



# SPILL CONTINGENCY PLAN

## FOR THE

### North Warning System

Contract # W8485-100224/001/NX  
CDRL 16.F.3.b

Document Number  
PLN-EHS-2, Rev 3, 01-Apr-2016

#### Prepared for

**North Warning System & Assoc. Projects**  
Aerospace Equipment Program Directorate  
455 Blvd de la Carrière  
11<sup>th</sup> Floor  
Gatineau, Québec  
K1A 0K2

#### Prepared by

**Raytheon**  
**Canada Limited**  
400 Cooper Street  
Suite 3000  
Ottawa, ON, K2P 2H8

**Warning: Information Subject to Export Control Laws** — This document (and/or software, if applicable) may contain export-restricted data whose export/transfer/disclosure is restricted by U.S. and Canadian law. Dissemination to non U.S. persons whether in United States or abroad requires an export license or other authorizations from the United States and Canadian Governments.

UNCONTROLLED WHEN PRINTED



UNCLASSIFIED

SOW REF: 16.F.3.b

## SIGNATURE/APPROVAL PAGE

Prepared by:

  
\_\_\_\_\_  
William Wyman

Date: 1 Apr 2016

**NWS Environmental Specialist**

Reviewed by:

  
\_\_\_\_\_  
Don Beattie

Date: 1 Apr 2016

**NWS Environmental Services Officer**

Reviewed by:

  
\_\_\_\_\_  
Kris Hildebrandt

Date: 1 Apr 2016

**NWS Quality Systems Officer**

Approved by:

  
\_\_\_\_\_  
Doug Beaton

Date: 1 Apr 2016

**NWS Program Manager**

UNCONTROLLED WHEN PRINTED



## CHANGE HISTORY

This sheet is a record of each issue of this document. When the revised document is issued, the previous issue is automatically superseded.

Revision	Date	Configuration Management	Pages Changed	Reason for Change
-	10-Dec-2014	-	All	Initial Submission ("Rev -" is Rev 1)
2	01-Apr-2015	-	All	Updates throughout
3	01-Apr-2016	-	ii	NWS Program Manager Changed.
			22	Updated contact list
<b>Document Title:</b> Spill Contingency Plan				<b>Document Number:</b> PLN-EHS-2

UNCONTROLLED WHEN PRINTED



## TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	PURPOSE.....	1
3.0	SCOPE .....	1
4.0	APPLICABLE DOCUMENTS.....	3
5.0	GENERAL.....	3
5.1	Spill Definition.....	3
5.2	Spill Risk .....	3
5.3	Bulk Fuel Description and Characteristics .....	4
5.4	Bulk Fuel Storage and Distribution System.....	4
5.5	Fuel Re-supply and Use .....	5
6.0	RESPONSIBILITY AND AUTHORITY .....	6
6.1	Raytheon Canada Limited .....	6
6.2	North Warning System Office, Department of National Defence .....	7
6.3	Fuel Re-supply Contractors and Sub-Contractors.....	7
6.4	Division of Responsibility During Re-Supply .....	7
7.0	PROCEDURE .....	8
7.1	Spill Prevention .....	8
7.2	Spill Detection .....	9
7.3	Spill Response .....	9
7.3.1	SPILL REPORTING .....	9
7.3.1.1	Spill Discovery/Identification .....	9
7.3.1.2	NWSCC.....	10
7.3.1.3	LSS Manager .....	10
7.3.1.4	Environmental Services Officer .....	11
7.3.1.5	Quality Systems Officer/Risk Manager .....	13
7.3.2	DISPATCH OF EMERGENCY RESPONSE TEAM .....	13
7.3.3	Termination of Leakage/Flow at Source .....	13
7.3.4	Spill Containment .....	14
7.3.5	Clean-Up of Spilled Material .....	14
7.3.6	Disposal of Clean Up Materials .....	14
7.3.6.1	Used Sorbent Materials .....	14
7.3.6.2	Fuel/Water Mixture .....	14
7.3.6.3	Contaminated Snow .....	15
7.3.6.4	Contaminated Soil .....	15
7.3.6.5	Reporting Disposal Actions.....	15
7.3.7	Site Remediation .....	15
7.3.8	Final Report and Post-Spill Review .....	16
7.4	Spill Response - Fuel Re-supply Activities.....	16
7.5	Spill Simulation Exercise .....	16
7.6	Spill Response Training Program .....	17
8.0	FORMS AND QUALITY RECORDS .....	17
9.0	ACRONYMS .....	18
	APPENDIX 1: RISK ANALYSIS OF SPILLS ON NWS SITES.....	20
	APPENDIX 2: EMERGENCY CONTACTS LIST .....	22
	APPENDIX 3: EHS ENVIRONMENTAL INITIAL INCIDENT REPORT .....	24

UNCONTROLLED WHEN PRINTED



SOW REF: 16.F.3.b

APPENDIX 4: EHS ENVIRONMENTAL FOLLOW UP INCIDENT REPORT .....	25
APPENDIX 5: REPORTING CRITERIA FOR SPILL LINES .....	26
APPENDIX 6: NT-NU SPILL REPORT FORM AND GUIDE .....	28

## LIST OF FIGURES

Figure 1: Bulk Fuel Storage and Distribution System .....	5
Figure 2: Spill Response Flow Chart.....	12
Figure 3: ERT Responsibilities .....	13

**UNCONTROLLED WHEN PRINTED**



## 1.0 INTRODUCTION

This plan provides instructions for spill prevention control and countermeasure plans for bulk fuel and other hazardous materials (HAZMAT) which are present at the North Warning System (NWS) facilities. Full definitions of 'spill' and 'HAZMAT' are provided in *Section 5.1* below.

## 2.0 PURPOSE

The purpose of this plan is to:

- a. provide clear procedures and instructions for responding, mitigating, and reporting fuel & HAZMAT spills;
- b. minimize the environmental impacts of fuel and HAZMAT spills by establishing pre-determined responses and plans of action;
- c. ensure the health and safety of employees, contractors, subcontractors, and local communities is not compromised due to fuel and/or Hazmat activities to the extent possible;
- d. provide a reporting structure for fuel and HAZMAT spills;
- e. ensure the environment is maintained in its natural state and conduct remediation activities as may be required;
- f. identify the roles and responsibilities of all parties involved in fuel and HAZMAT spill response activities; and
- g. identify resource requirements for the response to fuel and HAZMAT spills; and
- h. perform annual review and update of plan in conjunction with EPP or more frequently as circumstances warrant.

This plan combined with site descriptions from EPP section 25 meets the requirements of an Emergency Plan under the federal Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations (STS Regs) section 30.

## 3.0 SCOPE

This plan applies to all activities and facilities pertaining to NWS sites. This includes:

- Short Range Radar (SRR) sites which operate unattended;
- Long Range Radar (LRR) sites which operate unattended with occasional staff visits; and
- Logistics Support Sites (LSS) which are staffed to support SRR and LRR operations.

This plan is not applicable at:

- LSS-I, the LSS located at the Forward Operating Location (FOL) in Inuvik, Northwest Territories.
  - This FOL is administered by 4 Wing Canadian Forces Base (CFB) Cold Lake, Alberta.

**UNCONTROLLED WHEN PRINTED**



- The site will report spills to the North Warning System Control Centre (NWSCC) and Contract Management Office (CMO), NWSCC will notify North Warning System Office (NWSO) of the spill and NWSO will liaise with the Wing Environment Officer, as required.
- LSS-Q, the LSS located at the FOL in Iqaluit, Nunavut.
  - This FOL is administered by 3 Wing CFB Baggotville, Quebec.
  - The site will report spills to the NWSCC and CMO, NWSCC will notify NWSO of the spill and NWSO will liaise with the Wing Environment Officer, as required.
- LSS-G, the LSS located at 5 Wing CFB Goose Bay, Labrador
  - This site will report spills to the Base Fire Hall.
  - Spill reporting and response will be actioned by the Base to conform with 1 Canadian Air Division Head Quarters (CAD HQ) Uniform Spill Reporting Protocol and the 5 Wing Emergency Response Plan.
  - The site will report spills to the NWSCC and CMO, NWSCC will notify NWSO of the spill and NWSO will liaise with the Wing Environment Officer, as required.
- The NWSCC, located at 22 Wing CFB North Bay, Ontario
  - This site will report spills to the 22 Wing Environment Officer.
  - Spill reporting and response will be actioned by the Base to conform with 1 CAD HQ Uniform Spill Reporting Protocol.
  - Spill response action will be taken by the local community emergency response service.
  - The site will report spills to the NWSCC and CMO, NWSCC will notify NWSO of the spill and NWSO will liaise with the Wing Environment Officer, as required.
- North Warning System Support Centre (NWSSC), located at 22 Wing CFB North Bay, Ontario
  - This site will report spills to the 22 Wing Environment Officer.
  - Spill reporting and response will be actioned by the Base to conform with 1 CAD HQ Uniform Spill Reporting Protocol.
  - Spill response action will be taken by the local community emergency response service.
  - The site will report spills to the NWSCC and CMO, NWSCC will notify NWSO of the spill and NWSO will liaise with the Wing Environment Officer, as required.
- The Short Range Development Site (SRD), located at 22 Wing CFB North Bay, Ontario
  - This site will report spills to the 22 Wing Environment Officer.
  - Spill reporting and response will be actioned by the Base to conform with 1 CAD HQ Uniform Spill Reporting Protocol.
  - Spill response action will be taken by the local community emergency response service.
  - The site will report spills to the NWSCC and CMO, NWSCC will notify NWSO of the spill and NWSO will liaise with the Wing Environment Officer, as required.

**UNCONTROLLED WHEN PRINTED**



## 4.0 APPLICABLE DOCUMENTS

Raytheon Canada Limited (RCL) Environmental Protection Plan (EPP) applicable documents:

- a. RCL's EPP for the O&M of the NWS;
- b. NWS O&M Contract SOW; and
- c. RCL's Environmental Incident Reporting SOP (SP-EHS-1).

## 5.0 GENERAL

### 5.1 SPILL DEFINITION

In this plan the following definitions apply:

- Spill – the accidental and/or uncontrolled discharge of any volume of fuel or HAZMAT from its storage container or structure, vehicle, pipe or other container:
  - into the natural environment; or
  - within a building.
- Fuel – At NWS sites, power generation and mobile support equipment (e.g. trucks, bull dozers, etc.) use Jet A1. See *Section 5.3*
- HAZMAT – Hazardous materials, including but not limited to:
  - polychlorinated biphenyls (e.g. PCB-containing oil or paint);
  - chlorinated and non-chlorinated solvents (e.g. cleaner-degreasers);
  - flammable gases (e.g. acetylene);
  - waste petroleum products (e.g. used engine oil);
  - corrosives (e.g. battery acid);
  - glycol (e.g. antifreeze);
  - asbestos (e.g. pipe insulation); and/or
  - halocarbons (e.g. CFC-12, FM-200).

Discharges of any quantity or physical state (solid, liquid, gas) are included in this definition. There may be circumstances where the discharge of a substance not on the above list may be considered hazardous by personnel discovering the spill, e.g. large volumes of spilled wastewater. When in doubt, report the spill to the LSS Manager, who in turn can seek guidance from the Environmental Services Officer. Reporting procedures for Halocarbon release are in within the Halocarbon Management Plan.

### 5.2 SPILL RISK

Raytheon Canada Limited (RCL) has established policies and procedures to reduce the risk and mitigate the impact of fuel or HAZMAT spills. Controls include:

- a. Limiting the quantity of HAZMAT at site and ensuring only required minimal volumes are present;

UNCONTROLLED WHEN PRINTED



- b. Ensuring storage requirements of materials are followed. Store materials indoors when possible (e.g. the Nunavut Water Board Licences for CAM-M, CAM-3, FOX-M, FOX-3, DYE-M, and BAF-3 require that HAZMAT is stored in secondary containment); and
- c. Identification of spill potential risk and evaluation of potential impact (e.g. Jet A1 fuel).

Some of the risks of spills on NWS sites can be found in Appendix 1.

### **5.3 BULK FUEL DESCRIPTION AND CHARACTERISTICS**

The fuel used for all purposes on the NWS sites is Jet A1 (3A), Arctic Grade, Aviation turbine fuel, Kerosene type. This fuel type is flammable with a flash point of 38°C. It contains paraffin, olefin, naphthalene, and aromatics. The aromatics and naphthalene in Jet A1 evaporate easily and are highly toxic.

The Jet A1 characteristics allow it to easily be absorbed by soil and to be dispersed as a sheen on top of water surfaces. Land spills of Jet A1 cause contamination of soil. Water spills of Jet A1 may cause alteration of fish habitat. The federal Fisheries Act (s.36) prohibits the deposit of any deleterious substance to water bodies.

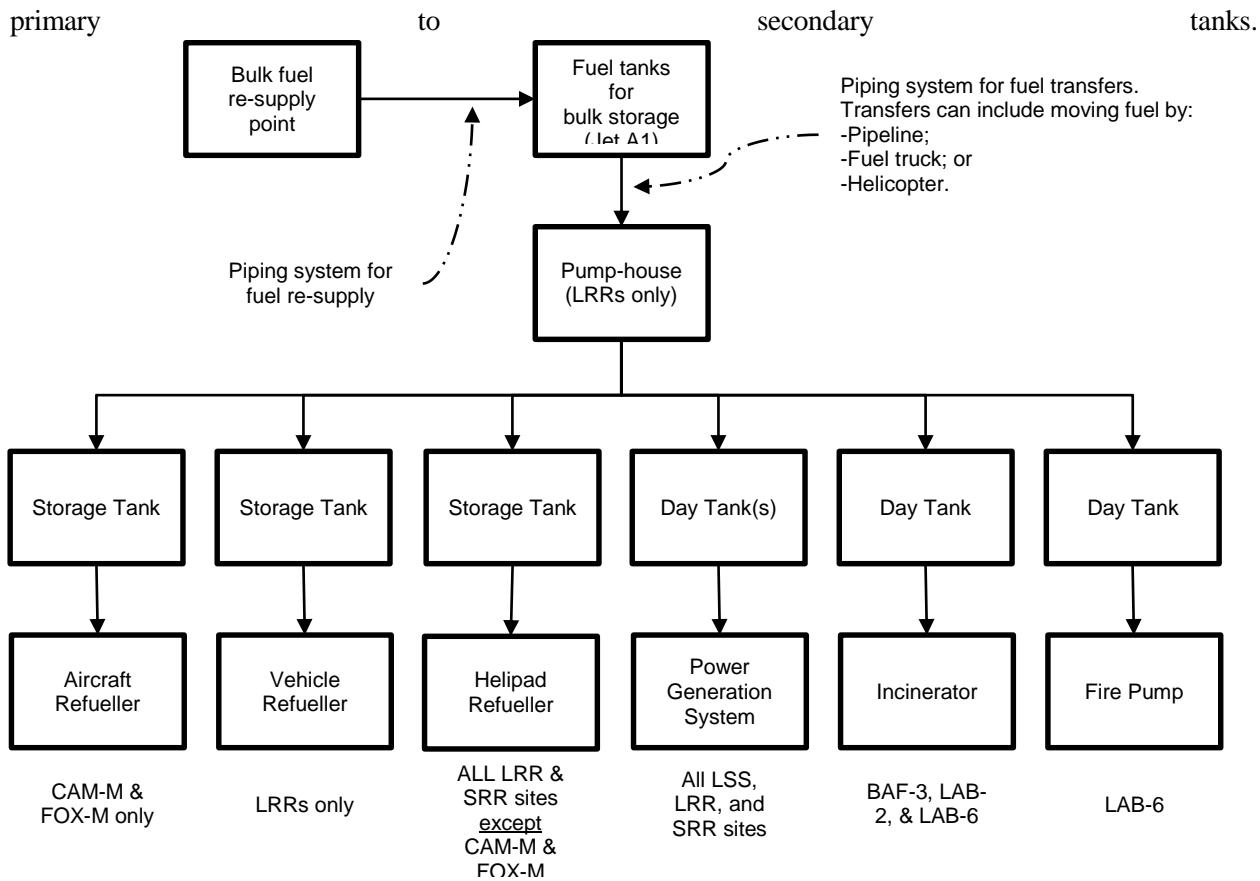
The only NWS site that does not use Jet A1 for fuel is CAM-CB, the SRR site located in Gjoa Haven, Nunavut. CAM-CB uses diesel fuel. Diesel is flammable with a flash point of 38°C and shares the other characteristics and potential impacts of Jet A1 shown above. This plan will reference Jet A1 as the bulk fuel on NWS sites because the use of diesel is limited to one site and the characteristics of Jet A1 and diesel are similar.

### **5.4 BULK FUEL STORAGE AND DISTRIBUTION SYSTEM**

Each LRR site, SRR site, and LSS has fuel storage tanks and piping systems for fuel distribution. As per section 3.0 above, LSS-I, LSS-Q, and LSS-G are outside of the scope of this spill plan because they are covered by other spill contingency plans.

The main components of the bulk fuel storage and distribution system are shown in **Figure 1**. Note: the term “fuel resupply” refers to the task of bringing fuel to the site; “fuel transfer” refers to the pumping of fuel from

**UNCONTROLLED WHEN PRINTED**



**Figure 1: Bulk Fuel Storage and Distribution System**

The bulk fuel systems vary from each site. Review the site descriptions in the EPP for specific details.

All fuel tanks are located above ground (AST) and range in size from 200-litre capacity to 946,300 litre capacity. Bulk storage tanks are of horizontal, vertical, or “self-dyked” (i.e. with integral secondary containment) types, located inside earthen containment berms or dykes at LRR sites. Tanks which continue to be actively used at LRRs are contained by earthen dykes lined with a geotextile membrane. Bulk storage tanks located at SRR sites, LSS locations and some LRR sites incorporate an integral, external, secondary containment vessel that meets regulatory compliance.

Oils and lubricants, used in the operation of power generating systems (PGS) and vehicles, are stored in site specific storage areas and in dedicated storage sheds. Waste products are stored in dedicated areas prior to disposal by retrograde activity.

## 5.5 FUEL RE-SUPPLY AND USE

Bulk fuel re-supply of all LRR and all SRR sites takes place during the summer season every year, or every two years. Bulk fuel is transported to most LRRs and SRRs by sealift (barges or ships). The FOX-3 LRR

UNCONTROLLED WHEN PRINTED



site and some SRR sites are re-supplied by airlift. Contractors and sub-contractors engaged in fuel resupply operations must have their own Spill Contingency Plans to cover their area of responsibility.

Uses of fuel at LRR sites include:

- a. operation of the power generating system;
- b. aircraft re-fuelling;
- c. vehicles;
- d. furnaces and boilers; and
- e. Fire pumps and incinerator at BAF-3, LAB-2, and LAB-6.

Uses of fuel at LSSs and SRR sites include:

- a. operation of the power generating system;
- b. aircraft re-fuelling; and
- c. furnaces.

## **6.0 RESPONSIBILITY AND AUTHORITY**

RCL employees, contractors, subcontractors, and anyone attending NWS sites are responsible for fuel and/or HAZMAT spill prevention, detection, and response actions during NWS O&M activities.

### **6.1 RAYTHEON CANADA LIMITED**

RCL is responsible for:

- a. Maintaining an up-to-date Spill Contingency Plan (this document);
- b. Abiding by all fuel and HAZMAT handling and maintenance instructions;
- c. Providing competent individuals to perform fuel and HAZMAT associated tasks;
- d. Identifying the requirements of sub-contractors involved in NWS O&M activities; and
- e. Responding appropriately to fuel and HAZMAT spills.

When a fuel or HAZMAT spill is reported at an NWS site, RCL will mobilize personnel, materials and equipment to respond immediately upon receipt of the spill report or as soon as practicable. Considerations will be taken for weather, temperature, season, and transportation availability.

RCL spill response personnel will manage most releases unless the circumstances of the spill are deemed, by the Environmental Services Officer, to require external resources.

When required, additional assistance will be requested from the following organizations, including but not limited to:

- a. other NWS sites;
- b. the Department of National Defence (DND);
- c. the Canadian Coast Guard;
- d. Parks Canada;
- e. Environment Canada;
- f. Department of Fisheries and Oceans;

**UNCONTROLLED WHEN PRINTED**



- g. Government of Yukon;
- h. Government of Northwest Territories;
- i. Government of Nunavut;
- j. Government of Newfoundland and/or
- k. Local fire departments.

Additional assistance may also be hired from:

- a. Northern residents;
- b. Local communities; and/or
- c. Commercial spill response firms.

## **6.2 NORTH WARNING SYSTEM OFFICE, DEPARTMENT OF NATIONAL DEFENCE**

As the contracting agency, NWSO is responsible for ensuring that adequate spill detection and response capabilities are in place and monitored for all NWS operations.

## **6.3 FUEL RE-SUPPLY CONTRACTORS AND SUB-CONTRACTORS**

Responsibilities of contractors and sub-contractors engaged in fuel resupply activities at NWS sites include:

- a. Provision of a Spill Response Plan which describes:
  - i. spill response action plans for initial response;
  - ii. containment, clean-up, disposal and site remediation of spills;
  - iii. chain of command and responsibilities of personnel;
  - iv. materials and equipment available for deployment; and
  - v. post spill lessons learned meetings and revisions of spill plan as required.
- b. Maintain sufficient personnel, materials and equipment for adequate response to any spills which may occur during fuel resupply operations.

In the event that a spill occurs during fuel resupply operations, RCL employees will assist in spill response activities to the fullest extent, when and where possible.

## **6.4 DIVISION OF RESPONSIBILITY DURING RE-SUPPLY**

The dividing line of responsibility for spill response and reporting between RCL and the sealift/airlift re-supply contractors/subcontractors is the re-supply pipeline beach head or airlift de-fueling head.

- a. If a fuel spill occurs between the sealift re-supply pipeline beach head and the ship or barge, the sealift contractor's Spill Contingency Plan is implemented. The sealift contractor assumes the role of Spill Control Manager and reports the spill to the required authorities.
- b. Similarly, if the spill occurs between the airlift de-fueling head and the aircraft tank or bladder, the airlift contractor assumes the role of Spill Control Manager and reports the spill to the required authorities.

**UNCONTROLLED WHEN PRINTED**



- c. In all other instances, the RCL Fuel & HAZMAT Spill Contingency Plan is implemented. The LSS Manager becomes the Spill Control Officer, and the CMO Environmental Services Officer becomes the Spill Control Manager and reports the spill.
- d. In all instances, the individual discovering the spill must take steps to ensure that personnel on the ship, barge, airplane or helicopter are contacted to stop the pumps and close the isolation valves, if applicable.
- e. In all instances, the NWSCC must be informed even if the spill has occurred within the contractor's area of responsibility in order to inform the LSS Manager, CMO and NWSO. In cases where the responsibility resides with the contractor, RCL will provide assistance, as requested by the sealift or airlift contractor, in implementing their Spill Contingency Plan.

## 7.0 PROCEDURE

RCL manages the risks of spills by ensuring there are effective spill prevention programs and controls, maintaining and testing spill detection systems, and providing competent spill response resources.

### 7.1 SPILL PREVENTION

RCL will use comprehensive controls and standardized practices/procedures for reducing the likelihood of spills. These include but are not limited to:

- a. Establishment of secure storage areas for HAZMAT;
- b. Inventory management of all stored fuel/Hazmat chemicals;
- c. Labelling of HAZMAT in accordance with Workplace Hazardous Material Information System (WHMIS) legislation;
- d. Transportation of HAZMAT in accordance with the Transportation of Dangerous Goods (TDG) Regulations;
- e. Training of personnel in correct handling, use, and storage of hazardous materials;
- f. Performing annual site conditions surveys to identify items of risk (e.g. bent pipes, damaged pipe supports, rust);
- g. Preventive Maintenance Inspections (PMIs) of bulk fuel system components (e.g. pumps, valves), to include integrity testing where necessary;
- h. Regular maintenance of bulk fuel storage tank systems;
- i. Training of bulk fuel technicians in standard operating procedures (e.g. fuel transfers, fuel resupply);
- j. Safeguards for bulk fuel systems at unattended sites (e.g. "Time-Outs" for fuel pumps during transfer operations);
- k. Inspections are routinely performed to ensure proper operation of equipment; and that records are maintained to document the successful implementation of these requirements;
- l. Security; and
- m. Administration of program effectiveness, managing associated risks, spill supplies and monitoring systems.

UNCONTROLLED WHEN PRINTED



## 7.2 SPILL DETECTION

Methods employed for detection of spills include:

- a. *Visual & odour detection.* This method is usually conducted in the summer months when there is limited or no snow cover.
- b. *Inventory reconciliation.* Inventory reconciliation is completed by dipping the bulk fuel tanks. This method of measurement provides data comparing actual with estimated consumption figures, which may indicate a spill occurrence. Loss of inventory may also not be spill related (e.g. theft of product), to validate an inspection should take place; and
- c. *Remote monitoring.* Alarms are sent to the NWSCC when fuel levels of indoor day tanks vary by more than the expected amount or fuel pumps operate with greater than expected frequency at unattended sites. Remote monitoring of bulk fuel storage tanks at NWS sites is not currently practiced due to technological limitations (e.g. reliable cold-weather operation of equipment including probes, etc.).

## 7.3 SPILL RESPONSE

Details of RCL's spill response procedures are provided below.

### 7.3.1 SPILL REPORTING

All outdoor and indoor spills are to be reported to the LSS manager or the NWSCC, as below, regardless of the volume.

The responsibilities of the different levels of reporting hierarchies are outlined below.

Telephone numbers for key individuals are provided in the Emergency Contact List in Appendix 2.

#### 7.3.1.1 Spill Discovery/Identification

Identify the spill, in association with the LSS Manager whenever possible.

Make immediate verbal report to NWSCC (i.e. try calling the zone manager first, then if you can't contact them, call the NWSCC).

The report must contain the following information:

- Location of the spill;
- Known or suspected time of the spill (provide location time zone e.g. 18:00 EST);
- Substance spilled;
- Estimated volume spilled (determine estimation based on last dip/reconciliation)
- Cause, if readily identifiable;
- Tracking of the spill (movement, speed and direction);
- Size of area contaminated, and depth of contamination, if possible;

UNCONTROLLED WHEN PRINTED



SOW REF: 16.F.3.b

- Conditions at the spill site including: (i) weather, (ii) depth of snow cover (if present), (iii) terrain, (iv) proximity of the spill to bodies of water, (v) wind speed and direction, and (vi) wave height (if a marine spill);
- Containment of the spill (none, natural, booms, dykes);
- Actions taken or proposed; and
- Potential associated hazards to people.

Provide a hand drawing of the area locating the spill and associated details, to the LSS Manager. If communications are not possible, deliver the map and associated paperwork to the LSS Manager immediately upon return to base.

If the NWSCC operators suspect a spill as a result of Supervisory Control and Data Acquisition (SCADA) inputs, they will advise the appropriate LSS Manager, the Environmental Services Officer, and NWSO via telephone.

If the spill is discovered at the NWSSC or the SRD, the person discovering the spill must notify the NWSCC.

### **7.3.1.2 NWSCC**

Upon being notified the NWSCC shift technician must:

- Ensure the LSS Manager is informed as soon as possible.
- Phone initial contact persons within 30 minutes, i.e. phone one person for each group of the Environmental Incident reporting group (Environmental Services, NWSO, etc.)
- Prepare an Incident Initial Notification form for Environmental Spill (Appendix 3). E-mail the report within 3 hours of notification to the designated addressee groups.

#### ***Spills reported by the Canadian Rangers/Third Parties***

Upon being notified by the Canadian Rangers or third parties, the NWSCC shift technician must immediately proceed with the notification steps outlined in *Section 7.3.1.2*. RCL will respond to spills reported by the Rangers and third parties on a case by case basis depending on the severity of the spill, its proximity to sensitive ecological components, potential health and safety hazards, and property damage.

### **7.3.1.3 LSS Manager**

Upon being notified, the LSS Manager must proceed with the reporting procedures as follows:

- Raise Work Order for spill response and clean-up.
- Prepare an *EHS Environmental Follow Up Incident Report* (Appendix 4). E-mail report to designated groups within 12 hours of the telephone notification to NWSCC.
- Attach or fax a sketch site plan showing the contaminated locations(s) to the designated groups.

See **Figure 2** for communication/task flow chart.

**UNCONTROLLED WHEN PRINTED**



### **7.3.1.4 Environmental Services Officer**

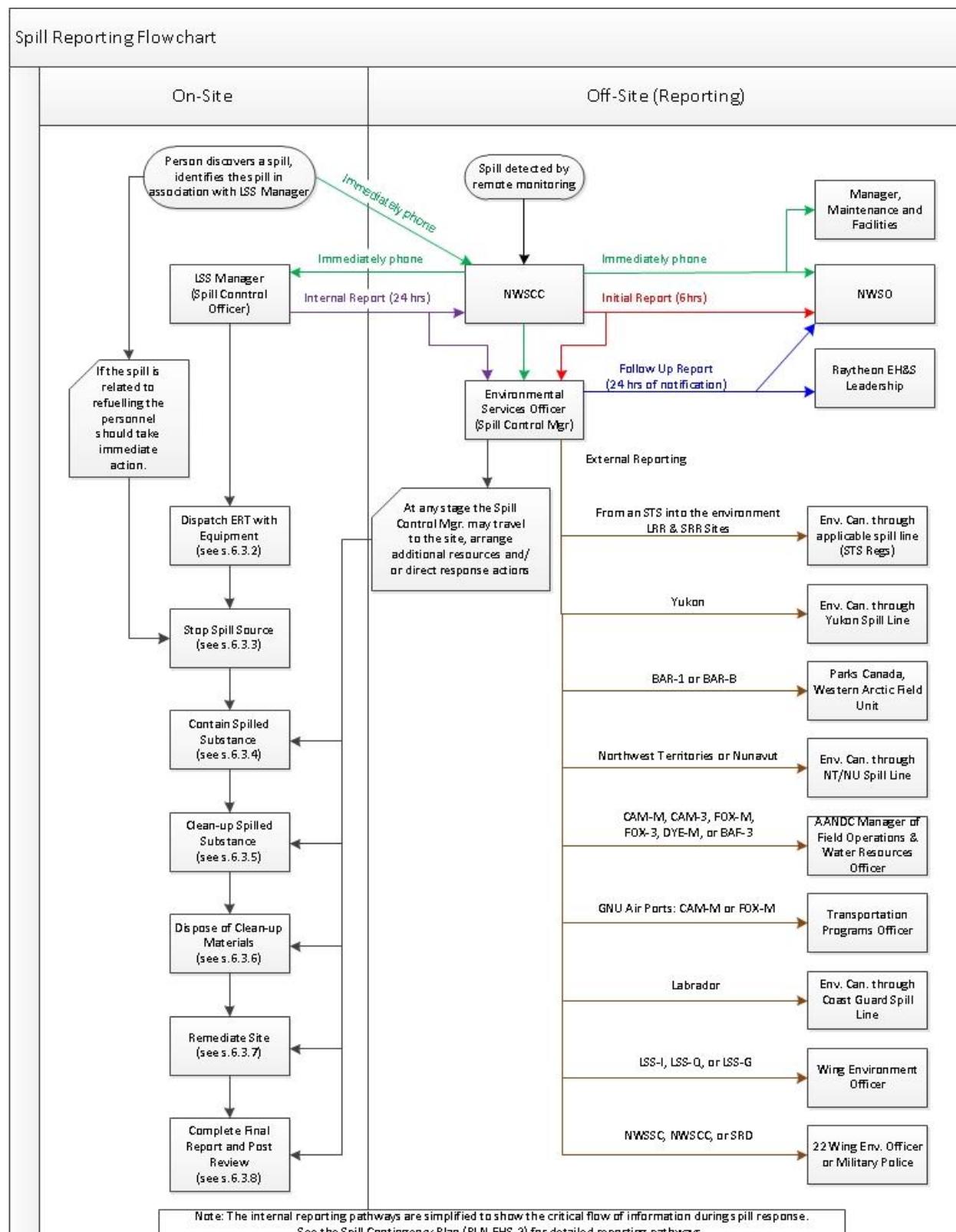
RCL's Environmental Services Officer will assume the position of Spill Control Manager with authority over all spill response activities.

Upon notification of a spill, the Environmental Services Officer will perform the following:

- Prepare the EHS Environmental Follow Up Incident Report (Appendix 4) based on the information provided by the LSS Manager's report. E-mail the report to the designated groups within 24 hours of notification.
- Notify Spill Line as required by telephone. Then complete and submit the NT-NU Spill Report as required in Appendix 6.
- Maintain contact with NWSO and keep them apprised of any changes to the spill status.
- Notify the Manager of Resource Conservation of Parks Canada's Western Arctic Field Office for spills at BAR-B or BAR-1 (Ivvavik National Park).
- Notify the Transportation Programs Officer for spills on airport property at Hall Beach or Cambridge Bay.
- Notify AANDC Manager of Field Operations and Water Resources Inspector for spills at: CAM-M, CAM-3, FOX-M, FOX-3, DYE-M, and BAF-3.
- Within 30 days, submit a written report to the AANDC Water Resource Officer/Inspectors that includes: amount and type of spilled product, GPS coordinates of location of spill, and measures taken to contain and clean up the spill site for spills at: CAM-M, CAM-3, FOX-M, FOX-3, DYE-M, and BAF-3.
- Notify the respective Wing Environment Officer for spills at LSS- Inuvik, LSS-Iqaluit and LSS-Goose Bay.
- Notify 22 Wing Environment Officer or Military Police for spills at NWSSC, NWSCC and SRD.

RCL's Environmental Services Officer will report details of all spills to the NWSO TA by 31 January and 31 July each year. Information for the report is tracked in the spreadsheet *16.C.2.g - Semi-annual Environmental Status Report*.

**UNCONTROLLED WHEN PRINTED**



**Figure 2: Spill Response Flow Chart**

**UNCONTROLLED WHEN PRINTED**



### 7.3.1.5 Quality Systems Officer/Risk Manager

The Quality Systems Officer/Risk Manager, with input from the Environmental Services Officer, will determine what spills require a Root Cause Analysis (RCA) and a Corrective Action Review (CAR) and will conduct an RCA and CAR of the selected spills. The Results of the RCA and the CAR will be added to the Environmental Follow Up Incident for the spill. The Quality Systems Officer/Risk Manager will also update the risk management plan following the RCA to reflect current practices to avoid similar incidents.

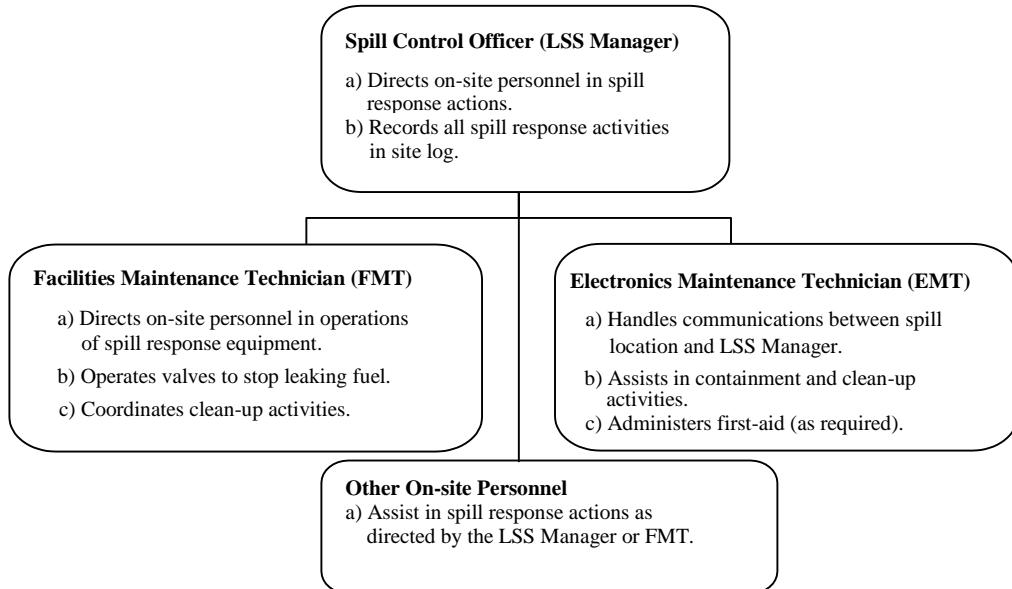
### 7.3.2 DISPATCH OF EMERGENCY RESPONSE TEAM

RCL's Environmental Services Officer will assume the position of Spill Control Manager. The LSS Manager will assume the position of Spill Control Officer and have authority over the Emergency Response Team (ERT). The LSS Manager will raise the appropriate Work Order(s) to identify and track the necessary repairs, clean-up activities, and disposal actions. Communications will be maintained between the ERT and the LSS Manager throughout the duration of any spill response. The typical responsibilities and composition of an ERT is presented in Figure 3.

### 7.3.3 TERMINATION OF LEAKAGE/FLOW AT SOURCE

If the spill is still taking place (e.g. flowing, leaking, dripping) the ERT will take measures to stop the spill. This would include shutting off pumps, closing isolation valves, applying chemical cold patches to tanks, transferring fuel to another tank, attaching a dresser coupling to the pipe or valve, attaching a blind flange or pipe cap, or other appropriate actions, as determined by the Spill Control Officer.

When third-parties are involved (e.g. sealift or airlift bulk fuel re-supply) the division of responsibilities are stated in *Section 6.3* above.



**Figure 3: ERT Responsibilities**

**UNCONTROLLED WHEN PRINTED**



### **7.3.4 SPILL CONTAINMENT**

The ERT will deploy materials from the on-site spill control kit and use on-site equipment available to contain the spill, possibly including the construction of temporary containment berms. See EPP Section 25 – Site Descriptions for a list of what is contained in the spill kit(s) at each site. In cases where the spill exceeds the capabilities of on-site resources, the Spill Control Manager will make arrangements for additional personnel, equipment, and materials from additional resources, as listed in section 6.1 above.

### **7.3.5 CLEAN-UP OF SPILLED MATERIAL**

If possible without putting personnel at risk, the ERT will commence cleanup with the equipment available once containment of the spill has been achieved (i.e. absorbent material, salvage drums, etc.). Additional resources may be dispatched to the spill site by the Spill Control Manager in cases where the spill clean-up exceeds the capabilities of the on-site resources.

Clean-up actions are identified and tracked through the spill's Work Order. A spill clean-up Work Order cannot be closed until all actions are completed or the remaining requirements transferred to a separate Work Order.

Weather permitting spills will be cleaned up in the following time frame:

- a. Spills less than 205 L will be cleaned up in less than 3 days; and
- b. Spills less than 1000 L will be cleaned up in less than 15 days.

Clean up will meet the Canadian Council of Ministers of the Environment (CCME) Canada Wide Standards for Petroleum Hydrocarbons in Soil and CCME Soil Quality Guidelines. Samples will be taken as per EPP Section 22 – Spill Sampling Procedure to confirm that the CCME standards and guidelines are met.

### **7.3.6 DISPOSAL OF CLEAN UP MATERIALS**

Waste generated from spill response activities will be disposed of according to the following procedures.

#### **7.3.6.1 Used Sorbent Materials**

Used sorbent materials will be placed in drums and sent to a licenced hazardous waste disposal facility as per EPP Section 17 - Hazardous Material Retrograde.

#### **7.3.6.2 Fuel/Water Mixture**

Fuel/water mixtures may be dealt with on-site during the clean-up phase, and/or collected and drummed for treatment/disposal off-site (e.g. using a oil/water separator, filter bank, etc.). Drummed fuel/water mixtures will be sent to a licenced hazardous waste disposal facility as per EPP Section 17 - Hazardous Material Retrograde.

The decision to recover of fuel for reuse will be made on a case by case basis. Some factors that could impact the decision includes:

- a. The quantity of fuel recovered; and

**UNCONTROLLED WHEN PRINTED**



b. The quality of the fuel recovered (i.e. the fuel / water ratio, results of fuel quality tests, etc.).

### **7.3.6.3 Contaminated Snow**

Small volumes of contaminated snow are to be shoveled into an open head drum, along with a hydrophobic sorbent mat, pillow or sock. Each drum is to be marked as to its contents with permanent marker or spray paint as follows: "Snow with <substance>, <site>, <date>." Drums may be stored in a level area outside to await spring thaw, or moved indoors to speed melting. The melted snow is to be treated as fuel/water mixture, as discussed in the preceding section. Large areas of contaminated snow may be removed/isolated and surrounded with hydrophobic absorbent booms to gradually filter meltwater. Decisions in such a situation will be at the discretion of the Spill Control Manager.

Drummed contaminated snow will be sent to a licenced hazardous waste disposal facility as per *EPP Section 17 - Hazardous Material Retrograde*.

### **7.3.6.4 Contaminated Soil**

Decisions regarding remediation of contaminated soil must be made by the Spill Control Manager on a case-by-case basis. Should contaminated soil need to be excavated and contained, the following points are to be noted:

- a. Do not mix soil with other spill wastes.
- b. Do not overfill open head drums; they will need to be moved without the aid of heavy equipment at SRRs.
- c. Each drum is to be marked as to its contents with permanent marker or spray paint as follows: "Soil with <substance>, <site>, <date>".

Drummed contaminated soil will be sent to a licenced hazardous waste disposal facility as per *EPP Section 17 - Hazardous Material Retrograde*.

### **7.3.6.5 Reporting Disposal Actions**

The LSS Manager is to advise the Spill Control Manager of disposal actions taken by the ERT, through e-mail or Internal Spill Report updates. Drums of waste left at an SRR must be transported to the LSS or LRR within 4 months of the spill response.

Spill clean-up Work Orders are to include the removal and disposal actions for spill wastes, the number of drums involved and their contents. A spill clean-up Work Order cannot be closed until the disposal actions are completed or the remaining requirements are transferred to a separate waste disposal Work Order.

## **7.3.7 SITE REMEDIATION**

All remediation efforts will be coordinated through Raytheon Canada Ltd. Site remediation will be undertaken by trained NWS personnel or by experienced commercial spill response firms.

**UNCONTROLLED WHEN PRINTED**



### **7.3.8 FINAL REPORT AND POST-SPILL REVIEW**

A final report will be created and contain the following:

- a. Initial report information;
- b. Confirmation of spill volume;
- c. Actions taken;
- d. Future remediation/monitoring requirements;
- e. Sketch map and/or photographs of spill area;
- f. Lessons learned.

A joint review of all spill response activities and involved parties will be held by RCL and NWSO in order to:

- a. Document all events from the initial spill report through to site remediation;
- b. Analyze spill response actions taken and their effectiveness in order to:
  - i. Revise action plans as required;
  - ii. Amend spill response procedures as required; and
  - iii. Amend the spill response training program.

A post-spill review will take place for every major spill (e.g. > 2500 L) and for any lesser spill (HAZMAT or fuel) when requested by RCL or NWSO.

### **7.4 SPILL RESPONSE - FUEL RE-SUPPLY ACTIVITIES**

The *Hazardous Materials General Management Plan* (PLN-EHS-3), Section 14 of the EPP, describes the bulk fuel re-supply process for NWS sites. Fuel re-supply is conducted by: (a) sealift (e.g. vessel or barge) and (b) airlift (e.g. rotary wing or fixed wing aircraft).

Transport of the bulk fuel is performed by contractors and subcontractors who must each possess their own spill contingency plan. The re-supply contractor will be responsible for spill response when the spill originates from the contractor's equipment, i.e. occurs between the vessel and the junction with NWS piping. Response to a spill originating from NWS piping or facilities during resupply will be the responsibility of RCL, and will be reported and responded to as per this Plan.

### **7.5 SPILL SIMULATION EXERCISE**

One spill response simulation exercise will be conducted annually. The scenario will be developed by Environmental Services and will be based on a spill of a size and location which poses a direct threat to fish habitat. The spill response simulation exercise will:

- a. Test spill contingency response procedures;
- b. Ensure staff preparedness; and
- c. Identify any areas requiring improvement.

Results of the spill response simulation exercise will be recorded and reported to the NWSO TA. The report will include:

- a. The number of participants;

**UNCONTROLLED WHEN PRINTED**



- b. Location;
- c. Date;
- d. Exercise detail;
- e. Successes/failures; and
- f. Lessons learned.

Spill reporting exercises shall be conducted on a periodic basis to assist with identifying deficiencies. Sites selected are at the discretion of Environmental Services.

**Note:** External reporting to spill lines and/or other contacts is not a component of the spill exercise, and all associated verbal or written communications must clearly announce: 'Exercise. Exercise. Exercise.'

## **7.6 SPILL RESPONSE TRAINING PROGRAM**

Spill response training is provided to all NWS LSS staff and Bulk Fuel Technicians. The training will include:

- a. Types and causes of spills on NWS sites;
- b. Spill reporting procedures;
- c. Spill kit familiarization;
- d. Spill response actions for a variety of scenarios;
- e. Post-spill site assessment;
- f. Post-spill review; and
- g. Health and safety.

The training methods will include:

- a. Lectures;
- b. Audio – visual presentations; and
- c. Field simulations exercises.

Training will be regenerative on a 2 year cycle.

## **8.0 FORMS AND QUALITY RECORDS**

- Environmental Initial Incident Report (see Appendix 3, below)
- Environmental Follow Up Incident Report (see Appendix 4, below)
- NT-NU Spill Report Form (see Appendix 6, below)

**UNCONTROLLED WHEN PRINTED**



## 9.0 ACRONYMS

Acronym	Definition
AANDC	Aboriginal Affairs and Northern Development Canada
AST	Above ground Storage Tank
CAD HQ	Canadian Air Division Head Quarters
CAR	Corrective Action Review
CCME	Canadian Council of Ministers of the Environment
CFB	Canadian Forces Base
CMO	Contractor Management Office
CSN	Canadian Switch Network
DND	Department of National Defence
EHS	Environment, Health, and Safety
EMT	Electronics Maintenance Technician
EPP	Environmental Protection Plan
ERT	Emergency Response Team
FMT	Facilities Maintenance Technician
FOL	Forward Operating Location
HAZMAT	Hazardous Materials
LHCN	Long-Haul Communication Network
LRR	Long Range Radar
LSS	Logistics Support Site
NWS	North Warning System
NWSCC	North Warning System Control Centre
NWSSC	North Warning System Support Centre
NWSO	North Warning System Office
NWSO TA	North Warning System Office Technical Authority
NT	Northwest Territories
NU	Nunavut
O&M	Operation and Maintenance
PCBs	Polychlorinated biphenyls
PGS	Power Generating System
PMI	Preventive Maintenance Inspection
RCA	Root Cause Analysis
RCL	Raytheon Canada Limited
SCADA	Supervisory Control and Data Acquisition
SDS	Safety Data Sheets
SOP	Standard Operating Procedure

UNCONTROLLED WHEN PRINTED



SOW REF: 16.F.3.b

Acronym	Definition
SOW	NWS O&M Contract Statement of Work
SRD	Short Range Radar Development Site
SRR	Short Range Radar
TDG	Transportation of Dangerous Goods
TSB	Technical Services Building
WHMIS	Workplace Hazardous Materials Information System

UNCONTROLLED WHEN PRINTED



## APPENDIX 1: RISK ANALYSIS OF SPILLS ON NWS SITES

Scenario	Impact	Probability	Mitigations
Catastrophic tank failure	<p>High</p> <ul style="list-style-type: none"><li>• Spill could result in a large amount of contaminated soil.</li><li>• Spill could contaminate water and result in Fisheries Act infractions.</li><li>• Spill could impact the prime mission of the NWS by loss of data and communications.</li></ul>	<p>Low</p> <ul style="list-style-type: none"><li>• One incident from 2004 to 2014.</li></ul>	<p>Tanks are visually inspected annually during Preventive Maintenance Inspections (PMIs) and before fuel is transferred into a tank, if the tank is visible (i.e. not covered by snow).</p> <p>The tanks are dipped to confirm the volume of fuel in the tanks (inventory reconciliation).</p>
Pipeline leak	<p>Medium</p> <ul style="list-style-type: none"><li>• Leak is difficult to detect during winter conditions.</li><li>• Spill could result in a moderate amount of contaminated soil.</li><li>• Spill could contaminate water and result in Fisheries Act infractions.</li><li>• Spill could impact the prime mission of the NWS by loss of data and communications.</li></ul>	<p>High</p> <ul style="list-style-type: none"><li>• 120 incidents from 2004 to 2014.</li></ul>	<p>Piping is visually inspected during PMIs and is monitored / inspected during fuel transfers.</p> <p>Non-destructive testing of the pipelines are completed at every site on a 5 year schedule in according with the Corrosion Analysis Protection (CAP) Program.</p> <p>Wherever practical, pipelines are drained when not in use.</p>
Spill from fuel truck while transferring fuel (i.e. connecting and disconnecting hoses, etc.)	<p>Low</p> <ul style="list-style-type: none"><li>• Spill could result in a moderate amount of contaminated soil.</li></ul>	<p>Low</p> <ul style="list-style-type: none"><li>• There are no incidents from 2004 to 2014.</li></ul>	<p>Portable secondary containment is used during fuel transfers.</p> <p>All fuel transfers from fuel trucks are monitored.</p>
Catastrophic fuel drum (205 L) failure (i.e. entire contents of drum spilled)	<p>Low</p> <ul style="list-style-type: none"><li>• Spill could result in a moderate amount of contaminated soil.</li><li>• Relatively low quantity of product in a drum.</li></ul>	<p>Low</p> <ul style="list-style-type: none"><li>• No incidents from 2004 to 2014.</li></ul>	Drums are stored as per the Hazardous Materials General Management Plan (PLN-EHS-3) or the Storage and Tracking of Waste HAZMAT Plan (PLN-EHS-4).

UNCONTROLLED WHEN PRINTED



Scenario	Impact	Probability	Mitigations
Spill of greater than 600 L	High <ul style="list-style-type: none"><li>• Spill could result in a large amount of contaminated soil.</li><li>• Spill could contaminate water and result in Fisheries Act infractions.</li><li>• Spill could impact the prime mission of the NWS by loss of data and communications.</li></ul>	Low <ul style="list-style-type: none"><li>• 10 incidents from 2004 to 2014.</li></ul>	Preventive maintenance is completed on tanks and piping.  Non-destructive testing of the pipelines are completed at every site on a 5 year schedule in according with the Corrosion Analysis Protection (CAP) Program.
Spill of 100 L to 600 L	Medium <ul style="list-style-type: none"><li>• Spill could result in a moderate amount of contaminated soil.</li><li>• Spill could contaminate water and result in Fisheries Act infractions.</li></ul>	Low <ul style="list-style-type: none"><li>• 15 incidents from 2004 to 2014.</li></ul>	Preventive maintenance is completed on tanks and piping.  Non-destructive testing of the pipelines are completed at every site on a 5 year schedule in according with the Corrosion Analysis Protection (CAP) Program.
Spill of 20 L to 100 L	Medium <ul style="list-style-type: none"><li>• Spill could result in a moderate amount of contaminated soil</li></ul>	Medium <ul style="list-style-type: none"><li>• 40 incidents from 2004 to 2014.</li></ul>	Drums are stored as per the Hazardous Materials General Management Plan (PLN-EHS-3) or the Storage and Tracking of Waste HAZMAT Plan (PLN-EHS-4).
Spills of less than 20 L	Low <ul style="list-style-type: none"><li>• Spill could result in a small amount of contaminated soil</li></ul>	High <ul style="list-style-type: none"><li>• 170 incidents from 2004 to 2014.</li></ul>	

**Notes:**

1. Spills from tanks at beach locations present a higher risk resulting in Fisheries Act infractions than tanks at summit locations.
2. Bulk fuel storage tank systems near roads are generally protected with bollards.
3. Definition of impacts:
  - a. High impact – Significant impact to land, water, and likely receptors;
  - b. Medium impact – Moderate impact to land, water, and likely receptors; and
  - c. Low impact – slight to no impact to land, water, and likely receptors.

UNCONTROLLED WHEN PRINTED



## APPENDIX 2: EMERGENCY CONTACTS LIST

### RCL Emergency Contact List

NWSCC Long Haul Communications Network (LHCN)	(705) 494-2011 ext. 3500
NWSCC Facilities Group	(705) 494-2011 ext. 3400
NWSCC Radar	(705) 494-2011 ext. 3104

Don Beattie, Environmental Services Officer	(613) 787-3646 (W)
Will Wyman, Environmental Specialist	(613) 787-3655 (W)
Phil Wilcox, Technical Services Manager	(613) 787-3653 (W)

James Straus, Operations Manager	(705) 494-2011 ext. 2864
Weldon Flynn, Manager, NWSSC	(705) 494-2011 ext. 2941
Dave Skeard, Fire Services Officer	(613) 787-3661 (W)
Lorna Green, Safety Officer	(613) 787-3645 (W)

### NWSO Emergency Contact List

Scott Charland, acting Environmental Officer (R&CS 3-5-C)	(819) 939-4973 (W)
Captain Graham MacMillan (R&CS 3-4-2)	(819) 939-5021 (W)
Major Ian Creighton (R&CS 3-4)	(819) 939-4963 (W)

### 24 Hour Spill Lines

Northwest Territories/Nunavut	(867) 920-8130
Yukon	(867) 667-7244
Newfoundland and Labrador (Coast Guard)	(709) 772-2083

### 1 Canadian Air Division Emergency Contact List

Location	Base	Contact	Contact number	CSN*
LSS-Inuvik	4 Wing Cold Lake, AB	Shona Lawson, Wing Env. Officer	(780) 840-8000 ext. 8430	690-8430
LSS-Iqaluit	3 Wing Bagotville, QC	Michel Lajoie, Wing Env. Officer	(418) 667-4000 ext. 4004	661-8711
LSS-Goose Bay	5 Wing Goose Bay, NL	Corey Cooney, Wing Env. Officer	(709) 896-6900 ext. 7770	555-7811
NWSSC, SRD, and NWSCC	22 Wing North Bay, ON	Shannon Roy, Wing Env. Officer	(705) 494-2011 ext. 2297	628-2297
NWSSC, SRD, and NWSCC	22 Wing North Bay, ON	Base Military Police	705-494-3333	N/A

\* Canadian Switch Network (i.e. from Sites: 88-78 + number)

UNCONTROLLED WHEN PRINTED



### Other Important Contacts

Inuvialuit Land Administration	(867) 977-7100
Inuvik Fire Department	(867) 777-2222
Iqaluit Fire Department	(867) 979-4422

### Parks Canada - Western Arctic Field Unit

Manager of Resource Conservation	(867) 777-8800
----------------------------------	----------------

### Government of Nunavut - Department of Environment

Manager of Pollution Control	(867) 975-7729
AANDC (formerly INAC) Nunavut Regional Office, Iqaluit	(867) 975-4500
AANDC (formerly INAC) Manager of Field Operations	(867) 975-4295

### AANDC (formerly INAC) Water Resources Officer/Inspector

Kitikmeot Region - Kugluktuk (CAM-M, CAM-3)	(867) 982-4308
---	----------------

### AANDC (formerly INAC) Water Resources Officer/Inspector

Qikiqtani Region - Iqaluit (FOX-M, FOX-3, DYE-M, BAF-3)	(867) 975-4289
---	----------------

North Bay Fire Department	(705) 474-5662
---------------------------	----------------

David Roberts, Transportations Programs Officer (North),	(867) 899-7340
--	----------------

### Dep't of Economic Development and Transportation, GNU

Email: droberts@gov.nu.ca

UNCONTROLLED WHEN PRINTED



## APPENDIX 3: EHS ENVIRONMENTAL INITIAL INCIDENT REPORT

### ENVIRONMENTAL INITIAL INCIDENT REPORT

**NOTE:**

- Submit to NWSO within 6 hours
- SOW Reference: 16.F.3.a
- NWS Environmental Incident Follow Up Report to be submitted to NWSO as required until incident is fully investigated: (FM-EHS-2 Follow-Up Incident Report)
- Send by e-mail as file attachment to: NWS Incident Reports – Environmental

REPORTING ZONE / LOCATION				
Inuvik <input type="checkbox"/>	Cambridge Bay <input type="checkbox"/>	Hall Beach <input type="checkbox"/>	Iqaluit <input type="checkbox"/>	Goose Bay <input type="checkbox"/>
SITE: <input type="checkbox"/>				

NWSSC <input type="checkbox"/>	NWSCC <input type="checkbox"/>	CMO <input type="checkbox"/>
--------------------------------	--------------------------------	------------------------------

REPORTED TO NWSCC BY				
NAME: <input type="checkbox"/>	PHONE #: <input type="checkbox"/>			
POSITION: <input type="checkbox"/>				
REPORT DATE (DD/MMM/YY): <input type="checkbox"/>	Report Date <input type="checkbox"/>	REPORT TIME (ZULU): <input type="checkbox"/>		

INCIDENT DETAILS				
DESCRIPTION OF INCIDENT: <input type="checkbox"/>				
DATE: <input type="checkbox"/>	Incident Date <input type="checkbox"/>	TIME (ZULU): <input type="checkbox"/>		
CAUSE, IF KNOWN: <input type="checkbox"/>				
LOCATION OF INCIDENT: <input type="checkbox"/>				
COORDINATES OF INCIDENT	N: <input type="checkbox"/>	<input type="checkbox"/>	W: <input type="checkbox"/>	<input type="checkbox"/>
REPORTED BY (SCADA/PERSON): <input type="checkbox"/>				
SUBSTANCE SPILLED: <input type="checkbox"/>				
ACTION TAKEN: <input type="checkbox"/>				
LEAK STATUS:	Contained <input type="checkbox"/>		Ongoing <input type="checkbox"/>	
MEDIA INVOLVED (IF KNOWN)	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Unk <input type="checkbox"/>	
OTHER PERTINENT INFORMATION <input type="checkbox"/>				
NWSCC TECH INITIALS <input type="checkbox"/>				
SM SECTION: <input type="checkbox"/>				
WORK ORDER NUMBER: <input type="checkbox"/>				

UNCONTROLLED WHEN PRINTED



## APPENDIX 4: EHS ENVIRONMENTAL FOLLOW UP INCIDENT REPORT

# FOLLOW UP ENVIRONMENTAL INCIDENT REPORT

**NOTE:**

- CMO Environmental Services (ES) to submit report to NWSO as required until the incident is fully investigated.
- Send by e-mail as file attachment to: NWS Incident Reports – Enviro-Spill

DATE AND TIME				
Date of Occurrence:	Occurrence Date [REDACTED] Zulu [REDACTED] Unknown, see Comments below		Date of Discovery: Time of Discovery:	Discovery Date [REDACTED] Zulu
Date Spill Stopped:	Spill Stopped Date [REDACTED] Zulu	Date Spill Cleaned: Time Spill Cleaned:		Spill Cleaned up Date [REDACTED] Zulu
SPILL INFORMATION				
Material Spilled	[REDACTED]			
Quantity Spilled:	[REDACTED]			
Quantity Recovered:	[REDACTED]			
Location of spill (site and location on site):	[REDACTED]			
Coordinates of Spill	[REDACTED]			
Cause of Spill:	[REDACTED]			
Status of Spill:	[REDACTED]			
Environmental Effects:	[REDACTED]			
Human Health Effects:	Personal Information Recorded on separate form: [REDACTED]			
Action Taken to Mitigate Environ/Human Health Effects:	[REDACTED]			
Weather Conditions:	Rain [REDACTED]		Wind [REDACTED]	Snow/Ice [REDACTED]
	Temperature:	[REDACTED] °C	Wind Speed:	[REDACTED] km/hr
	Wind Direction:	[REDACTED]	Direction of Drift:	[REDACTED]
Distance from Surface Water:	[REDACTED]	Distance from Property Boundary:		[REDACTED]
Work Order #:	[REDACTED]		Spill Closure Date:	[REDACTED]
Remediation Action Taken:	[REDACTED]			
Comments:	[REDACTED]			
ENVIRONMENTAL SERVICES				
Report Submitted to NWSO By:	[REDACTED]		Date:	Report date [REDACTED]
Notified Federal Government:	Date:	Date	Time:	[REDACTED] Zulu
Notified Provincial Government:	Date:	Date	Time:	[REDACTED] Zulu
Notification Comments (e.g. Spill Line Report #, Spill Line tel #, co-ordinates of person(s) contacted: name, tel. #, position, gov't dept, city): [REDACTED]				
QUALITY SYSTEMS				
Root Cause Analysis:	[REDACTED]			
Corrective Action Follow-up	[REDACTED]			

UNCONTROLLED WHEN PRINTED



## APPENDIX 5: REPORTING CRITERIA FOR SPILL LINES

### Federal or Aboriginal Land in Canada

Any spill of fuel or waste oil must be reported to Environment Canada through territorial or provincial spill lines. Spills of greater than 100 L require a written report to Environment Canada<sup>1</sup>.

### **Minimum reportable volumes for HAZMAT spills in Yukon <sup>2</sup>**

Item No.	TDGA Class	Description of Contaminant	Minimum Reportable Volume
1	1	Explosives	Any amount
2	2.1	Flammable gases	Any amount of gas from containers with a capacity greater than 100 L <sup>3</sup>
3	2.2	Non-flammable gases	Any amount of gas from containers with a capacity greater than 100 L <sup>3</sup>
4	2.3	Poisonous gases	Any amount
5	2.4	Corrosive gases	Any amount
6	3	Flammable liquid	200 L
7	4	Flammable solid	25 Kg
8	5.1	Oxidizing substances	50 L or 50 Kg
9	5.2	Organic peroxides	1 L or 1 Kg
10	6.1	Poisonous substances	5 L or 5 Kg
11	6.2	Infectious substances	Any amount
12	7	Radioactive	Any amount
13	8	Corrosive substances	5 L or 5 Kg
14	9.1	Miscellaneous products or substances	50 L or 50 Kg
15	9.2	Miscellaneous products or substances	1 L or 1 kg
16	9.3	Dangerous wastes	5 L or 5 Kg
17	None	Special wastes ( <i>Special Waste Regulations</i> )	As specified in Sect. 3(1)(b)
18	None	Pesticides ( <i>Environment Act</i> )	5 L or 5 Kg
19	None	Pesticides & fertilizers ( <i>Pesticide Regulations</i> )	Any amount
20	None	Ozone depleting substances and halocarbons	10 Kg

<sup>1</sup> From: *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, SOR/2008-197, Section 41, under the Canadian Environmental Protection Act, 1999.

<sup>2</sup> From: *Spills Regulations, Y.O.I.C. 1996/193, under the Environment Act*.

And *Ozone Depleting Substances and Other Halocarbons Regulation, Y.O.I.C. 2000/127, under the Environment Act*

<sup>3</sup> Or where the spill results from equipment failure, error or deliberate action or inaction

UNCONTROLLED WHEN PRINTED



**Minimum reportable volumes for HAZMAT spills in Nunavut / Northwest Territories<sup>4</sup>**

Item No.	TDGA Class	Description of Contaminant	Minimum Reportable Volume
1	1	Explosives	Any amount
2	2.1	Compressed gas (flammable)	Any amount of gas from containers with a capacity greater than 100 L
3	2.2	Compressed gas (non-corrosive, non-flammable)	Any amount of gas from containers with a capacity greater than 100 L
4	2.3	Compressed gas (toxic)	Any amount
5	2.4	Compressed gas (corrosive)	Any amount
6	3.1, 3.2, 3.3	Flammable liquid	100 L
7	4.1	Flammable solid	25 Kg
8	4.2	Spontaneously combustible solids	25 Kg
9	4.3	Water reactant solids	25 Kg
10	5.1	Oxidizing substances	50 L or 50 Kg
11	5.2	Organic peroxides	1 L or 1 Kg
12	6.1	Poisonous substances	5 L or 5 Kg
13	6.2	Infectious substances	Any amount
14	7	Radioactive	Any amount
15	8	Corrosive substances	5 L or 5 Kg
16	9.1 (in part)	Miscellaneous products or substances, excluding PCB mixtures	50 L or 50 Kg
17	9.2	Environmentally hazardous	1 L or 1 kg
18	9.3	Dangerous wastes	5 L or 5 Kg
19	9.1 (in part)	PCB mixtures of 5 or more parts per million	0.5 L or 0.5 Kg
20	none	Other contaminants	100 L or 100 Kg

**Nunavut Water Board (NWB) Sites:**

For the sites with NWB licences (CAM-M, CAM-3, FOX-M, FOX-3, DYE-M, and BAF-3), any unauthorized discharge or any foreseeable unauthorized discharge must be reported to the

NT-NU Spill Line, the AANDC Manager of Field Operations, and the AANDC Water Resources Officer/Inspector.

A summary of the spills at NWB Sites will be included in the annual report for each site.

<sup>4</sup> From: *Spill Contingency Planning and Reporting Regulations*, N.W.T. Reg. 068-93, under the Environmental Protection Act.

**Minimum reportable volumes for Newfoundland & Labrador<sup>5</sup>**

Oil	70 L
Flammable liquids	70 L
Halocarbons	10 Kg

<sup>5</sup> From: *Storage and Handling of Gasoline and Associated Products Regulations*, 2003, NL Reg 58/03. And *Halocarbon Regulations*, NL Reg 41/05, under the Newfoundland Environmental Protection Act.

**UNCONTROLLED WHEN PRINTED**



UNCLASSIFIED

SOW REF: 16.F.3.b

## APPENDIX 6: NT-NU SPILL REPORT FORM AND GUIDE



Canada

### 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	<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> 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 <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> 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
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION
REPORT LINE USE ONLY				
N	RECEIVED AT SPILL LINE BY STATION OPERATOR	POSITION	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT REPORT LINE NUMBER (867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN	FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY				
FIRST SUPPORT AGENCY				
SECOND SUPPORT AGENCY				
THIRD SUPPORT AGENCY				

PAGE 1 OF \_\_\_\_\_

UNCONTROLLED WHEN PRINTED



### Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and faxed to the spill line at 867-873-6924. Commencing April 1, 2007, the form can also be e-mailed as an attachment to [spills@gov.nt.ca](mailto:spills@gov.nt.ca). Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call. Spills can still be phoned in by calling collect at 867-920-8130.

<b>A. Report Date/Time</b>	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. <b>Please do not fill in the Report Number:</b> the spill line will assign a number after the spill is reported.
<b>B. Occurrence Date/Time</b>	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).
<b>C. Land Use Permit Number /Water Licence Number</b>	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.
<b>D. Geographic Place Name</b>	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. <b>You must include the geographic coordinates</b> (Refer to Section E).
<b>E. Geographic Coordinates</b>	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.
<b>F. Responsible Party Or Vessel Name</b>	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. <b>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.</b>
<b>G. Contractor involved?</b>	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.
<b>H. Product Spilled</b>	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)
<b>I. Spill Source</b>	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 <sup>2</sup> )
<b>J. Factors Affecting Spill</b>	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 equipment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
<b>K. Additional Information</b>	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. <b>Please number the pages to ensure that recipients can be certain that they received all pertinent documents.</b> If only the spill report form was filled out, number the form as "Page 1 of 1".
<b>L. Reported to Spill Line by</b>	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.
<b>M. Alternate Contact</b>	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
<b>N. Report Line Use Only</b>	<b>Leave Blank.</b> This box is for the Spill Line's use only.

UNCONTROLLED WHEN PRINTED