

**AREVA Resources Canada Inc.**

**Kiggavik Sissons Project, Nunavut**

**Appendix A**

**SPILL CONTINGENCY PLAN**

**Date of Issue: 20 March 2007**

## TABLE OF CONTENTS

SECTION .....	PAGE
<b>TABLE OF CONTENTS.....</b>	<b>I</b>
<b>LIST OF APPENDICES .....</b>	<b>IV</b>
<b>1 INTRODUCTION .....</b>	<b>1</b>
1.1 AREVA's Exploration Department Environmental Policy .....	1
<b>2 PURPOSE OF THE SPILL CONTINGENCY PLAN .....</b>	<b>2</b>
<b>3 SITE INFORMATION.....</b>	<b>3</b>
3.1 Petroleum and Chemical Product Storage and Inventory .....	3
3.2 Petroleum Product Transfer .....	3
3.3 Location and Content of Spill Kits .....	4
3.4 Orientation.....	4
<b>4 RISK ASSESSMENT, MITIGATION AND PREVENTATIVE MEASURES .....</b>	<b>6</b>
4.1 Risk Assessment .....	6
4.2 Mitigation and Preventative Measures.....	6
4.2.1 Spill of Fuel from Steel Drums on Tundra.....	7
4.2.2 Lead of Liquid Fuel from Reservoir and Distribution Lines .....	7
4.2.3 Spill of Liquid Fuel Into Lake Water .....	7
4.2.4 Release of Propane .....	7
4.2.5 Spill of Battery Acid.....	7
4.3 Winter Fuel Hauling .....	7
<b>5 RESPONDING TO FAILURES AND SPILLS.....</b>	<b>9</b>
5.1 Spill Response Contact List .....	9
5.2 Response to a Spill – Containment and Clean-Up.....	10
5.2.1 Spill of Fuel from Steel Drums on Tundra.....	10
5.2.2 Lead of Liquid Fuel from Reservoir and Distribution Lines .....	11

5.2.3	Spill of Liquid Fuel Into Lake Water .....	11
5.2.4	Release of Propane .....	11
5.2.5	Spill of Battery Acid.....	11
<b>5.3</b>	<b>Response to a Spill – Reporting.....</b>	<b>12</b>
<b>5.4</b>	<b>Other contacts for spill response/assistance and further reporting .....</b>	<b>12</b>
<b>6</b>	<b>TRAINING AND PRACTICE DRILLS.....</b>	<b>13</b>

## **LIST OF APPENDICES**

Appendix I: Spill Report Form

Appendix II: MSDS Sheets

# 1 INTRODUCTION

The AREVA Resources Canada Inc. (AREVA) Spill Contingency Plan shall be in effect for the duration of the Kiggavik Sissons exploration Project located about 80 km west of Baker Lake. This Plan shall be posted at operational remote camps and drill shacks. Any proposed changes and/or amendments will be submitted to the Nunavut Water Board (NWB), Indian Northern Affairs Canada (INAC), and the Kivalliq Inuit Association (KIA).

## 1.1 AREVA's Exploration Department Environmental Policy

AREVA endeavours to take every reasonable precaution toward ensuring the protection and conservation of the natural environment and the safety and health of all employees and contractors from any potential harmful effects of stored materials and operations. This commitment is reflected in the Exploration Department Environmental Policy which outlines the following principles:

- Evaluate all environmental aspects of exploration activities, identify the significant ones and document procedures for minimizing as much as reasonably achievable the environmental impacts while carrying out these activities;
- Comply with all applicable environmental legislation and regulations and Exploration's Environmental Code of Practice;
- Communicate AREVA Exploration's environmental requirements to employees and contractors to encourage their participation and compliance;
- Provide appropriate training, and conduct internal assessment and periodic review of procedures to ensure that exploration activities are operated in compliance with this policy;
- Develop appropriate objectives and targets against which performance is regularly measured;
- Deal pro actively with environmental issues by identifying potential impacts and implementing pollution preventive actions and/or developing effective contingency plans;
- Demonstrate continual improvement in environmental performance, be cognizant of advances in exploration technologies and the pertinent experiences of others; and,
- Inform and consider the interests of the Stakeholders in exploration activities.

AREVA *Environmental Code of Practice* provides a more specific and detailed procedures pertaining to spill response, and outlines responsibilities and expectations, which all field personnel are expected to follow. This document closely reflects the intent of this Code of Practice.

## **2 PURPOSE OF THE SPILL CONTINGENCY PLAN**

Spill is any accidental discharge of hazardous material to the environment. The purpose of this plan is to identify the potential for and the response method to spills for AREVA's exploration activities in Nunavut. The plan identifies how the environmental effects associated with these incidents can be prevented and/or mitigated through effective and efficient response. This plan also defines the responsibilities of key personnel.

### 3 SITE INFORMATION

The existing Kiggavik camp will be refurbished to accommodate field personnel. Drilling program will be carried-out at both the Kiggavik and Sissons sites. These two sites are located about 17 km from each other. This spill contingency plan thus covers the fuel storage, transfer, and handling at the Kiggavik and Sissons sites.

#### 3.1 Petroleum and Chemical Product Storage and Inventory

There will be two main fuel caches for this project located at each of the sites. Fuel cache locations are:

- Fuel cache at Kiggavik : 97° 39' 28" W, 64° 26' 26" N; and,
- Fuel cache at Sissons : 97° 52' 44" W, 64° 19' 54" N.

The fuel haul for the project will be delivered in winter via ground transport. This shipment is expected to include approximately: 300 drums of Jet-B, 365 drums of P-50, and 5 drums of unleaded gasoline, and 25 cylinders of propane. After spring thaw, additional fuel that may be required will be delivered by either a helicopter or a turbine otter from Baker Lake. The Jet-B, P-50, and unleaded gasoline are contained in 205 litre drums and propane in 45 kg cylinders. Each shipment will be inspected immediately upon delivery for leaks and integrity of the containers. All fuel containers will be marked with stickers bearing AREVA's name, product

Fuel will be stored within a secondary containment (e.g., rubberized berm or other suitable construction) with sufficient capacity to handle 10% of the total fuel volume plus the size of the largest container. Lubricants and drill additives will also be stored within a secondary containment inside one of the buildings designated for storage. Absorbent matting and/or drip pans will be placed under all areas where fuel leaks are likely to occur (*i.e.*, fuel line hose connections, fuelling stations, generators, water pump, parked heavy equipment), and these areas will be inspected on a daily basis. Waste oil, waste filters, and cleaned-up spill materials will be contained for removal from the site, for safe and appropriate disposal. Degreasing agents used for maintenance of equipment parts will be environmentally friendly and grease will be contained for removal from the site.

#### 3.2 Petroleum Product Transfer

Manual and automatic pumps (and aviation fuel filters for jet fuel) are used for the transfer of all petroleum products. Smoking, sparks, or open flames are **prohibited** in fuel storage and fuelling areas at all times. Petroleum transfer operations will be carried out by trained personnel.

### 3.3 Location and Content of Spill Kits

Complete spill kits will be located at each of the fuel caches, at the drill shack, at the water pump, and at the camp. Spill kits will contain:

- one 360 litre/79 gallon polyethylene over-pack drum;
- four oil sorbent booms (5" X 10');
- 100 -oil sorbent sheets (16.5" X 20" X 3/8");
- one drain cover (36" X 36" X 1/16");
- one Caution tape (3" X 500');
- one, 1 lb plugging compound;
- two pairs Nitrile gloves;
- two pairs Safety goggles;
- two pairs Tyvek coveralls;
- one instruction booklet;
- ten printed disposable bags (24" X 48");
- one shovel, and,
- skimmers.

In addition,

- At least one empty fuel drum and a pump will be located at each fuel cache in the event of damaged or leaking drums.
- Extra absorbent pads will be kept with the helicopter, drill and any area where re-fuelling, transferring and/or handling is done.
- Fire extinguishers of the proper type, size and number will be stationed in each building and near each site where equipment is normally serviced and anywhere else it is deemed advisable.
- Hand tools (i.e., shovels, scoops, etc...) will be stationed around camp.
- A neutralizer (i.e., sodium bicarbonate) will be stored in labeled covered polyethylene pails near each of the batteries on site.
- A Supply of 20-litre polyethylene pails and heavy polyethylene sample bags will be reserved for the collection and storage of used absorbent materials and acid neutralizer.

### 3.4 Orientation

All personnel at camp (AREVA employees, contractors, and visitors) will be presented with a copy of the orientation plan when they first arrive at the camp. The plan will be reviewed during their orientation to camp by the Camp Manager, including the location of the Material Safety Data Sheets (on a labelled wall rack in the office), the location of spill kits and additional supplies and tools. Training for spill contingency will consist of alerting all personnel to be watchful for any leaks or spills and where these are most likely, instruction in the use of the



equipment and materials, introduction to the protocol of the chain of command and the legal requirement to report certain spills as well as how to collect, store and dispose of spilled product.

## **4 RISK ASSESSMENT, MITIGATION AND PREVENTATIVE MEASURES**

### **4.1 Risk Assessment**

The potential sources for spills have been identified as follows:

- 1) Storage of drummed products: leaks or ruptures may occur. This includes drums of Jet-B, P-50 diesel, gasoline, waste fuel, and waste oil.
- 2) Propane cylinders: propane leaks may occur at the valves. All cylinders are secured at all times.
- 3) Refuelling equipment such as: diamond drill equipment; helicopters; camp generator, stoves and incinerators; wheeled vehicles; snowmobiles, pumps. Incidents involving leaking or dripping fuels and oils may occur due to malfunctions, impact damage, lack of regular maintenance, improper storage, or faulty operation.

### **4.2 Mitigation and Preventative Measures**

AREVA's Exploration Department Environmental Code of Practice discusses how to conduct activities so as to minimize the risk of spill. This discussion is provided in Section 3.1. In addition, the following measures will further minimize the potential for spills during fuel handling, transfer and storage:

- 1) Fuel transfer hoses with cam lock mechanisms to be used.
- 2) Carefully monitor fuel content in the receiving vessel during transfer. Always have additional absorbent pads on hand while transferring fuel.
- 3) Clean up drips and minor spills immediately.
- 4) Regularly inspect drums, tanks and hoses for leaks or potential to leak and for proper storage.
- 5) Create fuel caches in natural depressions that are located a minimum of 31 metres from the normal high-water mark of any water body.
- 6) Train personnel, especially those who will be operators, in proper fuel handling and spill response procedures. This training to include a "mock" spill, review of spill kit contents and their use and reporting.

#### **4.2.1 *Spill of Fuel from Steel Drums on Tundra***

Steel drums will be stored in such a manner that they will not be susceptible to tipping over, rolling or otherwise being unstable. Care will be exercise so that nothing can cause damage to steel fuel drums by falling or rolling onto or into them. When unloading steel fuel drums from aircrafts, the use of a ramp or a cushion (automotive tire) will ensure that they are not damaged.

#### **4.2.2 *Lead of Liquid Fuel from Reservoir and Distribution Lines***

Stability of all reservoir and distribution assemblies is of utmost importance to ensure that the risk of damage is minimized. All stands for reservoirs will be constructed to strength standards beyond those required. Distribution lines from reservoirs to appliances will be fitted with an appropriate shut-off valve immediately downstream from the reservoir. The line will be installed in such a way to prevent being chafed in the wind, chewed on by animals or tripped on by humans. This will be done by securing it to rigid structures, encasing it in armour or any other effective manner. These measures apply broadly to heating oil, gasoline and propane set-ups.

#### **4.2.3 *Spill of Liquid Fuel Into Lake Water***

Liquid fuel in steel drums will be stored well back from the lakeshore on durable ground.

#### **4.2.4 *Release of Propane***

Propane will be stored in appropriate, certified containers. Propane containers will be inspected and monitored on a regular basis for any signs of deterioration or corrosion. Containers will be secured and fastened in an upright position to ensure there is no risk of damage to the regulator in the event of a fall.

#### **4.2.5 *Spill of Battery Acid***

Acquisition of non-spillable Optima batteries will reduce the risk of a spill of this type. Optima batteries can be shipped by air, they are exempt from UN2800 classification. All batteries will be protected from damage by fastening them into the space designed for them when used with various power equipment and stored safely when not in use.

### **4.3 *Winter Fuel Hauling***

AREVA plans to use Peter's Expediting Ltd and/or SK Construction (Baker Lake owned businesses) for hauling fuel.

Typical vehicle specification:

- Delta 3 Foremost;
- Top speed 10 mph when fully loaded and 12 mph when empty;
- Each vehicle carries a fuel clean up kit and a portable drum
- Vehicle uses floatation tires;
- Have 10,000 litre bladder tank for collecting dripping fuel;
- Have portable phone and HF radio; and,
- Option of using the one delta truck with 24 hr satellite phone

Vehicle crew will have:

- Dangerous Goods Certification
- Certification for responding to and cleaning fuel spill.

## 5 RESPONDING TO FAILURES AND SPILLS

Spills are to be documented and reported to the 24 hour Spill Line. Based on Environment Canada's recommendation, **all** releases of harmful substances, regardless of quantity are immediately reportable where the release is:

- Is near or into a water body;
- Is near of into a designated sensitive environment or sensitive wildlife habitat;
- Poses an imminent threat to human health or safety;
- Poses an imminent threat to listed species at risk or its critical habitat.

The relevant procedures and responsibility in the event of a spill is outlined in AREVA's *Exploration Department Environmental Emergency Response Plan*.

### 5.1 Spill Response Contact List

The most recent "Emergency Contacts" list will be available in drill rigs and field offices. The contact list relevant to spill response at this stage of the project are listed below.

Position	Name/Location	24-Hour Contact #	
Immediate Contacts for Spills			
On-Site Coordinator	Barry McCallum (subject to change)	Phone	867 793 2000 306 343 4596 902 562 3314
Community Liaison Officer	William Noah (Baker Lake)	Phone	867 793 2000 867 793 2677
General Manager Kiggavik Sissons	Frederic Guerin (Saskatoon)	Phone	306 343 4631
Government 24-Hour Spill Report Line		Phone	867-920-8130
Note: A Spill Report (Appendix I) should be filled out as completely as possible prior to calling the 24-Hour Spill Report Line. Areva will fill out spill reports as a matter of record keeping.			
Kivaliq Inuit Association	PO BOX 340 Rankin Inlet, Nu XOC 0G0	Phone	867-645-2800
INAC	Water Resources Inspector	Phone	867-975-4298
Environment Canada	Iqaluit	Phone 24 hour pager	867-975-4644 867-920-5131

## 5.2 Response to a Spill – Containment and Clean-Up

In the case of any spill or other environmental emergency, it is necessary to react in the most immediate, safe, and environmentally responsible manner. No spill or incident is so minor that it can be ignored. Appropriate spill response actions are summarized in Appendix III.

The basic steps of the response plan are as follows:

**Ensure** the safety of all persons at all times.

**Identify** and find the spill substance and its source.

1. Eliminate all ignition sources and shut off machinery.
2. If you can do it without placing yourself at risk, take actions to stop the spill at the source (*i.e.*, shut off valves, reconnect hoses, *etc.*).
3. Make sure you wear appropriate Personal Protection Equipment (“PPE”) as necessary and available.
4. Contain spill with appropriate material and equipment (*i.e.*, spill response kit, *etc.*). Refer to the Material Safety Data Sheets (“MSDS”) if this is a controlled substance. Pump large spills into barrels or other suitable container as available. Use absorbent matting on smaller spills.
5. If necessary, barricade the spill area (do not use flares unless you are certain the spilled material and its vapours are not flammable or explosive).
6. If you can do it without placing yourself at greater risk, keep spilled material out of waterways. Use shovels to dig trenches or make dirt and sand barriers.
7. Stay upwind and keep bystanders away.
8. Upon completion of clean-up, place contaminated absorbent and associated materials in barrels for removal from the site.
9. Get help – refer to the “EMERGENCY CONTACTS” list.

**Inform** the on-site coordinator or his/her designate at once, so that he/she may take the appropriate actions.

**Implement** any necessary cleanup and/or remedial action.

### 5.2.1 Spill of Fuel from Steel Drums on Tundra

Puncture or rupture of 206-litres steel drums containing liquid fuels will initially be assessed for risk of ignition. Sources of ignition will be extinguished or isolated from the spill if safe to do so. Efforts will be made to plug punctures with appropriate material from the spill kit (expandable neoprene plugs or wedges and shims). Ruptures will be high-centered to stop further spill of fuel. Absorbent material will be placed on spilled fuel and into appropriate containers (plastic or metal cans or pails in good condition) as it becomes saturated with fuel. A containment berm will be built from soil and/or tarps to contain a large spill. Fuel skimmed or wicked off of the surface to be disposed of, most probably by incineration. High-centered ruptures will be used

as a point of entry for manually-operated fuel transfer pump suction tubes, and remaining fuel will be removed to a sound drum. Contaminated soil, vegetation or gravel will be removed into buckets with lids for proper disposal upon instruction of the regulatory agency.

### **5.2.2 *Lead of Liquid Fuel from Reservoir and Distribution Lines***

A detected leak from a fuel reservoir and distribution line assembly will be initially assessed for risk of ignition. Sources of ignition will be extinguished or isolated from the leak if safe to do so. Shut-off valve immediately downstream from reservoir will be turned off. Absorbent material will be placed on the spilled fuel; if spilled onto snow or ice this will be scooped up with a shovel and stored in an appropriate container. Spilled fuel collected will be disposed of by incineration. The site of the leak will be searched for and repaired if and when found, if the site of the leak is not found the entire assembly may be replaced paying special attention to quality of materials, equipment and techniques of installation employed.

### **5.2.3 *Spill of Liquid Fuel Into Lake Water***

Confinement and collection of liquid fuel in lake water will be attempted with floating booms of petroleum absorbent material. For larger spills, liquid will be removed by skimming. Spilled fuel collected will be disposed of by incineration. Contaminated water and/or absorbent material will be removed into buckets with lids for proper disposal upon instruction of the regulatory agency.

### **5.2.4 *Release of Propane***

No attempt should be made to contain a propane release. Water spray can be used to reduce the risk of ignition. Personnel should withdraw from the area immediately until all the vapors have diffused. We will contact the proper agency for disposal instructions of a defective container.

### **5.2.5 *Spill of Battery Acid***

In case of a spill of battery acid the first concern will be for the safety of any person(s) at risk of harm. Sources of ignition to the potentially explosive gas will be extinguished or isolated if safe to do so. Personal protective equipment, eye and hand wear at a minimum, will be donned and a neutralizer (sodium bicarbonate) will be bermed around the spill site. If safe to do so the entire battery may be placed into a non-corrodible container. The neutralizer may then be worked into the entire area of the spill until no more obvious reaction is noticed. Used neutralizer will be placed in suitable containers for appropriate disposal.

### 5.3 Response to a Spill – Reporting

**Immediately** notify and report to the 24-Hour Spill Line at (867) 920-8130, the DIAND Water Resources Inspector in Nunavut at (867) 975-4298, the Kivalliq Inuit Association in Nunavut at (867) 645-2800, and Environment Canada personnel at 867-975-4644.

A **Spill Report Form** (Appendix I) is filled out as completely as possible before or after contacting the 24 Hour Spill Line. Note the new spill form will be utilized as recommended by GN.

**Notify** Frederic Guerin, General Manager, Kiggavik Sissons Project, AREVA Resources Canada Inc. at (306) 343-4631.

### 5.4 Other contacts for spill response/assistance and further reporting

- Nunavut Water Board - (867) 360-6338;
- Fisheries and Oceans Canada, Habitat Impact Assessment Biologist – (867) 979-8007; and,
- Government of Nunavut Department of Environment - (867) 975-5910.



## **6 TRAINING AND PRACTICE DRILLS**

All employees and contractors will be familiar with the spill response resources at hand, this Contingency Plan, MSDS sheets, and will also be trained for initial spill response methods. Involvement of other employees may be required, from time to time. Annual refreshers will be conducted to review the procedures within this plan. As well, at least one practice drill will be held per season to allow all field -personnel opportunity to practice emergency response skills.

## **APPENDICES**