AECOM

Defence Construction Canada

Spill Response Plan (Updated)
DYE-M, Cape Dyer Dew Line Site

Prepared by:

AECOM
2540 Kensington Road NW, Calgary, AB, Canada T2N 3S3
T 403.270.9200 F 403.270.0399 www.aecom.com

Date:

January 7, 2009

AECOM

Statement of Qualifications and Limitations

Revision Log

Revision #	Revised By	Date	Issue / Revision Description
1	E. Schulz	January 5, 2009	Draft
2	E. Schulz	January 6, 2009	Final

Table of Contents

Tables

Appendices

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 SNC-Lavalin Inc. (SNC). 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
		Nahed Farah, Associate Project Manager	613-998-7917
		Andre Champagne, Contract Coordinator	416-849-3943
SNC-Lavalin Inc.	2200 Lake Shore Blvd. W Toronto, ON M6V 1A4	Contractor Site Manager: Dave Witty	416-849-3931

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 DYE-M. Their roles and responsibilities are described as follows:

SNC Project Manager

- Activates the Spill Contingency Plan (SCP) based on the assessment of the spill.
- Provides liason and maintains effective line of communication with DCC Contract Coordinator.
- Ensure that all phases of the SCP are appropriately implemented.
- Ensure, along with the SNC Construction manager and Health, Medical and Safety (HMS) Coordinator that necessary equipment and training is in place for spill response to meet or exceed legislative requirements.
- Report and provide advice/recommendations to all levels of management for the project.
- Based on input from the Construction Manager and HMS Coordinator, provide spill report to appropriate agencies. All consultation with external agencies is to be conducted through or in consultation with the DCC Contract Coordinator.
- Provide the DCC Contract Coordinator with documentation, follow-up, and liason with government agencies and media.
- Review all spill incidents, including any injury and/or property/environmental impact, and ensure that appropriate containment, recovery and clean up action is initiated.
- 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.
- 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.

SNC Construction Manager

- Support the efforts of the Project Manager.
- Evaluate spill situation and assess magnitude of the spill.
- Provide immediate notification to the DCC Contract Coordinator and SNC Project Manager and provide recommendation with respect to activation of spill contingency plan.
- Provide notification of spill incident to 24-hour spill report line and other supportive external organizations.
- Coordinate and oversee personnel and equipment resources to conduct spill containment, recovery, clean up and disposal.
- Document chronology of spill event and clean up efforts.

SNC HMS Coordinator

- Inspects the spill area on a continuous basis to assess health and safety hazards and provide appropriate direction.
- Coordinate off-site trained medical personnel and resources and secure site, if required.
- Implement spill training and simulation exercise for spill response.
- Support the efforts of the SNC Construction Manager

DCC Contract Coordinator

- Review spill report and actions taken for containment, recovery and clean up and recommend changes as required.
- Reviews all incident reports.
- Acts as company spokesperson with government agencies, media and all other outside organizations.

1.2 Description of the Facilities

1.2.1 Glycols, Alcohols, Fuels, Lubricating/Waste Oil Storage

Glycol, alcohols, fuels and lubricating oils used for the servicing of various equipment and site vehicles will be stored in the laydown area north of the warehouse. Anticipated supplies and quantities include Formula Shell Bronze Gasoline (16,400 L), HD 75W-90 automotive gear oil (205 L), 15W-40 multi-grade heavy duty engine oil (1,825 L), T*SB0W-30 synthetic blend heavy duty engine oil (1,620 L), TC hydraulic/transmission oil (multi-season CAT T0-4 additive system) (2,460 L), Jet A-1 W/AWA (2,460 L), T synthetic blend 5W-30 winter engine oil (410 L), and extended life coolant/per-diluted (2,460 L). These materials were to be shipped to the site via sea-lift and stored in 205 L steel drums.

1.2.2 Petroleum Products

A total of 13 fuel storage tanks are on site. There are six (6) x 50,000 L double-walled fuel tankers, one (1) x 18,500 L double-walled day tanker, and six (6) x 83,500 L self-dyked fuel storage tanks. One is to remain empty in order to provide a back-up tank.

1.2.3 Sewage Lagoon

The sewage lagoon has a capacity of approximately 1100 m^3, within 2 cells. The lagoons are constructed of compacted granular material berms.

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 2003 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 2003 Project Description. Soils impacted by sewage effluent do not require disposal and will be left in place.

3. Site Map

See attached Cape Dyer camp layout plan.

4. Spill Response Training

All Contractor personnel are to be formally trained. The training is to be comprised of all pertinent spill emergency response issues and will include, but not be limited to:

- Internal/external communication networks and required spill reporting and notification procedures;
- Response procedures including initial action, clean up procedures and disposal;
- Response organization;
- Individual spill action plans;
- Available internal/external resources (spill clean-up equipment);
- Dealing with seasonal diversities and adverse weather conditions in the context of spill response;
- Personal protective equipment;
- Properties of hazardous materials handled, stored and used on-site;
- Supervisors shall have completed contract-required the training requirements;
- Environmental legislation; and
- Company policy.

Training records are to be maintained at the Cape Dyer site office by the SNC HMS Coordinator.

5. Equipment Inventory

The following equipment (or similar) is available on-site:

Table 2 – Equipment

Quantity	Description
2	Rock truck
2	Loader
6	Excavator
1	Grader
4	Dozer
2	Fuel truck
2	Water truck
3	Mack truck
2	15 passenger van
13	Pick-up trucks
1	Incinerator
4	Generator
4	Sterling truck
1	Roll off
1	Backhoe
3	Compactor
3	Rock truck
1	Drill
10	Tanker trailer
2	Dumper
1	RPM 227 Loader mounted Snow Blower

There are six (6) spill response kits located on-site (maintenance shop, fuel containment areas, beach area, screener and Upper Site). SNC is responsible for providing sufficient spill response kits and specialty spill items. These kits will be in marked packages at visible and accessible locations. Kits will be located at fuel storage and transfer areas, liquid incinerator system, key clean up areas and chemical storage areas. As a minimum requirement, each spill kit will include the following items:

Table 3 – Spill Kit

Quantity	Description
1	205 L gauge open top drum with cover, bolt ring and gasket
1	48” x 48” x 1/16” neoprene pad (drain stop/plug)
2	Splash protective goggles
2	PVC oil resistant gloves
1	Package polyethylene disposable bags (5 mm) 10 per pack
1	Shovel (spark proof)
1	Case (T-12) 3” x 12’ mini-booms/case
1	Bag (HP-256) 17” x 19” x ½” pads, 100 pads/bail
1	Bag of sphag sorp TM