10. SPILL CONTINGENCY PLAN

10.1 Introduction

The following contingency plan presents the prescribed course of action to be taken in the case of unanticipated spill events during the clean up at the CAM-3, Shepherd Bay DEW Line site. The plans will enable persons in a particular contingency situation to maximize the effectiveness of the environmental protection response and meet all regulatory requirements for reporting to the appropriate authorities.

10.1.1 Scope and Purpose

This plan applies to all activities and facilities pertaining to the construction activities at the CAM-3 site.

The purpose of the plan is to:

- Provide a clear statement of the procedures to be followed in response to all spills;
- Minimize the potential environmental impact of spills by establishing pre-determined action plans;
- Establish a state of preparedness for personnel through a Spill Response Training Program;
- Protect the health and ensure the safety of the personnel involved in the Spill Response activities, and the local communities;
- Provide a reporting network for spills;

- Ensure site restoration through appropriate remedial activities;
- Identify the roles and responsibilities of all parties involved in Spill Response activities; and,
- Identify sufficient personnel, materials and equipment needed to make an adequate response to a spill.

10.2 Response Organization

10.2.1 Roles and Responsibilities

The Contractor and all sub-contractors will be involved in Spill Response Actions in the event of a spill during the construction activities at CAM-3. Their roles and responsibilities are described as follows:

- Ensure response crew members are appropriately trained.
- Practise spill prevention by performing regular maintenance on all fuel systems and by using proper methods for the handling of fuel products.
- Provide personnel, materials, and equipment necessary for adequate response to fuel and hazardous material spills.
- Establish communications and verbally report all spills to the Contract Coordinator as soon as practical.
- Isolate and eliminate all ignition sources.
- Ensure safety and security at the spill site.

- Stop or reduce discharge, if it is safe to do so.

- Make every effort to contain the spill by dyking with earth or other barriers on land and containment booms on water.

- Assess potential for fuel/chemical recovery.

- Deploy on-site crews to mobilize pumps, empty 200 L drums, hand tools and absorbents to the spill site.

- Hire additional assistance, if required, from northern residents, local communities, and commercial spill response firms.

- Request assistance, if required, from DND (through the Contract Coordinator) and the Canadian Coast Guard.

- Follow all guidelines and regulations for disposal of spilled materials, associated debris, contaminated soil and water as established by appropriate government agencies.

- Assess potential terrain and wildlife disturbance, erosion and archaeological site disturbance in any areas to be affected by clean up operations and contact relevant authorities.

- Document all events/actions.

- Report the spill to the Spill Report Line and follow up with a written spill report. This report shall summarize the initial report information; confirmation of spill volume; actions taken; future remediation/monitoring requirements; and a sketch map and/or photographs of the spill area.

- For spills on water, immediately mobilize additional containment and clean up equipment in consultation with the Coast Guard, Environment Canada, and Fisheries and Oceans Canada if on-site equipment is inadequate. Close isolation valves to stop fuel flow, if required. Deploy light-weight booms and oil absorbent materials to protect environmental resources along the coastline, as applicable. Track the progress of the spill, if of unknown origin.

Telephone, facsimile machines and e-mail are provided to on-site personnel to maintain communications with off-site parties. All intra-site communications occur via two-way radios. All on-site personnel are provided with radios. Table 10-1 provides all other contact numbers.

NOTE: The telephone and facsimile numbers and the e-mail addresses for the clean up contractor are not yet available at this time, as the contract has not yet been tendered or awarded.

Table 10-1: Contact List

Resource	Location	Phone No.
24 Hour Spill Line	Nunavut	867-979-6445
	NWT	867-920-8130
Iqaluit Fire Department	Nunavut	867-979-4422
Environment Canada, Enforcement Branch	Head of Enforcement – Craig Broome	867-669-4730
Indian and Northern Affairs Canada	Director of Operations (Iqaluit) – Stephen Traynor	867-975-4546
Renewable Resources Officer Stations - Keewatin and Inuvik	Regional Office (Kugluktuk)	867-982-7240
	Taloyoak	867-561-6231
	Gjoa Haven	867-360-7605
	Cambridge Bay	867-983-7314
GN Environmental Protection	Iqaluit	867-975-5910
Department of National	Environmental Officer – Phil Warren	613-998-7288

Defence through the contracting agency Defence Construction Canada	Deputy Project Manager – Scott Munn	613-990-9641
	Project Manager – Daniel Paquet	613-998-9523
North Warning System Operations	Major A.D. Cameron	613-998-8602

10.3 Initial Action

In the event of a spill, protection of human health and safety is paramount. Contamination of personnel involved in a clean up is a real possibility as is contaminated of the surrounding workplace and environment.

The individual discovering a spill shall:

1. Warn people in the immediate vicinity and evacuate if necessary.

2. Isolate or remove any ignition sources.

3. Identify the spilled material, if possible, and take all safety precautions before approaching it.

4. Locate the source of the spill.

5. Attempt to immediately stop the leakage and contain the spill, if safe to do so.

6. Assess the likely size, extent and condition of the spill.

7. Report to the Contract Coordinator the spill location, type of material, volume and extent, status of spill (direction of movement), and prevailing meteorological conditions.

8. In the event of a shoreline spill, provide information about beach location, contaminated area, beach characteristics, presence of wildlife and archaeological sites that may be threatened.

Once the Contract Coordinator has been contacted and arrives at the spill site, the following actions are to be taken:

1. Assess the severity of the spill via direct observation and/or information from communications.

2. Deploy equipment and personnel to initiate containment and clean up.

3. Prepare the Government of the Northwest Territories Spill Report Form.

4. Notify all other pertinent parties, including the Owner of the site, and other Government agencies.

10.4 Reporting Procedure

When reporting a spill to the 24 Hour Spill Report Line and completing the GNWT Spill Report Form, the following information shall be included:

- Date and time of spill;
- Location of spill; direction the spill may be moving;
- Name and phone number of a contact person close to the location of the spill;
- Type of containment spilled and quantity spilled;

- Cause of spill;
- Whether spill is continuing or has stopped;
- Description of existing containment;
- Action taken to contain, recover, clean up and dispose of spilled containment;
- Name, address and phone number of person reporting the spill; and
- Name of owner or person in charge, management or control of contaminants at the time of the spill.

10.5 Action Plan

The following substances could potentially be spilled at the CAM-3 site:

- Fuels and lubricating oils;
- Solvents;
- Alcohols and glycols;
- PCB containing liquids; and
- Heavy metal containing liquids.

10.5.1 Environmental Protection Measures

The environmental protection measures outlined in the following sections are to be taken by all workers on-site to reduce the chance of environmental impairment due to a spill, release or other accident.

10.5.2 General Procedures

The following general clean up procedures shall apply for all spill areas:

- Wear protective clothing as required for handling spills.
- Contain spills on soil or rock by construction earthen dykes using available material. If soil is not available, place sorbent material or boom in the path of the spill. As the sorbent barrier becomes saturated, continually replace it. Fuel or other liquids lying in pools, trenches or in specially constructed troughs are to be removed with pumps, buckets or skimmers.
- If ground is snow-covered, create snow dykes and line with a chemically-compatible liner for containment and recovery of liquid.
- For fuels on water, deploy containment booms and recover as much fuel as possible with a work boat and skimmer if the area has less than 1/10 ice cover. If the area is ice infested, burn any fuel spills using igniters.
- Apply sorbents, if necessary.
- Assess potential for disturbance of wildlife, fish and archaeological sites by spill or clean up operations and notify the relevant authorities.

- Notify environmental authorities to discuss disposal and clean up options.
- Conduct required clean up operations.
- Assess and appropriately treat any areas disturbed by clean up activities.
- Ensure the site has been completely restored and leave the site only when all work is finalized.

10.5.3 Fuel Storage Areas

- Avoid sites that slope towards waterways or other environmentally sensitive areas, exhibit ponding or flooding, or have high groundwater tables, or excessive seepage or ice-rich (thaw sensitive) soils. Avoid archaeological resources.
- Conduct fuelling and equipment lubrication in a manner that avoids spillage of fuels, oils, greases and coolants. When refuelling equipment, operators are to use leak-free containers and reinforced rip and puncture proof hoses and nozzles. Operators are to be in attendance for the duration of the refuelling operation and are to ensure that all storage container outlets are properly sealed after use.
- Store fuel in self-dyking containers, or position over an impervious liner and surround by an impervious dyke of sufficient height to contain not less than 110% of the capacity of the tank.
- Smoking is prohibited within 7.5 metres of the fuel storage facility. Provide appropriate signage.

- Inspect fuel storage facilities at least once each week for the duration of the project. Fire-fighting equipment is to be available for immediate access at each and every fuel storage facility.

- Store all barrels containing fuel and/or other hazardous materials in an elevated position either on their side with the bungs facing the 9 and 3 o'clock position or on pallets, upright, banded and encased in overpack containers.

- All barrels shall be individually identified. The label shall be to industry standards and shall provide all information necessary for health and safety, and environmental purposes. Make the Material Safety Data Sheets for all materials maintained in the construction camp available to all personnel.

- Treat all waste petroleum products including used oil filters as hazardous material, and handle and dispose of following the requirements as specified in the appropriate regulations.

- Conduct regular inspections of all machinery hydraulic, fuel, and cooling systems. Repair leaks immediately.

- Pre-assemble and maintain emergency spill response equipment including at least two fuel pumps, empty 200 L barrels and absorbent material sufficient to clean up a 1000 litre spill at all permanent fuel storage sites.

- Remove all barrels, redundant fuel storage sites and associated materials and equipment from the site at the conclusion of the work.

10.5.4 Hazardous Material Storage Areas

Hazardous waste materials are wastes or materials that are designated as "hazardous" under Nunavut or Federal legislation; or as "dangerous goods" under the *Transportation of Dangerous Goods Act* (TDGA). The *Canadian Environmental Protection Act* (CEPA) regulates material containing PCBs at greater than 50 ppm.

- Hazardous waste materials may be encountered during sorting of site and demolition debris and during the excavation of the landfills. Collect and sort hazardous materials using equipment suitable for the task.

- Locate the hazardous material processing area a minimum of 100 metres from the nearest archaeological site or water body, on ice poor, well drained soil, and as close to the location of work as possible.

- Control movement of vehicles and equipment between the hazardous material processing area and work site to prevent the spread of potentially hazardous material along roadways.

- Store hazardous materials so that each storage area is separated from the nearest water body by a 30 metre buffer zone.

- The TDGA and the International Air Transport Association (IATA) Dangerous Goods Regulations govern the packaging and shipment of hazardous goods within Canada. If shipping out of Canada, Canadian Regulations and regulations of the destination country both apply. Requirements of the International Marine Dangerous Goods Code (IMDGC) must be addressed in international waters (i.e., near Greenland).

- Any material classified as hazardous by the TDGA must be accompanied by the appropriate TDG shipping documents. The documents are to state the shipper, the receiver and all

carriers involved in the transport of the shipment. Non-hazardous materials are also to be accompanied by a document indicating ownership and responsibility of the receiver.

- Package all hazardous material in accordance with the Transportation of Dangerous Goods Regulations.

NOTE: MSD Sheets and other information on hazardous materials are to be provided by the contractor once the clean up activities begin.

10.6 Spill Recovery Success

In order to determine whether a spill has been successfully remediated, samples of soil and/or water are to be collected and tested for the chemical parameters contained in the spill material. If concentrations of the spill chemicals are not detected, or are at concentrations below the applicable Territorial, CCME, or DLCU criteria, the spill clean up will be determined a success.

10.7 Environmental Mapping

Drawings 101-105 in Appendix I show the overall site plan and the project layout, which identify the locations of site facilities and the work areas. Once the camp is established, the locations of all spill response equipment will be noted and provided to on-site personnel.

10.8 Resource Inventory

The following equipment is typically found on-site during a clean up program. The exact type of equipment found at the CAM-3 site may vary slightly.

- Front-end loader

- Bulldozer or equivalent with blade and ripper

- Bulldozer with blade and backhoe
- End-dump or body-job gravel trucks
- Fuel truck
- Platform/flatbed truck
- Crane
- Excavator
- Compactor
- Tow behind packer
- Truck/track mounted drill rig
- All terrain vehicles
- Pick up trucks
- Generators
- Water truck
- Screening plant
- Crushing plant

All equipment is generally stored at the construction camp/storage area where the camp personnel are stationed. Some equipment may be stored at the area in which the equipment is being used. All vehicles are to be equipped with absorbent materials, drip trays, shovels and disposal bags.

10.9 Training and Exercises

The Spill Response Training Program will provide instruction in all aspects of spill response stated in the plan for all on-site personnel.

Spill Response Training will include the following subjects:

- Spill awareness and prevention;
- Methods of detection;
- Storage and distribution systems;
- Storage of products on-site;
- Types of spills and seasonal considerations;
- Reporting procedures and initial responses;
- Spill response kit familiarization;
- Clean up and site remediation methods;
- Occupational health and safety; and

- Post spill review process and documentation.

NOTE: Spill response training is to be provided by the contractor.