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1003-1 (J9)

8 December 2015

MV2015X0019

Distribution List

ARCTIC OPERATION ADVISOR COURSE 2016 NOTIFICATION LETTER

The purpose of this letter is to provide notification that the Department of National Defence proposes to conduct its annual Arctic Operations Advisor (AOA) Course in the vicinity of Yellowknife, NT in February 2016.

The Course will be conducted in two phases, a sub-Arctic phase in areas surrounding the City of Yellowknife, NT and a high Arctic phase in the vicinity of Resolute Bay, NU. The purpose of the sub-Arctic phase is to prepare candidates for operating under the high Arctic conditions they will face in the region of Resolute Bay in March 2016.

The objective of the AOA Course is to produce a maximum of 45 new Canadian Army specialists per year capable of advising their Commander with regard to the organization, coordination, supervision and planning of deployment and training in the Arctic and cold weather conditions.

The Department of National Defence will ensure that the activities proposed in the Course will continue to respect legal requirements in regards to environmental, territorial and federal legislation.

The enclosure to this letter provides the necessary background information about the 2016 iteration of the AOA Course. The activities that will be conducted for the 2016 course are similar in scope with those conducted in 2014 and 2015 respectively.

We would ask that you distribute this notice as deemed appropriate. Should you have any questions or concerns, or require any additional information, please contact Major Conrad Schubert at Joint Task Force North Headquarters at 867-873-0700, local 6078 and/or email at [conrad.schubert@forces.gc.ca](mailto:conrad.schubert@forces.gc.ca)

Sincerely,

Mike Nixon  
Brigadier-General  
Commander Joint Task Force (North)

Enclosure: Detailed AOA Project Description

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## Detailed Project Description

### Arctic Operations Advisor Course

#### 1. Outline of Project Activities.

The Canadian Army conducts its annual Arctic Operations Advisor (AOA) course in February and March in various locations across the Arctic Region. This course is conducted in two stages. In February, the first stage is a sub-Arctic introductory program based around the YELLOWKNIFE, NT area where students are introduced to Joint Task Force (North) Headquarters (JTFN HQ), 440 Sqn, ASU (N) and 1 Canadian Ranger Patrol Group (1CRPG). They conduct mobility and field living skills in cold weather conditions and conclude with an introductory package of Survival skills. In late February and concluding in mid-March, the high-Arctic portion is initially based in and around the new Canadian Armed Forces Arctic Training Centre (CAFATC), in RESOLUTE BAY, NU. After some local training in RESOLUTE, students disperse in smaller groups to various Nunavut communities to conduct a Final Exercise partnered with a Ranger Patrol to learn skills directly from those experts, mostly further mobility and field living skills. A community visit program is also planned and all this relies on co-ordination with the Ranger Sergeant in each community to assist the students in understanding local conditions. The aim of the course is to train up to 45 students capable of advising their Commanders in the planning and conduct of Operations in the Arctic Region. In addition, there will be 10 Instructors with the students at various periods and 15 Support Staff, who will not deploy onto the land.

#### 2. Schedule of Activities.

This course runs annually from February to March, with some variation in the dates due to aircraft and accommodations availability.

#### 3. Preliminary Plan.

During the sub-Arctic stage in YELLOWKNIFE, students are based with the **1<sup>st</sup> Canadian Ranger Patrol Group HQ** and use local pre-marked trails and pre-planned bivouac locations. In the RESOLUTE area, students learn to pull a Qamutiik around the local community and conduct survival training within an area of approximately 50km of the village and CAFATC. The final decision as to which community the students will deploy to will be made in consultation with the Rangers and weather conditions. However, it is planned to choose five communities from the following list:

- a. Cambridge Bay ( 69° 07' 21''N, 105° 03' 11''W)
- b. Gjoa Haven (68° 37' 33''N, 95° 52' 30''W)
- c. Taloyoak (69° 32' 13''N, 93° 31' 36''W)
- d. Kugaaruk, (68° 31' 59''N, 89° 49' 36''W)
- e. Repulse Bay (66° 31' 19''N, 86° 14' 06''W)
- f. Arctic Bay (73° 02' 11''N 85° 09' 09''W)
- g. Pond Inlet (72° 41' 57''N, 77° 57' 33''W)

- h. Grise Fjord (76° 25' 03''N, 82° 53' 38''W)
- i. Igloodik (69° 22' 34''N, 81° 47' 58''W) and
- j. Hall Beach ( 68°45'44''N 081°13'44''W)

The final choices of community will be based on recommendations from the Rangers as to their availability and capacity to support the training. It is also intended that different communities will be used in different years to increase opportunity, but this is not always possible. Under normal circumstances, the students and Rangers will remain within a 150km radius of each community and always under guidance from the local Rangers. Given the novice skills of the students, the nature of the training and the potential weather conditions, it is impossible to identify exact bivouac sites in advance. The establishment of a bivouac campsite will be based on the weather, terrain conditions, type of training and advice from the Rangers who are instructing the students. These campsites will consist of a maximum of three tents and a maximum of 15 persons per night with normally four nights spent in various locations. Each bivouac location will be photographed and the location recorded by GPS and a detailed report will be written to summarize these activities.

Students will conduct training in the following skills:

- a. Conduct basic arctic operations;
- b. Care and maintain small arms weapons and ammunition in arctic conditions;
- c. Operate the snowmobiles in arctic conditions and tow loads over ice;
- d. Practice preventive maintenance, expedient repairs and recovery of the Snowmobile/qamutik in arctic conditions;
- e. Prepare and tow loads over snow using the qamutik;
- f. Use and maintain ice-boring equipment;
- g. Employ CAF communications equipment in arctic conditions;
- h. Practice hygiene and sanitation in arctic operations;
- i. Practice First Aid;
- j. Conduct simulated casualty evacuation;
- k. Practice navigation using GPS;
- l. Conduct administration;
- m. Practice austere airstrips and conduct air resupply;
- n. Familiarity with the operations and capabilities of Canadian Rangers;
- o. Conduct liaison with government and non-government agencies; and
- p. Familiarity with the conditions and characteristics particular to the Canadian Arctic and conduct community relations activities.

#### 4. List of Structures to be erected.

The only structures to be erected will be the tents for the students and Rangers. A maximum of three tents will be erected in each bivouac location. It is possible to remain at the campsite for a second night, but it is unlikely.

5. Equipment to be Used.

The only equipment to be used is normal military survival equipment, including 10-man cold weather tents group, snowmobiles and qamutiiks, ice augers and radios.

6. Fuels to be Used and Container Capacities.

Normal gasoline will be used in the snowmobiles and they will refuel from the Military-issued fuel containers or civilian fuel cans and at all times, drip trays and appropriate spill absorbent material will be used. Gasoline will be transported in military or civilian 20L containers. Snowmobile oil will be in standard 1L or 4L containers and naphtha will be in 3.75L tins or 20 litre plastic containers. Standard CF fuel spill kits will be carried by each manoeuvre element.

7. Fuel Spill Contingency Plans.

A Spill Response Plan suited for the AOA has been designed in line with the Joint Task Force North (JTFN) Spill Response Standard Operating Procedures. Copies of both documents are attached to this description.

8. Garbage Disposal.

Garbage, human waste and all contaminated water (including grey water) will be collected for return to the CAF ATC and/or CFB Trenton, ON at the end of the training. Nothing will be released onto the land and no waste disposal of any kind will be permitted outside of a community. All site locations will be returned to their previous condition prior to departure.

9. Methods of Transportation.

All transportation will be by snowmobile, except for deployment which will be by aircraft.

10. Environmental Components.

Students will traverse a wide area around the various communities. They will at all times avoid any unplanned interaction with wildlife, unless under guidance of the Rangers, who will teach about Country Foods, if the opportunity presents itself. All members will/may participate in fishing training and will have the correct licences to do so. The only communities they will interact with are the host community where they will start and finish their training. Students are forbidden from visiting historical or archaeological sites, unless under the guidance of a Ranger and their Instructor. When students plan their route with the Rangers, they will be instructed to ask advice on sensitive sites and will avoid them.

11. Potential Impacts.

There will be no interaction with flora and fauna, unless under the controlled circumstances covered in Para 9 above. If flora is located through the ice or snow, students will be instructed to set their tent elsewhere. Given the very small size and short duration of the activities, and the requirement to take all garbage and waste the effects will be negligible

12. Reclamation Cost for Advanced Exploration.

No advanced exploration activities will be occurring.

13. Reclamation Plan

All crown property, personal equipment, rations, waste, water that is brought to the Exercise will be removed. There is no plan to move soil or rock or interfere with the natural grade of the land. Flora as per para 10.

14. Inuit Socio-economic Benefits

The Rangers will be on duty as CAF members during the training and will receive Equipment Usage Rate payment for their equipment in addition to their pay. Students will be permitted to purchase items from local stores and Co-Op and from local artisans and other vendors.

Attachments:

1. JTFN Hazmat Spill Response Plan
2. Spill Response Plan- Arctic Operations Advisor (AOA) Course



**JTFNO 4000-7**

## **HAZMAT RELEASE PLAN**

### **Identification**

1.1 Date of Issue	14 May 2014
1.2 Application	This is an order that applies to members of the Canadian Armed Forces (CAF) and a directive that applies to employees of the Department of National Defence (DND) employed within the Joint Task Force North (JTFN) Formation.
1.3 Supersession	JTFN Standing Order 12-8 Aug 08
1.4 Approval Authority	This order is issued under the authority of the Comd JTFN
1.5 Office of Primary Interest (OPI)	JEngr
1.6 Purpose	The purpose of this order is to amplify the references in order to ensure compliance across JTFN Area of Responsibility (AOR) on response to Hazardous Material (HAZMAT) release.
1.7 Contents	<ul style="list-style-type: none"><li>• Definitions</li><li>• General</li><li>• Release Response</li><li>• Reportable Release</li><li>• Reporting Procedures</li><li>• References</li><li>• Annexes</li></ul>
1.8 Date of Last Review	14 May 2014

### **Definitions**

2.1 JTFN AOR	JTFN AOR includes the three Northern Territories: Yukon, Northwest Territories and Nunavut as well as the confines of the Hudson Bay.
2.2 HAZMAT	In accordance with DAOD 4003 -0 Environmental Protection and Stewardship, HAZMAT is any material that, if handled



	<p>improperly, can endanger human health and well-being, the environment or equipment. Common examples of HAZMAT include poisons, corrosive agents, flammable substances, ammunition and explosives.</p> <p>In accordance with Canadian Environmental Protection Act (CEPA), release is the intentional or unintentional abandonment, deposit, discharge, dump, emission, empty, exhaust, throw, inject, leak, pour, place, release, seep, spill or spray of material into the environment. This includes the jettisoning of fuel by aircraft.</p>
2.3 Minor Spill	A Minor Spill is one having a little or no actual or anticipated hazard or adverse impact on person, property, or the environment. Minor spills are short duration and are quickly cleaned up by the party responsible for the spill. They involve contaminants of relatively low toxicity, and the extent of the spill is limited.
2.4 Major Spill	A Major Spill is one having, or is anticipated to have, substantial adverse impact or hazard to persons, property, or the environment. These spills may range from a small quantity of a very toxic or hazardous material to a large quantity of a less toxic substance. Containment is often difficult and there may be a potential for future spillage. This category of spill incident also includes those which have a severe local impact or which have the potential for a serious public concern.
2.5 Oil and Lubricants	For the purpose of this JTFNO, Petroleum Oil and Lubricants (POL), are considered HAZMAT. This includes all forms of vehicle and aircraft related fuels, fluids and lubricants, including glycol.

## General

3.1 Exclusions	The JTFNO does not cover spill response and release reporting for incidents involving Chemical, Biological, Radiological and Nuclear (CBRN) substances, halocarbons (halon and refrigerant gases) or polychlorinated biphenyls (PCBs) ( lamp ballasts and capacitors)
3.2 Obligations	DND is obligated, under federal legislation and departmental policy, to prevent pollution and conduct environmentally sustainable operations. On a daily basis, JTFN utilizes a

	<p>variety of HAZMAT in numerous applications. All DND and CAF personnel shall be aware of the risks associated with handling HAZMAT and ensure that appropriate procedures and protective devices are in place to guard against negative impacts resulting from accidents. Despite planning considerations, best practices and the existence of precautionary measures, spills happen.</p>
3.3 Spill Occurrence	<p>When spills occur, actions to contain the spill and commence cleanup, must be swift and effective.</p> <p>This JTFNO outlines spill response and reporting procedures to be followed in the event of a spill occurring on or off DND property within the JTFN AOR. Examples include:</p> <ul style="list-style-type: none"> <li>• The accidental release of HAZMAT or unknown substance into a storm drain or sanitary sewer system;</li> <li>• Accidental releases within a DND building or hanger or on runways, taxiways, roads or other hard surfaced area; and</li> <li>• Releases from a vessel or container, including releases from civilian and military pattern vehicles, tanker trucks, POL tanks and POL system infrastructure; both on land and water bodies including ponds, marsh areas and streams.</li> </ul>
3.4 Spill Notification	<p>Upon discovery or notification of a spill, the following action should take place:</p> <ul style="list-style-type: none"> <li>• Determine the hazards or potential hazards associated with that particular spill;</li> <li>• Determine the approximate size of the spill. Note the time and any other information that might be helpful when reporting the incident, and determine if it falls under a minor or major spill classification.</li> </ul>

### Spill Response

4.1 Overview	<p>Under Canadian Law, personnel must be adequately trained with respect to the hazards and response requirements of any product which they are required to handle. Therefore, they must fully understand their limitations in dealing with</p>
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	<p>HAZMAT releases before being involved in any response. No one shall attempt to cleanup products which pose a significant health and safety risk, without the assistance of trained HAZMAT responder.</p>
<p>4.2 Dealing with a Spill</p>	<p>Where personnel are sufficiently equipped and capable of dealing with HAZMAT releases, they shall effectively take action, ensuring the use of appropriate personal protective equipment (PPE) and follow all applicable safety procedures. Other resources are available in response to incidents beyond the capability of the Unit or where a significant health and safety risk exists.</p>
<p>4.3 Initial Response</p>	<p>The following procedures apply for the initial response to a HAZMAT release, regardless of size or the agency carrying out the task.</p> <ul style="list-style-type: none"> <li>• Sound the alarm (If Possible) and call for assistance (if required);</li> <li>• Isolate the affected area, keeping personnel outside the affected area;</li> <li>• If safe to do so, determine what the product is and how to respond safely. An Emergency Response Guidebook is available in most spill kits and is the best resource for assisting with this step;</li> <li>• If possible, remove any injured personnel and treat. In a safe zone administer First Aid and evacuate personnel if necessary;</li> <li>• Stop or reduce future release;</li> <li>• Contain the product to prevent any escape into drains, soil or water bodies;</li> <li>• Cover, neutralize and/or dam up the material in preparation for clean up and eventual removal, using products such as absorbents or other appropriate items which are available in spill kits positioned through out JTFN facilities and DND vehicles;</li> <li>• Identify Reportable Releases (see section 5) and Reporting Procedure (see section 6);</li> </ul>

	<ul style="list-style-type: none"> <li>• Collect the spilled product and any contaminated material in suitable containers. Examples of suitable containers include plastic pails and double thickness poly bags. Ensure that all containers are clearly identified.</li> <li>• Note: ASU (N) CE shall be contacted prior to digging on DND Land at 867-873-0700 ext 6909. Northland Utilities must be contacted at 867-873-4865 prior to digging on Yellowknife Municipal land. The City of Yellowknife, Public Works must be contracted at 867-920-5600 before digging on Yellowknife Municipal land and if the release may be affected municipal drains or sewage. For any others area within JTFN AOR ASU(N) CE will provide appropriate guidance.</li> </ul>
4.4 Waste Disposal	<p>To make arrangements for disposal of HAZMAT waste, contact the Environmental Coordinator (Env Coord) at 867-873-0700 ext 6923 or 867-444-0279. Once contacted, the Env Coord will provide instruction related to proper storage of waste on-site until arrangement for pickup and disposal can be made. A standing offer is in place and valid for JTFN AOR with KBL Environmental LTD in Yellowknife. KBL environmental LTD can be contacted at 867-873-5263 for assistance with disposal. NOTE: the standing offer does not cover the collection of contaminated soil and equipment. HAZMAT or POL products shall not be disposed of as domestic waste or into storm or sanitary sewers.</p>
4.5 Waste Transport	<p>Transport collected HAZMAT substances to appropriate disposal point within the Yellowknife area. The disposal point is City of Yellowknife Solid Waste Facility. All transport of HAZMAT material must be done in accordance with the carrier of dangerous goods road regulations. As per territorial Law a movement document has to be completed, a waste generator number has to be provided and a waste carrier number is required. Contact the Env Coord for all details. NOTE: HAZMAT transportation by aircraft is not covered by this JTFNO.</p>
4.6 Cleanup	<p>Following initial spill response, cleanup or site remediation, the Env Coord will conduct an inspection to determine the effectiveness of cleanup activities.</p> <p>Backfill all excavation with clean material. Before backfilling, approval must be received from the Env Coord as soil</p>

	<p>sampling, laboratory results or outside agencies approval might be required prior to backfill.</p> <p>Repair the container or vessel which caused the release.</p> <p>Take appropriate measures to prevent the future release.</p> <p>During the entire process the Env Coord will provide guidance to the responsible Unit.</p>
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### Reportable Release

5.1 Overview	In conjunction with the Spill Response procedures, reports must be completed in accordance with Federal Law, Territorial regulations, and DND directives.
5.2 Reportable Spills	<p>Reportable Spills include any spill in which assistance is required in dealing with a spill as well as the following:</p> <ul style="list-style-type: none"> <li>• Any release experienced, observed or discovered, which has endangered human or animal life;</li> <li>• Any release experienced, observed or discovered, which has entered a water body, sewer or drain, regardless of size;</li> <li>• Any release involving DND personnel or owned assets occurring off DND property;</li> <li>• Any release greater than 5 litres in volume; and</li> <li>• Any release involving acid or a Canadian Environmental Protection Act (CEPA) deleterious substance such as mercury, solvents or gasoline</li> </ul> <p>When in doubt as to whether or not the spill should be considered a reportable spill, contact the Env Coord.</p>

### Reporting Procedures

6.1 Initial Action	When a reportable spill occurs this procedure shall be carried out as soon as possible by someone able to collect all details effectively. JTFN HQ shall be contacted within 12 hours.
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6.2 Contacts	<p>During working hours contact JTFN Operations Centre (JOC) at 867-873-0700 ext 6772. After working hours contact JTFN Duty Officer (DO) at 867-765-8607. The JTFN JOC or DO will complete the Action List included as Annex A.</p> <p>If a health and safety risk exists, the ground commander shall contact the Yellowknife Fire Department at 867-873-2222 for emergency response, access control and evacuation. In emergency cases contacting 867-873-2222 shall be done prior to contacting JTFN HQ.</p> <p>The JTFN JOC or DO will contact the Env Coord at 867-873-0700 ext 6923 or at BB 867-444-0279 with information required in Annex B.</p> <p>The Env Coord will work with CFB/ASU Edmonton, 17 Wing, 3 Wing or any other DND land owners in order to complete the Unit specific spill report and inform external agencies such as Environment Canada and territorial regulator by calling the Nunavut/Northwest Territories Spill Line at 867-920-8130, if deemed necessary.</p> <p>ASU (N) CE will contact the civilian contractor to execute site remediation of any major spills. For smaller spill ASU (N) may provide the equipment and personnel to assist with site remediation;</p>
6.3 Environmental Reporting	<p>The responsible Unit must complete and submit the Environmental Incident Report (EIR), contained at Annex B, to the Env Coord and JTFN JOC within 24 hours of a Reportable Release. Additional details are to be submitted as information becomes available. The Env Coord will liaise at all times with the JTFN JOC and Chain of Command to maintain Situational Awareness and the JTFN JOC or DO will make the decision as to whether or not a Significant Incident Report (SIR) is required.</p>

## References

7.1 Source References	<p>DAOD 4003-1 Hazardous Material Management</p> <p>Environmental Directive ED 4003 Spill Reporting, 1 January 2003</p> <p>DAOD 4003-0 Environmental Protection and Stewardship</p>
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	Hazardous Materials Safety and Management Manual A-GG-040-004/AG-001, 13 Feb 03
7.2 Related References	<p>Canadian Environmental Protection Act, 1999 and Regulations</p> <p>DAOD 2008-3 Issues and Crisis Management Plan</p> <p>ASU Edmonton Hazardous Material Management Plan, 1 January 2007</p>

**Annexes**

8.1 ANNEX A	Action List for JTFN JOC/DO
8.2 ANNEX B	HAZMAT Release Incident Report

Annex A  
 To JTFNO 4000-7  
 21 February 2014

**Action List for JTFN JOC/DO**

Action	Note	Time
Name of Individual / Incident Commander		
Telephone NO		
Type of Substance <i>(substance spilled / quantity / i.e. 300 gal of diesel fuel)</i>		
Time of Spill		
Spill Containment Action		
Water spill (location, lat/long)		
Land spill <i>(Include distance from drains / Aquatic Env / Type of Surface / Etc)</i>		
Weather (Precipitation / Tide / Etc)		
Cause of spill		
Action taken <i>(Spill Report / Emergency Response / Etc)</i>		
Additional Significant info (Media interest / Casualities / Etc)		



Action	Note	Time
Transfer to emergency response 867-873-2222 ( <i>if not already re[ported &amp; if required]</i> )		
Inform contact list below		
Contact List		
JTFN JOC or DO		
Env Coord		
JEng		
J3		
MP		
Public Affairs		
COS		

**Instruction:**

1. The action List gives guidelines for members that require notifying a HAZMAT release to JTFN JOC or DO in order to gather relevant information
2. JTFN JOC shall complete the Action List upon notification of HAZMAT release notification. Information included is needed by the env Coord in order to report the spills to regular agencies.
3. The contact List is also a guideline intended for JTFN JOC to notify the right members depending on the situation.

Annex B  
To JTFNO 4000-7  
21 February 2014

**HAZMAT RELEASE INCIDENT REPORT**

**A. REPORT ORIGINATOR**

Name	Rank	Position	Unit	Section	Phone

**B. INCIDENT DETAILS**

Date	Time (Local)	Location	Material	Quantity	A/C # or Equipment Involved

**Describe Action(s) in progress when Incident Occurred:**

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**C. ACTIONS TAKEN**

**C1. Notification:**


**C2. Containment**


**C3. Cleanup and/or Neutralization:**


<b>C4. Recovered Amount:</b>
<b>C5. Unrecovered Amount:</b>
<b>C6. Disposal:</b>

**D. DISTANCE FROM POINT OF RELEASE TO NEAREST:**

<b>Water Well</b>	<b>DND Property Boundary</b>
<b>Catch Basin</b>	<b>Surface Water</b>

**E. PERSONNEL INVOLVED**

<b>Name</b>	<b>Rank</b>	<b>Unit</b>	<b>Section</b>	<b>Phone</b>

**F. PERSONNEL INJURED**

<b>Name</b>	<b>Rank</b>	<b>Unit</b>	<b>Section</b>	<b>Phone</b>

**G. EQUIPMENT DAMAGED INCLUDE ALL EQUIPMENT USE FOR  
REMEDICATION**


**Spill Response Plan – Arctic Operations Advisor Course :**

1 January 2010

20 September 2012 (1<sup>st</sup> Revision)

17 September 2015 (2<sup>nd</sup> Revision)

Originally Created by: Mr. Justin Thomas, Environmental Advisor, Director Land Environment

Originally Reviewed by: Sgt. William Payne, Environmental Coordinator, JTF (N)

Revised by: Mr. Ovie Ekewenu, CADTC Environmental Advisor

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## **1) Introduction**

The Canadian Army has prepared this spill contingency plan for the completion of the Arctic Operations Advisor Course (AOA) which takes place annually in the vicinities of Yellowknife, NT and Resolute Bay, NU. While conducting the AOA, support for spills will be provided by Joint Task Force (North) (JTF(N)).

### **i) Contact Information**

Joint Task Force (North)  
PO Box 6666, Station Main  
Yellowknife, NT  
X1A 2R3  
Phone: (867) 873-0700 extension 6880  
Fax: (867) 766-6803  
Attention: Captain Frank Dion, JTF(N)

Canadian Forces Land Advanced Warfare Centre  
PO Box 1000, Station Forces  
Astra ON  
K0K 3W0  
Phone: 613-392-2811 ext.2444  
Attention: Capt. Wayne Leblanc, Course Commander, AOA

### **ii) Effective Date of Spill Contingency Plan**

January 1, 2010

### **iii) Last Revision to Spill Contingency Plan**

September 17, 2015

### **iv) Distribution List**

The most recent version of this plan has been distributed to:

Capt. Frank Dion, Environmental Officer, JTF(N)

Capt. Wayne Leblanc, Course Commander, AOA

### **v) Purpose and Scope**

The purpose of this plan is to outline response actions for potential spills that could take place during the AOA which will take place annually in the vicinity of Yellowknife, NT and Resolute Bay, NU. The plan identifies key response personnel and their roles and responsibilities in the event of a spill, as well as the resources available for spill responding. It details spill response procedures that will minimize potential hazards to the environment and to human health and safety while also detailing procedures which will facilitate spill containment and recovery. The plan is prepared to ensure quick access to all the information required for spill responding.

### **vi) Company Environmental Policy**

In order to produce a combat effective, sustainable Land Force, the Army requires a healthy and diverse environment to conduct training and support activities today and into the future. Army activities can potentially impact all major Canadian ecosystems; therefore, it is essential to support sustainable management practices. To ensure the sustainable environmental management of our, garrisons, firing ranges, training areas, assets and activities the Army is committed to:

- Complying with Federal legislation and conforming to municipal, provincial/territorial and international standards, as applicable;
- Respecting Federal environmental directives and policies including the Department of National Defence and Canadian Forces Code of Environmental Stewardship;
- Taking environmental factors into account in all decision making;
- Preventing pollution from Army activities and encouraging best practices;
- Establishing Army environmental priorities and objectives through the business planning process; and
- Continually improving our environmental management.

Army Commanders at all levels shall ensure that the requirements outlined in this policy are implemented and communicated throughout their organization. The active involvement of all organizations and personnel supporting the Army mission will help ensure that we meet our environmental management goals.

Prior to the commencement of the AOA course, this plan will be communicated to all course personnel.

#### **vii) Project Description**

The AOA course is conducted annually in the months of February and March. The course consists of two phases: A sub-arctic phase which is proposed to occur in the vicinity of Yellowknife, NT and a high-arctic phase which is proposed to occur in the vicinity of Resolute Bay, NU. The purpose of the AOA is to annually train approximately 35 Army Specialists capable of providing advice to their Commanders regarding arctic deployments and training under cold weather conditions.

#### **viii) Site Locations**

Exact site locations for the AOA will change annually. However, each year resources will be drawn from facilities within and surrounding the City of Yellowknife, NT and the Community of Resolute Bay, NU for the sub-arctic and high-arctic portions of the course respectively. For the 2010 iteration of the course field training will take place at the following sites:

##### Sub-Arctic Phase:

Initial Training Area (western edge followed by eastern edge):

- N62° 28' 04.2'' W114° 29' 46.6''
- N62° 28' 15.3'' W114° 28' 07.3''

Bivouac Site:

- N62° 21' 50.7'' W114° 29' 59.6''



Contingency Bivouac Site:

- N62° 21' 39.4'' W114° 32' 29.5''

Yellowknife Rifle Range:

- N62° 28' 02.2'' W114° 28' 28.0''

Bluefish Hydroelectric Station:

- N62° 40' 19.5'' W114° 15' 43.8''

High-Arctic Phase:

Resolute Bay:

- N74° 43' 01'', W 94° 58' 10''

Cambridge Bay:

- N69° 07' 02'', W105° 03' 11''

Gjoa Haven:

- N68° 37' 33'', W 95° 52' 30''

Taloyoak:

- N69° 32' 13'', W93° 31' 36''

Kugaaruk:

- N68° 31' 59'' , W89° 49' 36''

Polar Continental Shelf Project (PCSP):

- N74° 43' 07.1'', W94° 59' 23.9''

Repulse Bay:

- N66° 31' 19'', W86° 14' 06''

Arctic Bay:

- N73° 02' 11'', W85° 09' 09''

Pond Inlet:

- N72° 41' 57'', W77° 57' 33''

Grise Fjord:

- N76° 25' 03'', W 82° 53' 38''

Igloolik

- N69° 22' 34'', W81° 47' 58''

Clyde River:

- N70° 28' 26'', W68° 35' 10''

**ix) List of Hazardous Materials On-site**

No permanent storing of hazardous materials will occur during the AOA. Diesel and gasoline for the respective operation of BV-206s and skidoos will be obtained from the City of Yellowknife or

the Community of Resolute Bay and transported into the field daily or as required. In addition to the vehicle tank capacity, all vehicles will carry 1 emergency jerry can of fuel (20 L). With the exception of emergency situations, vehicle refuelling in the field will be done within a bermed POL point located in the vicinity of the bivouac site at a distance greater than 30 m from all water bodies. Ten (10) 1-Litre Bottles of Naphtha will be used per day in each of 4 10-person Army tents. As with vehicle fuel, Naphtha bottles will be transported into the field daily or as required, with empty bottles being redeployed following resupply. Bermed POL points will be established adjacent to individual tents for the storage of camp stove fuel.

**Table 1: List of hazardous material stored on-site, type of storage container, the maximum storage quantities, storage locations and uses<sup>1</sup>.**

Material	Storage Container	Maximum Amount On-site	Storage Location and Uses
Gasoline	20 L vehicle tank 20 L jerry cans	2160 L (54 vehicle tanks + 54 jerry cans)	Jerry Cans secured in/on trail boggans/komaticks or within bivouac POL point. Used to fuel skidoos.
Diesel	120 L vehicle tank 20 L jerry cans	280 L (2 Vehicle Tanks + 2 jerry cans)	Jerry Cans secured in/on trail boggans/komaticks or within bivouac POL point. Used to fuel BV-206.
Naphtha	1 L bottles	40 L (40 bottles)	Individual tent POL points. Used to fuel camp stoves.

#### x) Existing Preventative Measures

Given the remote nature of the AOA site locations spill prevention is extremely important. The following preventative measures are in place to prevent spills during the course.

- Course participants will be briefed on the spill response plan prior to the commencement of field training;
- A light oversnow vehicle course (skidoo) will precede the field training portion of the course to ensure that all CF personnel can safely operate and maintain their vehicles;
- Drivers of the BV206s will receive appropriate operator training prior to the course;
- The fleet of vehicles used during the course will be maintained in good condition by JTF(N) personnel and/or course staff;
- Fuel will be secured during transport;
- Spill kits will be contained within the BV206s and at the section level (i.e. one spill kit per every 12 skidoos);
- Fuel transfers will take place over drip trays and/or appropriate spill absorbent material;
- Refuelling will be conducted within POL points established at least 30 m away from any water bodies.
- POL points will be bermed.
- Course participants will conduct daily inspections to check for vehicle leaks and/or damage to fuel storage containers.

#### xi) Additional Copies

<sup>1</sup> MSDS sheets are available in all spill kits.

A copy of this spill response plan will be kept with the course commander and with each spill kit. A copy will also be held by the JTF(N) Environmental Officer.

## 2) Potential Causes and Consequences of HAZMAT Spills During the AOA

### i) Spill Definitions

#### Major Spills

Major spills are immediately reportable releases that:

- Involve the release of a substance that is likely to be imminently hazardous to human health and safety or to the environment;
- Involve a quantity of material that meets or exceeds the amounts found in appendix A; or
- Involve the release of fuel or hazardous material, **of any quantity**, if the spill occurs adjacent to or within a water body or other sensitive environment.

#### Minor Spills

Minor spills are those that:

- Do not involve the release of a substance that is likely to be imminently hazardous to human health and safety or to the environment;
- Involve a quantity of material that falls below the amounts found in appendix A; or
- Do not involve the release of fuel or hazardous material adjacent to or within a water body.

The primary hazardous materials used in the AOA (Gasoline, Diesel Fuel, Naphtha) are all POL products.

In accordance with Environmental Directive 4003 – 1/2003 for POL product spills in non-sensitive environments:

- A **major spill** involves a spill **greater than 50 L**
- A **minor spill** involves a spill of **between 1 L and 50 L** where all released product is not recovered.

**Table 2: List of Hazardous Materials, Potential Spill Events and Potential Spill Volumes**

<b>Hazardous Material</b>	<b>Potential Spill Event</b>	<b>Likely Spill Volume</b>	<b>Worst Case Spill Volume</b>
Gasoline (skidoo)	1) Leak in gas tank 2) Improperly secured lid on jerry can 3) Damaged jerry can 4) Spill during fuel transfer 5) Vehicle turnover	Likely under 20 L (volume of both the vehicle tank and the jerry can).	2160 L (max volume of gasoline in the field at 1 time = 54 vehicle tanks + 54 jerry cans)
Diesel Fuel (BV206)	1) Leak in gas tank 2) Improperly secured lid on jerry can 3) Damaged jerry can 4) Spill during fuel transfer 5) Vehicle turnover	Likely under 120 L (volume of vehicle tank)	280 L (max volume of diesel in the field at 1 time = 2 vehicle tanks + 2 jerry cans)
Naphtha (Camp Stove)	1) Punctured container 2) Spill during fuel transfer	Likely under 1 L (volume of naphtha container)	40 L (max volume of naphtha in the field at 1 time = 40 1 L bottles)

**ii) Potential Environmental Impacts**

The environmental impacts of the hazardous materials used during the AOA are mitigated to a degree by the time period within which the course takes place annually. Given that snow is a natural sorbent and ice forms a barrier which can limit or eliminate soil and water contamination spills that occur during the AOA are more likely to be readily recovered than spills that would occur at other times of the year.

Gasoline:

Gasoline has the potential to adversely impact upon the health of humans as well as terrestrial and aquatic wildlife. Gasoline is not readily biodegradable and thus has the potential to bioaccumulate in the environment. Gasoline is a highly volatile material which can make complete recovery difficult. Special care should be taken in the event of a spill to ensure that gasoline does not enter any open water bodies.

Diesel Fuel:

Diesel has the potential to adversely impact upon the health of humans as well as terrestrial and aquatic wildlife. Diesel is not readily biodegradable and thus has the potential to bioaccumulate in the environment. Diesel is much less volatile than gasoline and thus diesel spills are more readily recovered than gasoline spills. Special care should be taken in the event of a spill to ensure that diesel fuel does not enter any open water bodies.

Naphtha:

Naphtha has the potential to adversely impact upon the health of humans as well as terrestrial and aquatic wildlife. Terrestrial wildlife can be especially sensitive to naphtha as they may ingest it during pelage cleaning. Naphtha is readily biodegradable; however, biodegradation will be slowed under the winter conditions of the sub-arctic and high-arctic environments. Special care should be taken in the event of a naphtha spill to ensure that the product does not enter any open water bodies.

### 3) Spill Procedures

This section outlines the steps that will be taken by AOA personnel in the event of a spill. A flowchart outlining the spill response procedure is found in appendix B.

#### i) Initial Actions

- A. Ensure safety of all personnel.
- B. Determine the hazards and potential hazards of the spill.
- C. Remove any possible ignition sources
- D. Assess the spill. Take note of any information that will be useful in reporting the incident (material spilled, volume spilled, location of spill, time of the spill, etc.)
- E. Notify the Course Commander regardless of the spill volume.
- F. **In the case of a minor spill:**
  - 1. If safe to do so stop the spill at its source. Ensure that appropriate protective equipment is utilized as required.
  - 2. Contain the spill to prevent further environmental contamination.
  - 3. Contact the JTF(N) Operations Duty Officer at *Tel.* 867-873-0700 6772 (CSN 766-6772) *Cell.*(867-765-8607)
  - 4. Inform the JTF(N) Environmental Officer (867-873-0700-6880), *Cell.* (867-445-4062) or JEngr (867-873-0700-6017) or the JTF(N) Environmental Coordinator (867-873-0700-6083)
- G. **In the case of a major spill:**
  - 1. If safely possible limit the amount of contaminate at the source.
  - 2. Contact the JTF(N) Operations Duty Officer at *Tel.* (867-873-0700 6772) (CSN 766-6772), *Cell.*(867-765-8607).
  - 3. If safe to do so, limit the spread of the spill with priority being given to preventing spread into open water bodies.
  - 4. The JTF(N) Operations Duty Officer will contact the JTF(N) Environmental Officer and/or the JTF(N) HAZMAT Emergency Response Team Leader who will determine and mobilize the resource required to further contain the spill.

## ii) Spill Reporting

- A. All spills, **regardless of their size**, that take place as a result of the Arctic Operations Advisor Course will be reported to the Course Commander as soon as it is safely possible to do so.
- B. As required by JTF(N), the course participant who causes or discovers a spill must complete the JTF(N) spill report form (appendix C). The completed form must be submitted to the JTF(N) Environmental Officer or the JTF(N) Environmental Coordinator within 24 h of the spill occurring.<sup>2</sup>
- C. In accordance with Environmental Directive 4003 – 1/2003 within 24 h of a spill the JTF(N) Environmental Officer will report the spill up the chain-of-command to NDHQ/DGE. **All spills resulting from the AOA which occur on lands which are not under the administrative control of DND will be reported to NDHQ/DGE.**
- D. In accordance with Territorial regulations the JTF(N) Environmental Officer will report any major spills that occur during the Arctic Operations Advisor Course on the **NT-NU 24 hr spill report line (867-920-8130)**. The JTF(N) Environmental Officer will also be responsible for completing the associated spill reporting form.
- E. All spill kits used during the AOA will contain extra copies of the JTF(N) spill response form.

## iii) Spill Reporting Contacts

- A. **JTF(N) Operations Duty Officer**  
Phone: 867-765-8607
- B. **JTF(N) Environmental Officer**  
Phone: (867-873-0700-6880)  
  
Or  
  
JEngr  
Phone: (867-873-0700-6017)
- C. **JTF(N) Environmental Coordinator**  
Phone: 867-873-0700-6083
- D. **NT-NU 24 h Spill Line**  
Phone : 867-920-8130  
Fax : 867-873-6924  
Email : [spills@gov.nt.ca](mailto:spills@gov.nt.ca)

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<sup>2</sup> Given the nature of the AOA and the potential for a spill to occur in a remote location, the information required in the JTF(N) Spill Report may be provided to the JTF(N) Environmental Officer through other means of communication.

#### iv) Procedure for Containing and Controlling a Spill

- A. Assess the environment and determine what will or has the potential to be impacted upon by the spill.
- B. Assess the movement of the spill and cause of the movement (wind, slope, etc.)
- C. Determine where and how to contain the spill. Ensure that open water bodies are avoided.
- D. Consider alternative containment strategies ahead of time in case initial efforts prove unsuccessful or conditions change.

#### v) Containment Techniques for Spills Occurring on Snow and Ice

Given the time period and locations within which spills are likely to occur during the AOA this section provides guidance into specific methods that can be used for containing spills that occur on snow and ice. Note that the guidance provided in this section is not intended to be all encompassing and does not supersede any recommendations of the JTF(N) Environmental Officer or the JTF(N) Environmental Coordinator.

##### A. Spills on snow:

Recovery of spills on snow is facilitated by the fact that snow is a natural sorbent. Generally speaking, small spills on snow can be completely recovered by using shovels to collect and transfer contaminated snow into appropriate plastic bags.

##### Dykes:

For larger spills occurring on snow, snow can be compacted and mounded down slope from the spill to form a dyke. This method can be augmented by placing a plastic tarp over the dyke in a manner that causes the spill to pool at the base of the barrier. Once the spill is contained, contaminated snow can be shovelled into appropriate plastic bags or collected using appropriate absorbent materials.

##### B. Spills on ice:

Spills occurring on ice are amongst the easiest to contain as ice is largely impermeable to POL. However, all appropriate measures should be taken to ensure that spills do not enter ice covered water bodies as spills that seep under ice are amongst the most difficult to contain and recover. In general small spills on ice can be recovered using sorbent materials with shovels being used to scrape together and transfer any remaining contaminated ice and slush into appropriate plastic bags.

##### Dykes:

For larger spills occurring on ice, surrounding snow can be compacted down slope of the spill and mounded to form a dyke to contain the spill. This method can be augmented by placing a plastic tarp over the dyke in a manner that causes the spill to pool at the base of the barrier. Once the spill is contained, contaminated snow can be shovelled into appropriate plastic bags or collected using appropriate absorbent materials.

### Trenches:

For more significant spills trenches can be cut into the ice surrounding and/or down slope of the spill to allow for the spill to pool into the trench. Pooled product can subsequently be collected with absorbent materials or mixed with snow and shovelled into appropriate plastic bags. Personnel should contact the JTF(N) Environmental Officer or the JTF(N) Environmental Coordinator prior to trenching as this technique may increase the probability of a spill seeping under the ice.

### Burning:

Burning of POL spills on ice is to only be conducted as a last resort and may not occur without the permission of the JTF(N) Environmental Officer or the JTF(N) Environmental Coordinator as burning can not be conducted without the approval of Indian and Northern Affairs Canada.

#### **vi) HAZMAT Disposal**

Plastic bags containing contaminated snow, ice, slush and or spill absorbent materials will be transported and disposed of as directed by the JTF(N) Environmental Officer or the JTF(N) Environmental Coordinator. Contaminated materials will not be disposed of at municipal sites without receiving prior authorization from the facility.

#### **vii) Restoration of Affected Areas**

As required and once all hazardous materials have been removed, the JTF(N) Environmental Officer will be responsible for coordinating with appropriate territorial and federal authorities to determine the level of site reclamation required.

### **4) Resource Inventory**

#### **i) On-site resources**

Four (4) large emergency spill kits will be kept (2 at the bivouac site and 2 with the supply). Each kit contains:

- a spill instruction sheet;
- one 36"x 36" neoprene drain cover;
- one epoxy stick;
- one roll of duct tape; and
- two absorbent packs – stock number CN-ESK-01 (which contain: 5-17"x19" laminated polypropylene absorbent pads; 1-4L bag multizorb universal absorbent; 1-10' polypropylene sock for oil only; 1-4' polypropylene sock for oil only; 2 disposal sacks and crossties; 2 adhesive caution labels; and 1 pair of nitrile gloves).

Smaller emergency spill kits will be kept at the section level (i.e. one kit per 9 course candidates, 1 instructor and 2 Canadian Rangers).

#### **ii) Off-site resources**



As required off-site resources will be mobilized by the JTF(N) Environmental Officer and/or the JTF(N) HAZMAT Emergency Response Team Leader.

#### **5) Training Program**

Participants of the AOA will be briefed prior to the commencement of field training on the spill response plan and will be made aware of the location and contents of spill kits. JTF(N) personnel providing HAZMAT spill response support to the AOA receive spill response training as required for their positions.

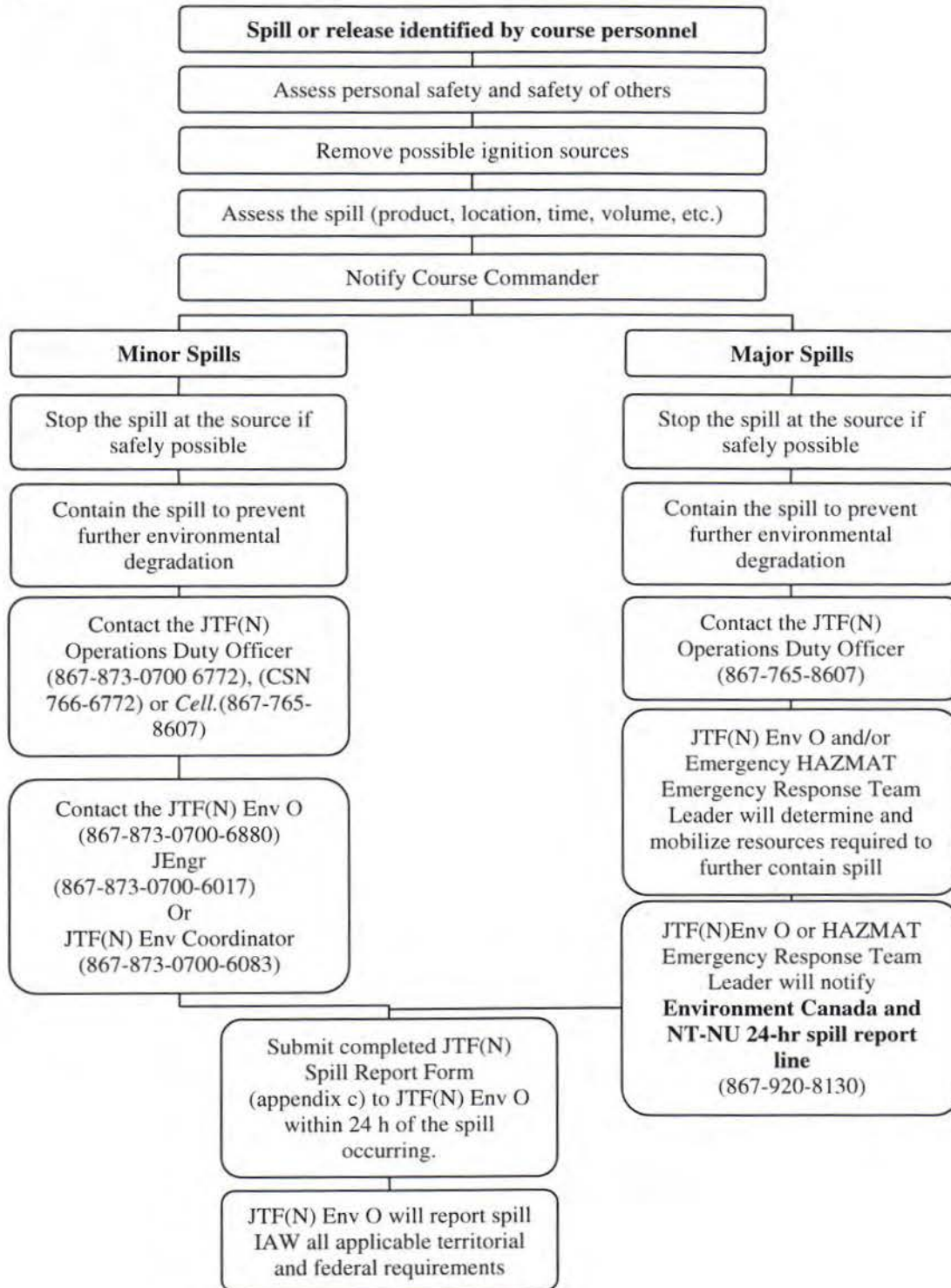
## Appendix A: Immediately Reportable Release Quantities

TDG Class	Substance	Immediately Reportable Quantity
1 2.3 2.4 6.2 7 None	Explosive Compressed gas (toxic) Compressed gas (corrosive) Infectious substances Radioactive Unknown Substance	Any amount
2.1 2.2	Compressed gas (flammable) Compressed gas (non-corrosive, non-flammable)	Any amount of gas from a container with a capacity greater than 100 L
3.1 3.2 3.3	Flammable liquids	> 100 L
4.1 4.2 4.3	Flammable solids Spontaneously combustible solids Water reactant	> 35 kg
5.1 9.1	Oxidizing substances Miscellaneous products or substance excluding PCB mixtures	> 50 L or 50 kg
5.2 9.2	Organic peroxides Environmentally hazardous	> 1 L or 1 kg
6.1 8 9.3	Poisonous substances Corrosive substances Dangerous wastes	> 5 L or 5 kg
9.1	PCB mixtures of 5 or more ppm	> 0.5 L or 0.5 kg
None	Other contaminants (e.g. crude oil, drilling fluid, produced water, waste or spent chemical, used or waste oil, vehicle fluids, waste water, etc.)	> 100 L or 100 kg
None	Sour natural gas Sweet natural gas	Uncontrolled release or sustained flow of 10 minutes or more

In addition a HAZMAT release of any amount must be immediately reported if it:

- Poses an imminent threat to human health and safety;
- Poses an imminent threat to listed species at risk or its critical habitats;
- Occurs within or adjacent to a water body;
- Occurs within or adjacent to a designated sensitive environment;
- Occurs within or adjacent to a designated wildlife habitat.

**Appendix B: Spill Response Flow Chart**



**Appendix C: JTF(N) HAZMAT Spill Report Form**

JTFN Spill Report		
<u>Reported by:</u>	<u>Local:</u>	<u>Section:</u>
d. <u>Date of spill:</u>	<u>Time of spill:</u>	<u>Date reported:</u>
2. <u>Source of Spill:</u>		
3. <u>Spill location (Bldg #, Address, FOL, Float Dock, GPS coordinates, etc):</u>		
4. <u>Type of Material Spilled:</u>		
5. <u>Quantity spilled (kg or litre):</u>	6. <u>Quantity recovered (kg or litre):</u>	
7. <u>Events leading up to Spill:</u>		
8. <u>Action taken to mitigate the effects of the spill:</u>		
9. <u>Further important information:</u>		
10. Distance from the point of release to the following (in metres):		
e. <u>Ditch:</u>	b. <u>Catch basin or drain :</u>	
c. <u>Property boundary :</u>	d. <u>Surface water :</u>	
<u>Environment File #:</u>		
<u>Off-base agencies contacted (name, phone #, time, date):</u>		

## Appendix D: References

- A) Canadian Army Environmental Policy, 2013
- B) JTFNO Hazmat Release Plan 2014
- C) AANDC Guidelines for Spill Contingency Planning, April 2007.
- D) Environmental Protection Act, Consolidation of Spill Contingency Planning and Reporting regulations, R.R.N.W.T. 1990, c.
- E) Material Safety Data Sheet, Unleaded Gasoline, Petro-Canada, 2008
- F) Material Safety Data Sheet, Diesel Fuel, Petro-Canada, 2007
- G) Material Safety Data Sheet, Coleman Camp Fuel, HOC Industries Inc., 2007