AREVA Resources Canada Inc.

Kiggavik Project, Nunavut

SPILL CONTINGENCY PLAN

January 2010 – Version 5

REQUIRED USERS

Required and other users are responsible for using the current version of the Spill Contingency Plan as posted on the Kiggavik drive. Users may print copies of this plan, but are ultimately responsible for ensuring they are using a current copy as posted. Users are requested to destroy all previously printed copies of the plan when they are informed of revisions.

HISTORY OF REVISIONS

Version	Revision	Date	Details of Revision
1	0	March 2007	Original submission
2	0	October 2007	Update to reflect changes in field activities/capabilities and goals of continual improvement
2	1	May 2008	Updated to reflect comments and conditions received by the Nunavut Water Board associated with the issuance of water licence no. 2BE-KIG0812
3	0	January 2009	Update to reflect changes in field activities/capabilities and goals of continual improvement
4	0	March 2009	Updated to reflect changes in field activities/capabilities and goals of continual improvement
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The original hard copy of this approval page has been signed and is located at the AREVA Resources Canada Inc. corporate office.

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1 INTRODUCTION

The AREVA Resources Canada Inc. (ARC) Spill Contingency Plan (Plan) is in effect for the duration of the Kiggavik Project. The Plan is intended to apply to the Kiggavik Project located approximately 80km west of Baker Lake and all points located between the site and Baker Lake. In addition, the Plan is made available at operational remote camps and drill shacks, the Site, ARC's Baker Lake Office as well as ARC's corporate office.

1.1 Purpose and Scope

The primary objective of the Spill Contingency Plan is to help prevent or reduce the potential of spills of pollutants and prevent, reduce or eliminate any adverse effects that result or may result. As such, the Plan provides information and guidance on actions important for the prevention of spills and procedures to detect and respond to spills when they occur.

By considering the likelihood of the spill and the nature and extent of any potential adverse effects, the Plan will evoke a risk management approach when considering spill events that could potentially be associated with the Kiggavik project. Effective implementation of spill prevention planning is also an important proactive component for minimizing the risks posed by spills. By implementing effective spill prevention, the risk of spills can be reduced in magnitude and perhaps even avoided.

Furthermore, the purpose of this plan is to identify potential response methods to spills in the vicinity of ARC's operations in Nunavut. The Plan identifies how the environmental effects associated with these incidents can be prevented and/or mitigated through safe, effective and efficient response.

This Plan is intended to satisfy Nunavut Regulation R-068-93 SPILL CONTINGENCY PLANNING AND REPORTING REGULATIONS. In said regulations, "spill" is defined as "…a discharge of a contaminant in contravention of the Act or regulations made under the Act or a permit or license issued under the Act or regulations made under the Act." ARC's working definition of a spill is defined as any accidental discharge to the environment of a hazardous material.

1.2 Revision to Manual

This manual is reviewed by the Facility Supervisor, the Environment Health and Safety (EHS) Group and the General Manager, Kiggavik Project on an annual basis and is updated as required to keep it current and consistent with regulatory and procedural changes. A history of revisions can be found at the front of this manual. Any changes and/or amendments to the Plan will be submitted to the Nunavut Water Board (NWB), Indian Northern Affairs Canada (INAC), and the Kivalliq Inuit Association (KIA).

1.3 Responsibilities

The Facility Supervisor is responsible to ensure that all personnel and contractors assigned to the Project are familiar with the requirements of this Plan.

The EHS Group reports to the Facility Supervisor. The Group includes:

- Environment and Radiation Protection Supervisor
- Environment Technicians
- First aid responders (ARC staff and/or contractors)
- Safety personnel (ARC staff and/or contractors)

The General Manager, Kiggavik Project is ultimately responsible for any activity being carried out by Kiggavik Project personnel.

2 SITE INFORMATION

2.1 Location

The Kiggavik Project includes two properties:

- The Kiggavik site is located at approximately 64°26'N and 97° 37'W. The property consists of 17 mineral leases totalling 3,972ha (officially 9,808acres). All leases are currently on Crown Land (ie: surface and subsurface rights are administered by Indian & Northern Affairs Canada (INAC)).

- The Sissons site is situated roughly 17km south-west of Kiggavik at approximately 64°20'N and 97°52'W. The Sissons property consists of 22 mineral leases totally 14,730ha (officially 36,371.50acres). Five of the mineral leases, including those containing the Andrew Lake and End Grid deposits, are located on Inuit Owned Land subsurface parcels, as such surface rights are administered by the Kivalliq Inuit Association and subsurface rights are "grandfathered" – administered by INAC.

An exploration camp currently exists at the Kiggavik site. This camp can accommodate approximately 60 people. The Project area currently includes the following infrastructure:

- One storage shed/back-up generator/shop
- One generator building (housing the current generator);
- one helicopter storage/shop;
- one kitchen with storage;
- One washroom/dry building constructed with separate male/female facilities;
- two offices;
- 17 sleeping units (one is a first aid shack);
- one fuel storage areas (equipped with Arctic Berms);
- grey water collection area;
- industrial incinerator;
- core storage;
- five core logging tents;
- radioactive materials storage compound;
- Fuel esker containing 8 bulk fuel tanks, three for Jet-B fuel and five for diesel fuel, and fuel drums stored on secondary containment

Detailed site maps showing topography can be found in Appendix III.

2.2 Petroleum and Chemical Product Storage and Inventory

Below is a list of products (not inclusive) used, along with the maximum amount stored at camp and the how they are stored at the Project site.

Chemical/Material	Amount	Storage Type
Deisel Fuel	250000 L	Secondary Containment
Jet B Fuel	223040 L	Secondary Containment
Gasoline	1025 L	Secondary Containment
Generator Oil	20 x 20L (400 L)	Secondary Containment
Hydrolic Oil	20 x 20L (400 L)	Secondary Containment
Engine Oil	20 x 20L (400 L)	Secondary Containment
Propane	75 x 100 lb (7500 lb)	Secondary Containment
Grease (for grease gun)	5 cases x 12 tubes (60 tubes)	Secondary Containment
Salt	50000 lbs	Secondary Containment
Cement	15000 lbs	Secondary Containment

A specific inventory of all petroleum and chemical products used during the field operations is recorded upon receiving the products at site. This list is kept at site and maintained on a regular basis.

2.2.1 Drums

There are presently two primary fuel caches locations available for use, as required:

- Fuel cache at Kiggavik: 14W 564464, 7146782
- Fuel cache at esker: 14W 561512, 7145240

If a fuel haul consisting of drums is required, the haul would occur during winter conditions via ground transport (snow cats, foremosts or other tundra trucks). Shipments normally would be expected to consist of a combination of Jet-B and/or Jet-A, P-50 diesel fuel, unleaded gasoline and propane cylinders. It is anticipated that any additional fuel that may be required, following spring thaw, would be delivered by either helicopter or fixed wing aircraft from Baker Lake.

As of present, all drums of Jet-B, P-50 diesel fuel and unleaded gasoline at the Kiggavik Project are stored in approved 205L steel drums. The Kiggavik Project is working towards using Enviro tanks exclusively for the bulk storage of Jet-B and P-50 diesel fuels.

Each shipment is inspected immediately upon delivery for leaks and to evaluate the integrity of the containers. All fuel containers are labelled, identifying the contents and the name “AREVA”.

Fuel drums are stored within secondary containment systems at the camp site and the fuel cache esker. The secondary containment system presently being used is adequate to contain 110% of the total aggregate storage capacity of the drums. Secondary containment is used for all liquid fuels, and lubricants. Drill additives are stored in sea containers, kept away from moisture.

Furthermore, from a spill prevention practice, absorbent matting and/or drip pans is 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 are inspected at least weekly. Waste oil, waste filters, and cleaned-up spill materials are contained for removal from the site, for safe and appropriate disposal. Degreasing agents used for maintenance of equipment parts and grease are contained for removal from the site.

The following photo indicates the type of secondary containment utilized for the storage of petroleum products and other hazardous materials and hazardous waste products. The Insta-Berm made of industrial-strength fabrics, is a durable and easy-to-use environmental safeguard. The Insta-Berm is used for secondary containment of toxic materials in many applications, to help industries meet today's strict guidelines on environmental protection.

For longer storage, during the winter season, or until an approved handling facility can be located, waste products are temporarily stored in sea-cans on site.

* Drums in this photo are empty and are shipped off site

2.2.2 Fuel Tanks

Due to a planned increase in related field activity, the associated fuel demand and to reduce the potential of fuel spills associated with the drums, the installation of a temporary bulk fuel tank storage system at the esker site will occur. It is ARC's intention to have these tanks in place and functioning for the 2009 field season.

Six double-walled steel EnviroTanks, each with a capacity of 50,000L have been installed at an esker located on the Kiggavik lease, east of the Kiggavik camp (same location where current fuel drum cache exists). Three tanks on the north side of the esker are for the storage of Jet-B fuel, and three tanks on the south side of the esker are for the storage of diesel fuel. The coordinates are as follows:

- 14W 561512, 7145240

The site layout and tanks have been designed by a consulting professional engineer and have been installed by a registered company/petroleum contractor to ensure compliance with the Canadian Council of Ministers of the Environment (CCME) Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, 2003. In 2007 Golder Associates (Golder) conducted an engineering assessment to identify potential issues with the installation of storage tanks. Recommendations were provided for the foundation support for the storage tanks. To mitigate the potential issues described in the report, Golder recommended that the tanks be placed on timbers located under each saddle to provide an increased bearing area.

The use of timbers is a deviation from the CCME COP, however it should be noted that this is common practice in the area and AREVA received permission from the area Fire Marshal, Tim Hinds with the Government of Nunavut-Community and Government Services via email (Trevor Carlson, AREVA) on November 20th, 2007.

Double walled steel EnviroTanks are considered to meet the requirements of secondary containment within their own structure. To further augment the inherent secondary containment, rubberized berms

(Arctic berms) or other suitable lined structures will be placed beneath associated piping and utilized during fuel transfers to minimize the potential for the escape of fuels to the environment. In addition, spill/overfill protection consisting of high level alarms and overfill preventors catch basins around each tanks fill pipe are used to add further protection against spillage.

The design basis for all petroleum storage on site is the CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products (COP), 2003.

The operational and maintenance requirements for all petroleum storage and handling on site are based on the CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, 2003 and in compliance with the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, under the *Canadian Environmental Protection Act, 1999* (CEPA 1999).

The fuel storage system at the Kiggavik site has been registered with Environment Canada through an online database, the Federal Identification for Storage Tank Systems (FIRST).

2.3 Petroleum Product Transfer

To minimize fuel spillage associated with dispensing of product, all dispensing and tank filling operations is attended and involves the use of manually held open nozzles equipped with automatic shut off mechanisms.

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.

2.4 Location and Content of Spill Kits

Spill kits can vary in size and content depending on supplier and manufacturer however to remain consistent and provide adequate spill supplies, ARC has chosen two types of spill kits which are considered to be standard. The kits generally include the following contents, or similar:

1. Universal Emergency Response Kit 30Gallon/135L

- Sorbant capacity of 96L
- 4 socks (3” X 10’)
- 75 pads
- 1 drain cover
- 1 caution tape
- 2 pairs nitrile gloves
- 2 pairs safety goggles
- 2 protective coveralls
- 5 disposable bags
- 1 instruction book

2. Universal Overpack Kits 95 US Gallon Drums

    - Sorbant capacity of 275L
    - 4 socks (3" x 10')
    - 5 socks (3" x 4')
    - 50 pads
    - 5 pillows
    - 1 roll
    - 1 drain cover
    - 1 caution tape
    - 2 pairs nitrile gloves
    - 2 pairs safety goggles
    - 2 protective coveralls
    - 10 disposable bags
    - 1 instruction book

A variety of spill kits are available, other kits than those listed above may be purchased for a variety of reasons (availability, intended use, etc). All spill kits contain an itemized list of its contents and inventory of the kits on site is conducted on a regular basis (monthly or immediately following use), to identify and replenish missing items.

Example of the spill kits utilized at the Project site.

In addition, the following spill response material is also readily available for spill response (these products are stored in the Generator building):

- Skimmers
- Plugging compound
- Bulk supplies of oil absorbent pads and socks

- Aluminium or brass shovels or tools
- Bonding cables
- MSDS sheets

Due to the volume of fuel being stored in the fuel tank storage system and the remote nature of the sites, at least one of the Bulk Storage Site Spill Kits 95 US Gallon Spill Kits will be present for each 100,000L of fuel being stored.

In addition,

- At least one empty fuel drum and a pump will be located at each fuel cache and tank storage system in the event of damaged or leaking drums.
- Fire extinguishers of the proper type, size and number will be stationed in each building, at the fuel tank storage system and near each site where equipment is normally serviced and anywhere else it is deemed advisable.
- A supply of sealable 20-litre steel pails or 205-litre drums will be reserved for the collection and storage of used absorbent materials. Steel drums, clearly labelled for the storage of spent absorbent materials will be located at camp and at each fuel storage tank location as well as at each cache of drummed fuel or lubricants.

2.5 Orientation

All personnel at camp (ARC employees, contractors, and visitors) are given formal orientation upon arrival at camp. The spill contingency awareness plan is reviewed during their orientation by the EHS Group or designate 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 consists 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.

3 POTENTIAL HAZARDS, MITIGATION AND PREVENTATIVE MEASURES

3.1 Potential Hazards

Potential sources for spills have been identified as follows:

- Storage of drummed products: leaks or ruptures may occur. This includes drums of Jet-B, P-50 diesel, gasoline, waste fuel, and waste oil.
- Overfilling of tank(s) at the fuel tank storage system of Jet-B or P-50 diesel
- Transfer of fuel from tank to drum and from drum to tank
- Fire at the fuel tank storage system
- Collision at the fuel tank storage system
- Vandalism of fuel tank storage system
- Propane cylinders: propane leaks may occur at the valves. All cylinders are secured at all times.
- 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.
- Spills of acid from damage lead/acid batteries
- Spill of radiologically contaminated drill cuttings during drilling operations or transport of totes
- Spill of potentially contaminated drill return water.

3.2 Mitigation and Preventative Measures

Kiggavik's Environmental Code of Practice discusses how to conduct activities so as to minimize the risk of spill. 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 when transferring bulk fuel deliveries into the bulk storage tanks.
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 at least 30m from the normal high-water mark of any water body.
6) Inventory and reconciliation procedures developed to ensure tanks are not overtopped and to ensure that tank leakage is not occurring.
7) Overfill protection on tanks include visual and audible alarms; catch basins around fill pipe; additional secondary containment at transfer locations; corrosion protection
8) Train personnel, especially those who will be operators, in proper fuel handling and spill response procedures. This training is to include a "mock" spill, review of spill kit contents and their use and reporting.

3.2.1 Spill of Fuel from Metal Drums on Tundra

Metal drums are stored in such a manner that they are not susceptible to tipping over, rolling or otherwise being unstable. Care is exercised so that nothing can cause damage to metal fuel drums by falling or rolling onto or into them. The use of a ramp or a cushion (automotive tire) while unloading metal fuel drums from aircrafts ensures that they are not damaged.

All drums of fuel are stored at fuel caches that consist of secondary containment.

3.2.2 Spill of Fuel from Fuel Tank Storage System

To prevent spillage during the filling of the fuel tank storage system the following items will be in place:

- Visible and audible high level alarm
- Automatic high liquid shut off device
- Manual dips conducted in conjunction with the inventory and reconciliation procedures to be carried out by the delivery truck operators and site personnel
- All tanks are double-walled
- Spill/Overfill protection – catch basins around the fill pipe will collect any liquid spilled during connecting or disconnecting of the fill hose
- Corrosion Protection – provided by painting of the tanks
- Drums will be placed in appropriated lined structures for fuel transfer from tank to drum

Most releases at a fuel tank storage system are due to piping and line failure. This system of tanks are independent of each other and do not require any piping.

All personnel conducting fuel transfers are to be adequately trained in the procedure and spill contingency.

Spills or leaks are known to occur due to improper management of tanks prior to installation. All tanks located at the Kiggavik Sisson site have been inspected by a qualified person prior to filling and again prior to initial use.

3.2.3 Leak of Liquid Fuel from Distribution Lines

Stability of all storage tanks and distribution assemblies is of utmost importance to ensure that the risk of damage is minimized. All stands for reservoir tanks and fuel tanks are constructed to strength standards beyond those required. Distribution lines from reservoir tanks and fuel tanks are fitted with appropriate shut-off valves immediately downstream from the tank. All valves are closed when tank is not in use. All associated distribution lines are installed in such a way to prevent being chafed in the wind, chewed on by animals or tripped on by humans. This is done by securing it to rigid structures, encasing it in armour or any other effective manner. These measures apply broadly to heating oil, jet fuel, gasoline and propane set-ups.

3.2.4 Spill of Liquid Fuel into Lake Water

Liquid fuel in metal drums must be at a minimum of 31m from surface water on stable and level ground unless approved by regulatory agencies. Refuelling must not take place below the high water mark of any water body under any circumstance.

3.2.5 Release of Propane

Propane is stored in certified containers and is inspected and monitored on a regular basis for any signs of deterioration or corrosion. Containers are secured and fastened in an upright position to ensure there is no risk of damage to the regulator in the event of a fall. Only qualified gas fitters will connect or disconnect piping to any bulk propane storage system.

In the event that larger bullets are introduced on site, only qualified gas fitters will connect or disconnect the piping and crash protection will be provided once there are vehicles on site.

3.2.6 Spill of Battery Acid

Acquisition of non-spillable batteries reduces the risk of a spill of this type. These batteries can be shipped by air as they are exempt from UN2800 classification. All batteries are 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.

3.2.7 Fire at the Fuel Tank Storage System

Grounding cables are used for all transfers of bulk gasoline or jet fuel to minimize to potential of a static discharge and potential fire.

3.2.8 Crash at Fuel Storage Tanks

Current risk of a crash occurring at either fuel tank storage system location is minimal due to the absence of vehicles at the field program sites. In the event that the use of vehicles is introduced in the operation, crash protection will be put in place.

To assist aircrafts and helicopters, wind socks are placed at each location.

3.2.9 Spill of Radiologically Contaminated Drill Cuttings

During drilling activities, drill mud solids or cuttings in non-mineralized zones are deposited on the ground in low-lying areas. When mineralized core is intercepted, all drill mud and cuttings are collected in appropriate containers and categorized as radioactive through appropriate radiation measurements in accordance with work instructions.

3.2.10 Spill of Potentially Contaminated Drill Return Water

Return water from drilling activities, including general drainage from the drill footprint, are diverted into low-lying areas in such a way so as to stop these waters from directly entering lakes and streams.

In order to reduce risk of water pooling in the drill area, clean water not used in the drilling process is pumped back to its source.

3.3 Winter Fuel Hauling

ARC plans to use a locally owned business for hauling fuel.

Typical Bulk Fuel Delivery Vehicle specifications and operating practice:

- Vehicle type: Delta 3 Foremost on flotation type tires
- Operational top speed of 16km/h (10mph) when fully loaded and 19km/h (12mph) when empty;
- Vehicle carries a Bulk Site Spill Kit and an empty steel drum for the storage of spent absorbent material;
- Polyethylene material for lining a trench or depression
- Spark proof shovels
- Oil absorbent
- Vehicle will use separate bladder tanks for transporting diesel and Jet-B fuels
- Vehicle will have a portable phone and HF radio and/or satellite telephone

Vehicle crew will have current and valid training for:

- Transportation of Dangerous Goods
- Fuel Spill Training
- Spill Contingency Awareness

4 SPILL REPORTING REQUIREMENTS

This Plan is initiated by the Facility Supervisor or the EHS Group or designates, this includes initiating response, documenting associated activities and reporting the spill, within 24hours to the Spill Line.

Based on Environment Canada's recommendation, all releases of harmful substances, regardless of quantity are immediately reportable where the release is:

- Near or into a water body;
- 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.

Based on Nunavut's regulation R-068-93, Spill Contingency Planning and Reporting Regulations, impose a legal requirement to report any spill of flammable liquids greater than 100L in quantity. In addition, ANY quantity of spilled radioactive material is reportable. The following table (Schedule B) is a reference from regulation R-068-93 and indicates quantities of spilled product that requires reporting to the Department of Environment-Government of Nunavut.

SCHEDULE B

(Section 9)

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

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If you are in doubt as to whether or not a spill is reportable, it is better to err on the side of caution and to report the spill.

4.1 Spill Response Contact List

The most recent "Emergency Contacts" list will be available in drill rigs and field offices. It can be found in the appendices of this manual as well.

Agency contact information can be found in the Project Contact List.

4.2 Reporting Requirements

1. Collect Required Information

During spill response and once safe to do so the following information should be generated and reported to appropriate personnel and agencies (refer and complete the Spill Report Form found in appendix II):

- Date and time of spill
- Location of spill
- Direction the spill is moving
- Name and number of contact person at location of spill
- Type and quantity of contaminant
- Cause of spill
- Whether spill is contained or stopped
- Description of the existing contaminant
- Action taken to contain, recover, clean-up and dispose of spilled material

2. Report

Once safe to do so, immediately notify the following agencies/people of the spill (phone numbers can be found in the appendices of this manual):

- Government of Nunavut (GN) and Environment Canada (EC) 24-hour spill report lines (within 24hours) by phone; utilize the information collected for the spill report form
    - GN: 867-920-8130
- General Manager, Kiggavik Project
- Manager, Nunavut Affairs and Baker Lake office
- Facility Supervisor (if not on site during incident)
- EHS Group (if not on site during incident)
- The Nunavut Water Board (NWB) and Indian and Northern Affairs Canada (INAC) request verbal notification as soon as possible, however they should be notified by the spill report line
    - NWB: 867-360-6338
    - INAC: 867-975-4295
- A copy of the written Spill Report Form must be submitted to INAC (Water Resources Office and Manager of Field Operations), NWB and EC within seven calendar days of the incident
- A detailed report must be submitted to INAC, NWB and EC within 30 days
- Submit a copy of the Spill Report Form and a detailed report to Kivalliq Inuit Association (KIA).

5 SPILL RESPONSE

5.1 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.

The basic steps of the response plan are as follows:

Ensure the safety of all persons at all times.

The safety of yourself and others is the most important consideration when responding to a spill. As such, all actions that you perform as part of your spill response must only be undertaken if they can be undertaken in a safe manner. If an action can not be undertaken in a safe manner or if you do not feel that you are adequately trained or equipped to respond to a spill, the only appropriate thing to do is to safely evacuate all personnel in the area to a safe area away from the spill. Once everyone is safe you will then need to request assistance from trained emergency responders with the appropriate resources to manage the spill safely and effectively.

KEY POINTS TO CONSIDER WHEN REPONDING TO A SPILL

- *It is your responsibility to act safely, using appropriate personal protective equipment and work practice.*
- *It is your responsibility to respect the safety of others in the area.*
- *It is your responsibility to refuse to perform activities that you feel are unsafe.*
- *It is your responsibility to inform those involved or in the area if you believe that their actions, or proposed actions, are unsafe. This includes colleagues, first responders, contractors, members of the public, etc.*

Identify and find the spill substance and its source.

Individual discovering the spill shall:

- Move upwind of the material
- Call for help – contact the Facility Supervisor or designate
- Attempt to stop leak – only if safe to do so
- Attempt to contain spilled material – only if safe to do so

Facility Supervisor (or designate) shall:

- Designate responders and proceed to the scene of the spill.
- The responders (including the Facility Supervisor if necessary) shall attempt to stop further spillage and contain the spilled material if safe to do so.
- Once under control, shall interview the individual who discovered spill. Noting name, time discovered, and details on how the spill occurred, any actions taken by the individual to stop the spill.

- Completely document the spill by completing the Spill Report Form and contacting the 24hour Spill Line immediately (see Section 4.2 for Spill Reporting requirements).
- Within 30 days ensure a written detailed report is prepared for submittal to required regulatory agencies (see Section 4.2).

Responders shall:

- Position themselves upwind of the spill.
- Determine what has been spilled.
- Consult the Material Safety Data Sheet (MSDS) for the product in order to determine the appropriate personal protective equipment and to understand the physical properties of what was spilled.
- If the spilled substance is flammable (Gasoline or Jet Fuel), eliminate all ignition sources and shut off machinery in the area.
- If save to do so, take actions to ensure that the leak or spill has been stopped at the source (i.e.: shut off valves, reconnect hoses, etc.).
- Contain spill with appropriate material and equipment (i.e.: spill response kit, etc.). Refer to the MSDS if this is a controlled substance. Pump large spills into barrels or other suitable container as available. **Ensure that grounding or bonding cables are used for all flammable product transfers.**
- Control access to the spill area and keep all bystanders away. 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.
- If safe to do, keep spilled material out of waterways. Use aluminium/non-sparking shovels to dig trenches or make soil and sand barriers or utilize the placement of socks as barriers
- Upon completion of clean-up, place contaminated absorbent and associated materials into steel pails or drums for removal from the site.
- If a spill has entered flowing water, take a sample immediately upstream of the spill and downstream (e.g.: 50m, 150m and 500m from spill)

The following table demonstrates the spill supplies that may be utilized during the response to a spill on site (items not stored in spill kits and kit replacement items are stored in the generator building):

Incident	Spill Supplies	Use
Wet Spill	Drums, with removable lids, that contain bailers	For manual removal of large liquid spills Empty drums
	Folded sweeps and white rolls	Skimming of gas or diesel from water body
	Socks, peat moss	Containment of wet spill on land
	Pads, rolls, bags of dry absorbent	Cleanup of wet spills
Punctured Drum	Overpack (plastic drum) Plug 'n Dyke	Either: 1) place overpack overtop of leaking drum, lay overpack and drum on its side, then flip upright 2)use Plug 'n Dyke or other plugging compounds to seal and stop leak
Dry Spill	Plastic sheet (roll), mallet, spikes, knife	Covering dry spills to protect from wind and rain

If necessary ask for help – refer to the "EMERGENCY CONTACTS" list. Often the best thing to do is to wait for others with the appropriate training and/or equipment to arrive. Acting inappropriately can often be dangerous to yourself, others or to the environment.

Implement any necessary cleanup and/or remedial action in a safe manner; this may be coordinated and or conducted by a third party consultant, if necessary.

Report the spill as per Section 5 of this Plan once it is safe to do so. Do not delay reporting as there are legal requirements in this regard.

5.2 Examples of Spill Scenarios

5.2.1 Spill of Fuel from Metal Drums, 10,000 L Fuel Bladders, or Fuel Tanks on Tundra

A puncture or rupture of containers containing liquid fuels should initially be assessed for risk of ignition. Sources of ignition will be extinguished or isolated from the spill area if safe to do so. Using appropriate personal protective equipment as described in the MSDS efforts should be undertaken to plug punctures with appropriate material from the spill kit (plugging compound or other improvised materials). Ruptures or holes should be high-centered to stop further spillage of fuel. Absorbent

materials should be used to absorb spilled fuel. A containment berm should be built from soil or snow or absorbent socks and/or tarps to contain a large spill.

Remove the spilled products using absorbent material or soil, gravel or snow, placing all recovered spilled fuel and spent absorbents into appropriate containers (metal cans, pails or drums in good condition). Again, all fuel skimmed or wicked off of the ground is to be disposed of, in appropriate steel containers. High-centered ruptures will be used as a point of entry for manually-operated fuel transfer pump suction tubes, and remaining fuel is removed to a sound drum. Small amounts of contaminated soil, vegetation or gravel is removed and placed into sealable steel drums and or pail and then disposed of appropriately. Large areas of spilled product on the ground are only to be remediated after consultation with ARC environmental personnel, regulators, etc.

Before commencing any removal of soil, gravel or vegetation regulatory agencies will be contacted.

Report the spill.

If spill of significant volume occurs at one of the fuel storage tanks or from a 10,000 L fuel bladder attempt to prevent the spread of the fuel if safe to do so and immediately contact ARC personnel to hire assistance with the spill response and clean-up.

5.2.2 Leak of Liquid Fuel from Distribution Lines

A detected leak from a fuel storage tank and/or distribution line assembly is to be initially assessed for risk of ignition. Sources of ignition are to be extinguished or isolated from the leak if safe to do so. If safe to do so, the shut-off valve on the tank and/o distribution line is to be turned off. Absorbent material is placed on the spilled fuel; if spilled onto snow or ice it is scooped up with an aluminium (non-sparking) shovel and stored in an appropriate sealable steel container. Ultimate disposal of these materials is only to be done after consultation with site environmental personnel and the appropriate regulatory agency. Report Spill.

5.2.3 Spill of Liquid Fuel into Lake Water

Never attempt to contain or clean up a spill of gasoline on water. The risk of fire is simply too high. Confinement needs to occur as close to the release point as possible. The collection of liquid diesel or lubricating oil in lake water is attempted with floating booms of petroleum absorbent material, after vapours have dissipated. For larger spills of diesel or lubricating oil, raw liquid can often be removed by skimming and absorbent pads can be used to collect small spills.

Prior to attempting any clean up on water, a site specific safety plan needs to be developed that factors in water safety aspects.

All fuel skimmed or wicked off of the water surface as well as spent absorbent materials must be disposed of, in appropriate sealable steel containers. Ultimate disposal of these materials shall only be done after consultation with site environmental personnel and the appropriate regulatory agency.

Report Spill.

5.2.4 Fire at Fuel Storage Tanks

In the event that a fire occurs at the fuel storage tanks, it is ARC's primary intentions to ensure the safety of the site personnel by allowing the fire to burn. Appropriate third party personnel will be contacted to ensure proper response and clean-up occurs.

Report the event.

5.2.5 Release of Propane

No attempt should be made to contain a propane release.

Water spray can be used to knock down vapours and to reduce the risk of ignition.

Small fires can be extinguished with dry chemical or CO_2.

Personnel shall withdraw from the area immediately upon identifying a leak and shall not return until the leak is stopped and all the vapours have diffused. Contact will be made with the proper agency for disposal instructions of a defective container.

Report the spill.

5.2.6 Spill of Radiologically Contaminated Drill Cuttings

In the event of a spill of any amount of radioactive materials, they will be collected into appropriate storage containers (eg: drums, etc). The site will be remediated as much as practical, meeting/exceeding the minimum necessary abandonment criteria of less than 1µSv/h at a height of 1m above background.

Report the spill.

5.2.7 Spill of Potentially Contaminated/Drill Return Water into a Water Body

In the event of a spill of any amount of potentially contaminated/drill return water into a water body, any activities which are the possible cause will cease until a review of the incident has taken place. Water and sediment samples will be taken and a gamma survey conducted on the effected area. Activities will continue once the General Manager or designate is satisfied with the corrective measures taken.

Report the spill.

6 TRAINING AND PRACTICE DRILLS

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

APPENDICES

APPENDIX I

KIGGAVIK PROJECT

General Manager, Kiggavik Project	Frederic Guerin	Office	306-343-4631
		Cell	306-270-2915
		Home	306-978-7464
Manager, Nunavut Affairs	Barry McCallum	Office	867-793-2000
		Cell	306-262-4636
		Home	902-562-3314
Facility Supervisor	Daniel Zunti	Office	306-343-4524
		Site Sat phone	011-8816-314-67865
		Site Vonage	306-683-9843
		Cell	306-717-0042
Env.& Radiation Protection Supervisor	Kim Sarauer	Office	306-343-4043
		Site Sat phone	011-8816-314-67865
		Site Vonage	306-683-9843
		Cell	306-270-1197
Sr. Project Engineer	Nicola Banton	Office	306-343-4679
		Cell	306-270-2828
		Home	306-384-2277

SPILL - 24 hour report lines

Government of Nunavut 24 hour spill report line	Phone	867-920-8130
	Fax	867-873-6924
	email	spills@gov.nt.ca

WORKERS' SAFETY & COMPENSATION COMMISSION

Iqaluit	Martin van Rooy	Phone	867-979--8527
		Fax	867-979-8501
		Toll Free	877-404-4407
		Toll Free Fax	866-979-8501
Yellowknife		Phone	867-920-3888
		Fax	867-873-4596
		Toll Free	800-661-0792
		Toll Free Fax	866-277-3677
Rankin Inlet		Phone	867-645-5600
		Fax	867-645-5601
		Toll Free	877-404-8878
Incident Reporting Line		24-hour	800-661-0792

SAFETY

RCMP - Baker Lake	Phone	867-793-1111
	Fax	867-793-0123
Air Ambulance (Rankin Inlet)	Phone	867-645-4455

Baker Lake Health Centre		Phone	867-793-2816
REGULATORS			
Environment Canada 24 Hour Duty Officer	Curtis Didham	Phone	867-975-4644
		Cell	867-222-1925
		Fax	867-873-8185
INAC - Water Resources Officer	Andrew Keim	Phone	867-975-4289
		Fax	867-975-6445
INAC - Field Operations District Manager	Peter Kusugak	Phone	867-975-4295
		Fax	867-975-6445
Kivalliq Inuit Association		Phone	867-645-2800
		Fax	867-645-2348
Nunavut Water Board		Phone	867-360-6338
DFO - Habitat Impact Assessment	Joanne Rose	Phone	867-979-8005
		Fax	867-979-8039
ARC - SASKATOON OFFICE			
Manager, Communications	Alun Richards	Office	306-343-4637
		Cell	306-227-3259
		Home	306-343-7833
VP, Engineering and Projects	JP Nicoud	Office	306-343-4566
		Cell	306-341-4636
ARC - MCCLEAN LAKE			
Site Commander		Cell	306-633-7766
Jack Richards		Cell	306-221-2627
Emergency Response Team		Sat Phone	011-8816-314-65773

APPENDIX II

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME		

C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS

F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION	
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION	
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS		

L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

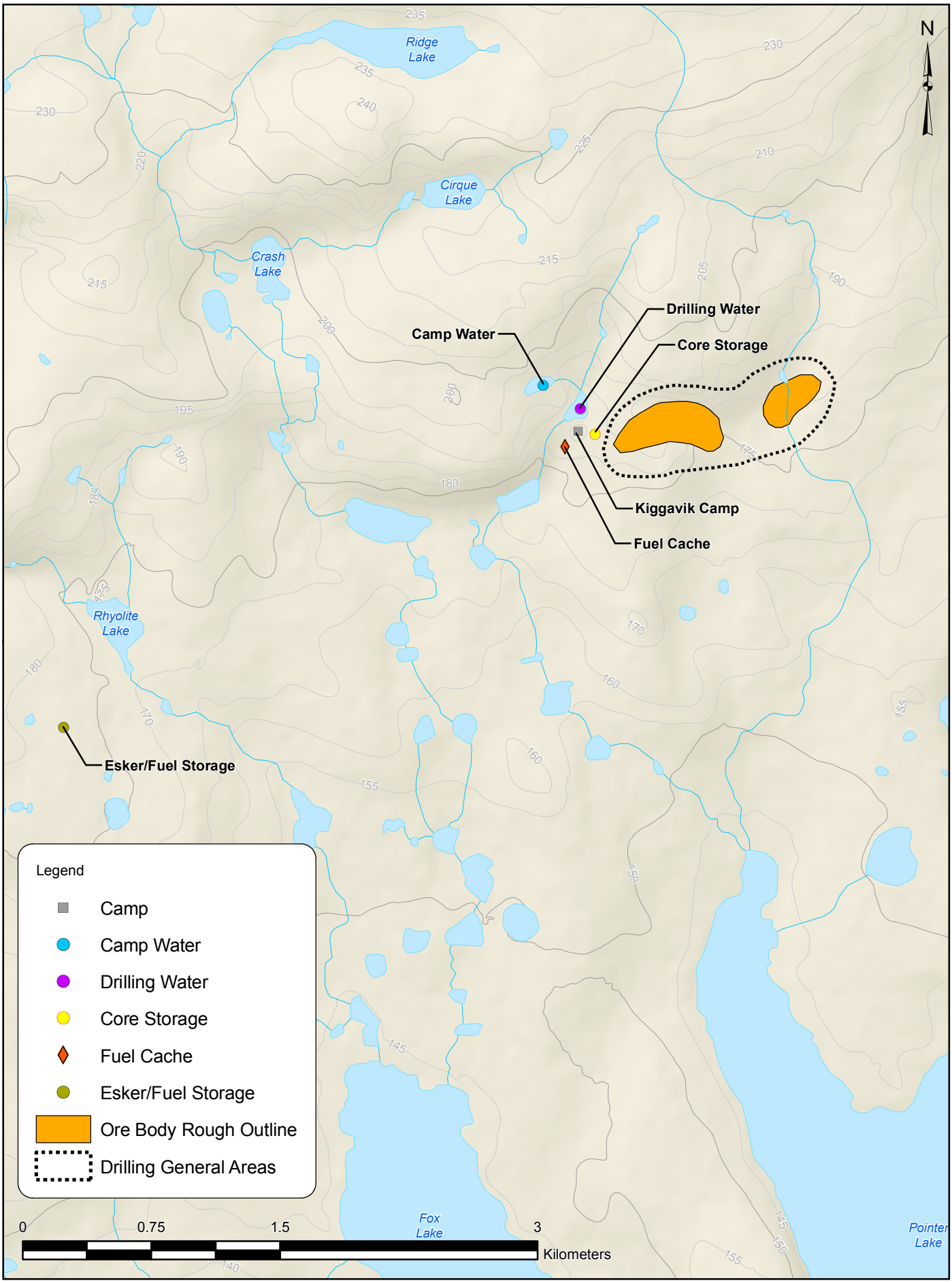
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC

SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN

FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

APPENDIX III



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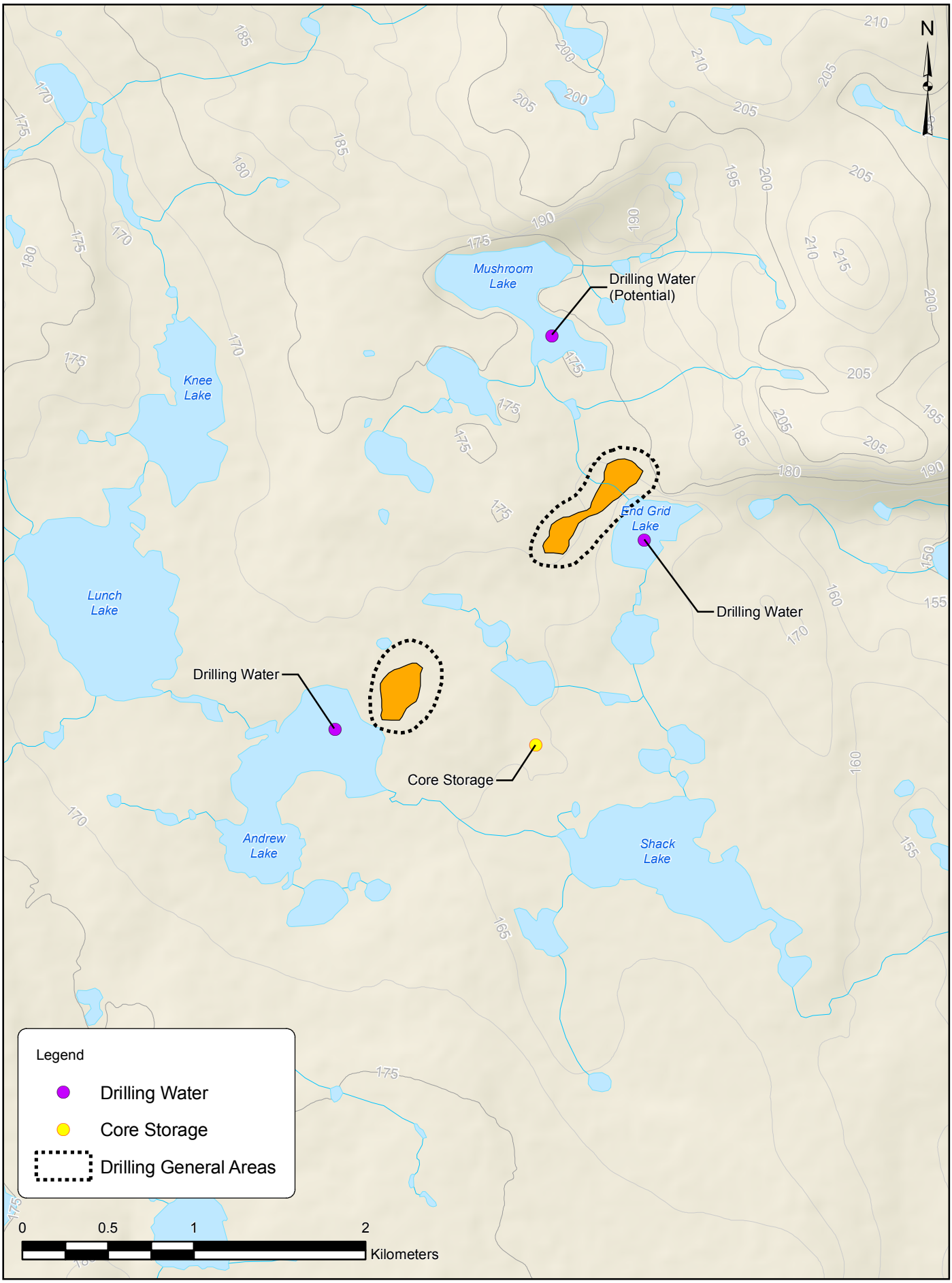

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SISSONS SITE - 2009 SEASON APPENDIX III - B	Creator: CDC Date: 03/17/09 Drawing:KI09A012			