and entering watercourses.
- Remove contaminated material, including snow/ice as soon as possible.
- Containment of fuel/petroleum products under ice surface is difficult given the ice thickness and winter conditions. However, if the material gets under ice, determine area where the product is located and drill through ice using ice auger.
- Once detected, cut slots in the ice using chain saws and remove ice blocks.
- Fuel/petroleum products collected in ice slots or holes can be picked up via suction hoses connected to portable pump, vacuum truck or standby tanker. Care should be taken to prevent the end of the suction hose clogging up with snow, ice or debris.
- Fuel/petroleum products that have collected in ice slots may be disposed of by in-situ burning if sufficient holes are drilled in ice. Once all holes are drilled, oil which collects in the holes may be ignited. Consult with government authorities to obtain approval.

Spills on Water

- Contain spills on open water immediately to restrict the size and extent of the spill.
- Fuel/petroleum products, which float on water, may be contained through the use of booms, absorbent materials, skimming, and the erection of culverts.
- Deploy containment booms to minimize spill area, although effectiveness of booms may be limited by wind, waves and other factors.
- Use absorbent booms to slowly encircle and absorb spilled material. These absorbents are hydrophobic (absorb hydrocarbons and repel water).
- Once booms are secured, use skimmers to draw in hydrocarbons and minimal amounts of water. Skimmed material can be pumped through hoses to empty fuel tanks/drums.
- Culverts permit water flow while capturing and collecting fuel along the surface with absorbent materials.
- Chemical methods including dispersants, emulsion – treating agents and shoreline cleaning will be considered.
- Use absorbent pads and similar materials to capture small spills/oily residue on water.

Note:

In-situ combustion is a disposal method available for fuels and petroleum products. In-situ burning can be initiated by using a large size portable propane torch (tiger torch) to ignite the fuel/petroleum products. Highly flammable products such as gasoline or alcohol, or combustible material such as wood, may be used to promote ignition of the spilled product. The objective is to raise the temperature for sustained combustion of the spilled product.

Precautions need to be taken to ensure safety of personnel. Also, spilled product should be confined to control burning. These include areas where the spilled material has pooled naturally or been contained via dikes, trenches, depressions or ice slots. Prior to any attempts at in-situ burning, consultation with experts and approval by government authorities are required.

Chemical response methods are also available and may include the use of dispersants, emulsion-treating agents, visco-elastic agents, herding agents, solidifiers, and shoreline cleaning agents.

Biological response methods include nutrient enrichment and natural microbe seeding.

Site remediation will be completed as per the advice of government authorities.

Fuel Spill Contingency Plan Procedure

Initial Response

- Determine hazards and ensure safety of all persons.
- Assess severity and size of the spill.
- Identify the product and source of the leak or spill.
- Isolate or remove any potential ignition source, if possible.
- Contain the spill, if possible.
- Report spill to Project Supervisor. Be prepared to give following information:
    - time & location of spill
    - product spilled and estimated quantity
    - cause of spill
    - action taken so far
    - spill contained?
    - weather conditions
    - possible hazards to person, property, or environment
- Participate in Spill Response.

Spill Response Team (headed by Project Supervisor)

- Project Supervisor reports spill to the 24-hour Spill Report Line (867) 920 8130.
- Identify best approach to spill response for location (ie. land, snow, ice, water).
- Conduct cleanup of spills using spill response guidelines in Fuel Spill Contingency Plan.
- Assess whether further assistance and/or additional equipment is required.
- Investigate cause to prevent similar spills in future.

Reporting Procedure

- Communication between camp, helicopter and drill locations by two-way radio will be used to immediately report spill or leak to the Project Supervisor.
- Spill kits at each source of fuel include the contact list for spill reporting and an Initial Response Procedure Card.
- Project Supervisor will immediately report spill to the 24-hour Spill Report Line, when appropriate, as per Schedule 1 of INAC Spill Reporting Protocol.
- Further reporting will be filed with DIAND and/or any other agencies requiring a report, as per the Northwest Territories and Nunavut Spill Contingency Planning and Reporting Regulations in the Environmental Protection Act.

Fuel Spill Contingency Plan – Emergency Contact List (NWT)

Field Contacts

Project Supervisor Trigon Exploration Canada Ltd.	Field Tel: _____
Expeditor Matrix Aviation Solutions	Office: (867) 766 3134 Cell: (867) 873 1441

Office Contacts Office: (250) 763 5533

Magnus Haglund, Chief Operating Officer Trigon Exploration Canada Ltd.	Cell: (250) 317 3546 Home:
Raymond Ashley, Vice President, Exploration Trigon Exploration Canada Ltd.	Cell: (250) 317 0499 Home: (250) 548 3608
Audrey Perry, Mgr, Lands & Environment Trigon Exploration Canada Ltd.	Cell: (250) 488 0067 Home: (250) 497 6003

Primary Contact

24 Hour Spill Report Line *(collect calls accepted)*	Tel: **(867) 920 8130** Fax: (867) 873 6924

Other Contacts

Enforcement Officer, Environmental Protection Branch, Environment Canada, Nunavut	Tel: (867) 975 4644
District Manager, INAC	Tel: (867) 975 4295
INAC Water Resources, Nunavut	Tel: (867) 975 4549
Resource Management Officer, INAC	Tel: (867) 982 4306
Nunavut Water Board	Tel: (867) 360 6338
Kitikmeot Inuit Association	Tel: (867) 982 3310