

Defence Construction Canada

**Spill Contingency Plan
FOX-2, Longstaff Bluff DEW Line Site
1BR-LON0813**

Prepared by:

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Revision Log

Revision #	Revised By	Date	Issue / Revision Description
1	EMS	Dec. 29, 2008	Draft
2	EMS	March 3, 2009	Final Draft
3	EMS	March 20, 2009	Final

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1. Introduction

1.1 Management of the Site

The site is owned by the Department of National Defence (DND), as represented by Defence Construction Canada (DCC). The contract for the clean up of the site was awarded to Quantum Murray LP (QMLP). A contact list is provided in Table 1.

Table 1 – Contact List

Organization	Address	Name	Number
Defence Construction Canada	Constitution Square, Suite 1720 350 Albert Street Ottawa, ON K1A 0K3	Douglas Craig, Environmental Officer	613-998-7288
		Steve Poaps, Associate Project Manager	613-998-9529
		Patricia O'Donnell, Contract Coordinator	TBD
Quantum Murray LP	4400 Dominion Street, Suite 400 Burnaby, BC V5G 4G3	Vijay Lanji, Project Manager	TBD
		Ron Bosel, Site Superintendent	TBD

Note: the camp has not yet been established at the site – phone numbers will be provided once the camp has been set up and communications are established.

1.1.1 Roles and Responsibilities

The contractor and all sub-contractors will be involved in spill response actions in the event of a spill during the construction activities at FOX-2. Their roles and responsibilities are described as follows:

- Ensure the response crew members are appropriately trained.
- Practise spill prevention by performing regular maintenance on all fuel systems and by using proper methods for handling of fuel products.
- Provide personnel, materials, and equipment necessary for adequate response to fuel and hazardous material spills.
- Establish communications and verbally report all spills to the DCC Contract Coordinator as soon as practical.
- Isolate and eliminate all ignition sources.
- Ensure safety and security at the spill site.
- Stop or reduce discharge, if it is safe to do so.
- Make every effort to contain the spill by dyking with earth or other barriers on land and containment booms on water.
- Assess potential for fuel/chemical recovery.
- Deploy on-site crews to mobilize pumps, empty 200 litre barrels, hand tools and absorbents to the spill site.
- Hire additional assistance, if required, from northern residents, local communities, and commercial spill response firms.

- If required, request assistance from the DND (through the DCC Contract Coordinator) and the Canadian Coast Guard.
- Follow all guidelines and regulations for disposal of spilled materials, associated debris, contaminated soil and water as established by appropriate government agencies.
- Assess potential terrain and wildlife disturbance, erosion and archaeological site disturbance in any areas to be affected by clean up operations and contact relevant authorities.
- Document all events/actions.
- Report the spill to the Spill Report Line and follow up with a written spill report. This report shall summarize the initial report information; confirmation of spill volume; actions taken; future remediation/monitoring requirements; and a sketch map and/or photographs of the spill area.
- For spills on water, immediately mobilize additional containment and clean up equipment in consultation with Environment Canada, and Fisheries and Oceans Canada if on-site equipment is inadequate. Close isolation valves to stop fuel flow, if required. Deploy light-weight booms and oil absorbent materials to protect environmental resources along the coastline, as applicable. Track the progress of the spill, if of unknown origin.

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

1.2 Description of the Facility

1.2.1 Fuel Storage Facility

It is estimated that the camp operation will require a combined total of approximately 350,000 litres of diesel and 20,000 litres of gasoline. Fuel will be stored in double-walled tanks in a location situated a minimum of 100 metres from any water body or drainage course. Fuel is supplied by the contractor.

1.2.2 Sewage Lagoon

The sewage lagoon has not yet been constructed, therefore the required capacity is not yet been defined.

Note: A site plan of the camp, including the locations of the sewage lagoon and fuel storage facility can be provided once the contractor sets up the camp.

2. Spill Response Procedures

2.1 Reporting Procedures

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

- Date and time of the spill;
- Location of the spill and direction the spill may be moving;
- Name and phone number of a contact person close to the location of the spill;
- Type of contaminant spilled and quantity spilled;
- Cause of the spill;
- Whether the spill is continuing or has stopped;
- Description of the existing containment;
- Action taken to contain, recover, clean up and dispose of spilled material;
- Name, address and phone number of the person reporting the spill; and
- Name of owner or person in charge, management or control of the contaminants at the time of the spill.

In addition to providing a spill report to the Spill Report Line, a copy of the report is to be submitted to the INAC Water Resources Officer no later than 30 days after initially reporting the spill to the spill report line. A copy of the NU Spill Report Form is attached. The contact list is provided in Section 1.1

2.2 Clean Up Action Plan

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

The individual discovering a spill shall:

- Warn the people in the immediate vicinity and evacuate if necessary.
- Isolate or remove any ignition sources.
- Identify the spilled material, if possible, and take all safety precautions before approaching it.
- Locate the source of the spill.
- Attempt to stop the leakage and contain the spill, if safe to do so.
- Assess the likely size, extent and condition of the spill.
- Report to the DCC Contract Coordinator the spill location, type of material, volume and extent, status of spill (direction of movement), and prevailing meteorological conditions.
- In the event of a shoreline spill, provide information about the beach location, contaminated area, beach characteristics, presence of wildlife and archaeological sites that may be threatened.

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

- Assess the severity of the spill via direct observation and/or information from communications.
- Deploy equipment and personnel to initiate containment and clean up.
- Prepare the Spill Report Form.
- Notify all other pertinent parties, including the DND and other government agencies.

2.2.1 General Procedures

The environmental protection measures outlined in the following section are to be taken by all workers on site to reduce the chance of environmental impairment due to a spill, release or other incident. The following general clean up procedures shall apply for all spill areas:

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

2.2.2 Procedures for Fuel Storage Areas

In order to prevent spills or accidents at fuel storage areas, the following procedures apply:

- Avoid sites that slope towards waterways or other environmentally sensitive areas, exhibit ponding or flooding, have high groundwater tables, and/or excessive seepage or ice-rich (thaw sensitive) soils.
- Avoid archaeological resources.
- Conduct fuelling and equipment lubrication in a manner that avoids spillage of fuels, oils, greases and coolants. When refuelling equipment, operators are to use leak-free containers, reinforced rip and puncture proof hoses and nozzles, and drip trays. Operators are to be in attendance for the duration of the refuelling operation and are to ensure that all storage container outlets are properly sealed after use.

- Store fuel in self-dyking containers, or position over an impervious liner and surround by an impervious dyke of sufficient height to contain not less than 110% of the capacity of the tank(s).
- Smoking is prohibited within 7.5 metres of the fuel storage facility. Provide appropriate signage.
- Inspect fuel storage facilities at least once each week for the duration of the project. Fire-fighting equipment will be made available for immediate access at each and every fuel storage facility.
- Store all barrels containing fuel and/or other hazardous materials in an elevated position either on their side with the bungs facing the 9 and 3 o'clock position or on pallets, upright, banded and encased in overpack containers.
- All barrels shall be individually identified. The label is to be to industry standards and should provide all information necessary for health and safety, and environmental purposes. Material Safety Data Sheets for all materials maintained in the construction camp will be available for all personnel.
- Treat all waste petroleum products, including used oil filters, as hazardous material and handle and dispose as per the requirements specified in the appropriate regulations.
- Conduct regular inspections of all machinery hydraulic, fuel and cooling systems. Repair leaks immediately.
- Pre-assemble and maintain emergency spill response equipment including at least two fuel pumps, empty 200 litre barrels and absorbent material sufficient to clean up a 1000 litre spill at all permanent fuel storage sites.
- Remove all barrels, redundant fuel storage sites and associated materials and equipment from the site at the conclusion of the work.

2.2.3 Procedures for Hazardous Material Storage Areas

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

- Hazardous waste materials may be encountered during sorting of site and demolition debris and during the excavation of landfills. Collect and sort hazardous materials using equipment suitable for the task.
- Locate the hazardous material processing area a minimum of 100 metres from the nearest archaeological site or water body, on ice poor, well drained soil, and as close to the location of work as possible.
- Control movement of vehicles and equipment between the hazardous materials processing area and work site to prevent the spread of potentially hazardous material along roadways.
- Store hazardous materials so that each storage area is separated from the nearest water body by a 30 metre buffer zone.
- The TDGA and the International Air Transport Association (IATA) Dangerous Goods Regulations govern the packaging and shipment of hazardous goods within Canada. If shipping out of Canada, Canadian regulations and the regulations of the destination country both apply. Requirements of the IMDGC must be addressed in international waters.
- Any material classified as hazardous by the TDGA must be accompanied by the appropriate TDGA shipping documents. The documents are to state the shipper, the receiver and all carriers involved in

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

- Package all hazardous material in accordance with the TDGA regulations.

2.3 Disposal

All soil impacted by fuel spills will be treated within the landfarm on-site. Details of the landfarm operations were provided in the 2007 Project Description. Any soils impacted by hazardous material will need to be packaged and transported off-site for disposal at a licensed facility. The packaging and shipping requirements for hazardous materials were provided in the 2007 Project Description. Soils impacted by sewage effluent do not require disposal and will be left in place.

3. Site Map

The camp site plan will be provided by the contractor once the camp has been set up.

4. Spill Response Training

To be provided by the contractor.

5. Equipment Inventory

Table 2 provides the list of equipment (or similar) that will be available on-site, while Table 3 provides the emergency spill response kit contents.

Table 2 – Equipment List

Quantity	Description
3	CAT 325 (or similar) guarded excavators with ripper shanks and hydraulic thumbs and hydraulic shear
4	Volvo 25 ton articulating rock trucks
2	CAT D6 dozer with rippers and winch
1	CAT 966 loader with forks
2	66" Ingersoll compactors
1	Powerscreen Warrior screen plant
1	Bobcat 760 skid-steer with forks and bucket
7	4x4 crew cab pick-up trucks
1	crew van
1	4x4 mechanics service truck
1	fuel truck, certified
7	400 cc ATVs
2	water tank trailers
1	sewage truck
1	winch truck with low-bed trailer
1	Beck down-hole hammer system
1	portable generator
1	250 CFM compressor
1	haz-mat site trailer

Table 3 - Spill Response Kit

Quantity	Description
200	Polypropylene absorbent pads 18"x18"x3/8" (oil only)
25 m	Polypropylene absorbent booms 5 " diameter
2	Polypropylene absorbent socks 3 " diameter x 4' (oil only)
1	Treated oil only cellulose particulate
1	Neoprene drain cover 48' x 48" x 1/8"
6	Polypropylene disposal bags (45 gallon drum size, minimum 6 mm)
1000'	Barrier tape, yellow "Caution Do Not Enter"
2 pair	Nitrile gloves large
2 pair	Nitrile gloves extra large
100'	Polypropylene rope, yellow 1/4"
30	Empty sand bags 14" x 22"
1	Roll poly. Plastic sheet 100' x 6' x 6 mm thickness
1	Roll duct tape 180' x 2"

1 roll	"kimwipes" hand towelettes
1	Kit container marked "Spill Response Kit"

Spill kits will be inspected by the Health and Safety Coordinator after each use and the contents replenished as necessary.

Appendix A

Contractor Emergency Response Plan

18.0 EMERGENCY RESPONSE PLAN

18.1 Emergency Definition:

An emergency is any situation with the potential to affect the life, health or safety of any person, property or the environment.

18.2 Key Components of Emergency Response Plan:

Hazard Identification – to be prepared for all possible situations

Emergency Resources – identify various roles and designate persons and agencies

Communication System – identify and install a reliable system for location / site

Emergency Response Procedure – develop procedures for specific location / site

Communication of the Plan – educate workers of the plan during orientation and updates

Practical Exercises – to ensure all people assigned are able to complete roles

Debriefing and Post Incident Procedures – recovery systems / resources once the emergency response is completed

18.3 Emergency Response Coordination:

- The Emergency Coordination Centre will be the Quantum Murray LP site office.
- The onsite Emergency Response Coordinator will be the Site Health & Safety Coordinator.
- The offsite Emergency Response Coordinator will be Phil Lindner (604-833-9117).
- Quantum Murray LP will contact all relevant emergency response agencies prior to project commencement.
- Quantum Murray LP will coordinate all emergency response.
- If outside emergency response personnel are required (Ambulance, Police, Fire etc.), Quantum Murray LP will relinquish response coordination once outside response personnel are onsite and will then assist further emergency response.
- Onsite subcontractors must provide equipment and assistance if requested to do so by the emergency response personnel.

18.4 Emergency Response Transportation:

Emergency transport from site will be by fixed wing aircraft or helicopter, as appropriate.

18.5 Emergency Response Contact List

PROJECT	FOX-2, Longstaff Bluff, Nunavut	
SITE LOCATION		
NEAREST MEDICAL SERVICES		
NEAREST HOSPITAL	Main Switchboard Emergency Unit	
AIR MEDIVAC	Arctic Sunwest Adlair Aviation Air Tindi First Air Great Slave Helicopters Canadian Helicopters	(876) 873-4464 (867) 873-5161 (867) 669-8200 (867) 669-6618 (867) 873-2081 (867) 669-0779
POLICE –		
WCB – 24 Hour Accident Report Line	Yellowknife Iqaluit	1-800-661-0792 1-800-404-4407
NWT 24 Hour Spill Report Line	(867) 9208130	
Yellowknife Wildlife Emergency Line	(867) 873-7181	
DCC - Project Manager		
QMLP - Project Manager		

QMLP - Site Superintendent	
QMLP - Emergency Response Coordinator	Phil Linder (604-833-9117)
QMLP Environmental Occupational Health & Safety Mgr. BG Region	Dan Sinclair (604) 837-2267

18.6 Emergency Response Procedures

- STOP work and sound alarm (one long blow on the emergency siren).
- All work must stop immediately.
- Provide immediate and appropriate FIRST RESPONSE if you able to and ONLY if it is safe to do so (e.g. administer first aid to worker, extinguish fire, stop product flow, etc.).
- Call police, ambulance, fire fighters, hospital, etc., as per Contact List.
- All workers must assemble at the designated muster station (unless they are involved in FIRST RESPONSE activities).
- Workers assembled at the designated muster station must complete a head count to ensure every worker onsite is accounted for and evacuated safely. Workers must not leave the muster station until a head count has been completed and they have been instructed to do so.
- Cordon off the incident area
- Eliminate or mitigate hazards at the incident area
- Initiate and coordinate emergency response
- Contact appropriate emergency response personnel, authorities, and project management
- Complete incident investigation report as soon as possible
- Forward incident report to appropriate authorities and project management
- Implement appropriate investigation findings and review findings with workers

The following persons shall assist Quantum Murray LP when an emergency has been declared:

Name	Company

In the event of a serious emergency (sounding of the emergency siren), the above personnel shall ensure that workers are accounted for and assembled at the muster station.

18.7 Emergency Response Review:

The Site Superintendent will conduct a review of the circumstances and emergency response at the conclusion of an emergency situation.

18.8 Emergency Response Recovery:

The recovery process, or what happens after the emergency activity has been completed, is frequently given very little thought.

Many of the emergency tasks may be handled by people who are not accustomed to handling emergencies. People may have seen their work partners and friends very badly injured and suffering great pain.

The memories of the accident and the condition of the injured may have a very detrimental and lasting effect on the people involved in the accident and on the emergency crew.

Once the emergency is over, the attitude should not be “Okay, let’s get back to work” or “Let’s go home.” Some of the people involved may need professional assistance in order to get their mind back on what they are doing. The Health and Safety Coordinator will interact with and observe site personnel and if there are indications of shock or other signs of concern, professional assistance will be sought.

All site personnel will be required to acknowledge that they have read and understand the Emergency Plan and are familiar with its provisions, as per the example below.

Please sign and return to Health & Safety Coordinator (HSC). Refer to QHS # 34.

Name (print clearly)	Company (print clearly)	Date	First Aid Training Yes / No
<i>EXAMPLE</i> <i>ONLY</i> <i>Refer to QHS # 34</i>			

19.0 SPILL CONTINGENCY PLAN:

If a fuel, oil or other harmful substance spill occurs during the project, the following procedures will be implemented:

- Ensure safety
- Stop the flow
- Secure the area
- Contain the spill
- Notify / Report
- Clean-up

19.1 Ensure Safety

- Ensure Personal/Public, Electrical and Environmental Safety.
- Wear appropriate Personal Protective Equipment (PPE).
- Never rush in, always determine the product spilled before taking action.
- Warn people in the immediate vicinity.
- Ensure no ignition sources if spill is a flammable material.

19.2 Stop the Flow

- Act quickly to reduce the risk of environmental impacts.
- Close valves, shut off pumps or plug holes/leaks.
- Stop the flow or the spill at its source.

19.3 Secure the Area

- Limit access to the spill area.
- Prevent unauthorized entry onto the Site.

19.4 Contain the Spill

- Block off and protect drains and culverts and water bodies.
- Prevent spilled material from entering drainage structures (ditches, culverts, drains) or local water bodies.
- Use spill absorbent material to contain the spill.
- If necessary, use a dyke or any other method to prevent any discharge on site.
- Make every effort to minimize contamination.

19.5 Notify / Report

- Notify NWT 24 Hour Spill Report Line (867) 920-8130
- Notify project management
- Complete and submit NWT Spill Report form
- Complete and submit QMLP Incident Investigation form

The Spill Contingency Plan will be incorporated into the Worker Orientation Seminars prior to the project.

Spill hazards will be identified and spill response procedures will be reinforced at the daily tailgate meetings.

Emergency Spill Response Kit Contents:

Quantity	Description
200	Polypropylene Absorbent Pads 18"X18"X3/8" (Oil only)
25 m	Polypropylene Absorbent Booms 5" diameter.
2	Polypropylene Absorbent Socks 3" diameter. X 4ft. (Oil only)
1	Treated Oil Only Cellulose Particulate
1	Neoprene Drain Cover 48' X 48" X1/8"
6	Poly. Disposal Bags (45 Gal. Drum size, minimum 6 mil)
1000'	Barrier Tape, Yellow "Caution Do Not Enter"
2 pair	Nitrile Gloves Large
2 pair	Nitrile Gloves Extra Large
100'	Polypropylene Rope, Yellow1/4
30	Empty Sand Bags 14" X 22"
1	Roll Poly. Plastic Sheet 100' X 6' X 6 mil Thickness
1	Roll Duct Tape 180' X 2"
1 roll	"Kimwipes" Hand Towelettes
1	Kit Container Marked "Spill Response Kit"

Spill Kits will only be used in emergency situations. Spill Kits will be inspected by the Health & Safety Coordinator after each use and the contents replenished as necessary.