

**5050 Nunavut Limited  
Winter Trail  
Spill and Contingency Plan, 2008**

**Prepared for:**

**Adriana Resources Inc  
1818 – 701 West Georgia St.  
Vancouver, B.C. V7Y 1C6**

**Prepared by:**

**Franz Environmental Inc.  
308 – 1080 Mainland St.  
Vancouver, B.C. V6B 2T4**

---

## TABLE OF CONTENTS

1. Introduction .....	4
2. Winter Trail Description .....	5
2.1 Transit Times .....	5
2.2 Sewage Handling .....	5
2.3 Fuel Handling .....	5
2.3.1 Fuel Types and Quantities .....	5
2.4 Fuel Transportation .....	5
2.4.1 Fuel Storage .....	6
2.4.2 Fuel Transfer .....	6
2.5 Personnel Training .....	6
3. Basic Steps in the Event of a Spill .....	7
3.1 Procedure to Follow in the Event of a Spill .....	7
3.2 Chain of Command .....	7
4. Taking Action .....	10
4.1 Before the Fact: Preventive Measures .....	10
4.1.1 Response Equipment and Proximity .....	10
4.2 After the Fact: Mitigative Measures .....	10
4.2.1 Mitigative Equipment and Proximity .....	11
4.3 Managing Fuel Spills in Various Environments .....	12
4.3.1 Procedure for Spills on Land and Rock .....	12
4.4 Fuel Spills on Water .....	13
4.5 Fuel Spills on Snow and Ice .....	13
4.5.1 Spills on Snow .....	14
4.5.2 Spills on Ice .....	14

---

## LIST OF APPENDICES

Appendix A – Contact List

Appendix B – Material Safety Data Sheets (MSDS)

Appendix C – Spill Report Form

Appendix D – Figures

1-1 Site Location Map

1- 2 2008 Winter Trail Route

## LIST OF TABLES

<b>Table</b>		<b>Page</b>
2-1	Quantities of Fuel to be Transported for the Cat Train	5
3-1	Roles and Responsibilities	8
4-1	Contents of a Regular Spill Kit	11
4-2	General Response Inventory – Camp – 2005	12
4-3	Guide to Required Ice Thickness	15
4-4	Required Ice Thickness for Typical Aircraft Weights AK-68-14-001 Transport Canada Standard	15

## 1. Introduction

5050 Nunavut Limited (5050 Nunavut) was incorporated under the laws of Nunavut and presently holds 100 claims comprising 253,796.89 acres in three areas i.e., All Night Lake, McGregor Lake, and Inuit Owned Lands (IOL). The properties are located 60 and 100 kilometres south of Kugluktuk, Nunavut and are known as the All Night Lake Property, the McGregor Lake Property, and IOL Property (Figure 1-1). Together the properties comprise the Mackenzie Igneous Event Project (the "MIE Project") targeting Ni, Cu,Pt group element (PGE) mineralization and Bear Valley Uranium Project (the "BVU Project") for uranium exploration.

5050 Nunavut is a wholly owned subsidiary of Adriana Resources Incorporated (Adriana) and has its corporate office at Adriana's office in Vancouver Canada. 5050 Nunavut's corporate office address is:

Adriana Resources Inc.  
Suite 1818, 701 West Georgia Street  
Vancouver, BC V7Y 1C6

The principals in each company are:

- Mike Beley, President and Director of Adriana and
- Gordon Addie, President of 5050 Nunavut.

This Spill and Contingency Plan is in support of the single-use, one-way Winter Trail for a Cat Train to transport personnel and equipment from Kugluktuk to 5050 Nunavut's McGregor Lake Campsite. This plan shall be in effect when approval is obtained by the appropriate authorizing agencies, and is subject to revisions as may be necessitated by future programs.

The Cat Train transit program is of low impact. It includes walking a D6M Caterpillar with a sled in tow. The sled will contain the necessary survival gear and a bobcat (construction equipment) as well as an escort of 2 snowmobiles between Kugluktuk and the McGregor Lake Campsite. Once at the campsite, the equipment will be used by the Cat Train crew and camp personnel (who will be flown in via helicopter) facilitate camp preparation and an ice airstrip construction in support of their 2008 exploration activities. For further details regarding the Winter Trail please refer to the Winter Trail Project Description.

Use of the camp, staking & prospecting, exploration (geophys-grd/air) drilling (diamonds/ice, etc.) and bulk fuel storage at McGregor Lake is covered under KIA Land Use License KTL306C016. The License is valid until July 15, 2008 and an application for extension of the permit is presently being prepared. Once at the McGregor Lake Campsite, the Spill and Contingency Plan submitted under KTL306C016 will be adhered to.

The MIE property is remote as is the route chosen for the Cat Train. Thus, no persons other than 5050 Nunavut personnel and various contractor personnel are expected to be affected in the event of an incident. All 5050 Nunavut employees, whether permanent or casual, and program contractors, are required to be trained in 5050 Nunavut policies and procedures prior to engaging in work at the McGregor Lake work site.

5050 Nunavut is aware that planning for an emergency situation is not an option but an obligatory activity. Staff accompanying the Cat Train will be familiar with the Spill and Contingency plan. As well, this Spill and Contingency Plan will accompany 5050 Nunavut personnel during the transit to and from McGregor Lake.

## 2. Winter Trail Description

The winter trail route is outlined in Figure 1-2. It is a single-use, one-way trail extending from Kugluktuk, approximately 100km south to the McGregor Lake Campsite. The transit will begin with the sleds and Caterpillar being transported over ocean from Kugluktuk to the east bank of the Coppermine River. The route then proceeds south, over land to the McGregor Lake camp while passing through the frozen streams and lakes along the way. Once the train arrives at the McGregor Lake Campsite, the components of the train will be used at the Campsite.

### 2.1 Transit Times

The transit will take place in early February or March 2008. Once the appropriate permits are in place, the transport will leave Kugluktuk. Weather permitting; the transit will take approximately 30 hours.

Helicopter support will be provided and the crew will not overnight with the Cat Train. The Cat Train will be secured nightly, and once the Cat Train is secured, staff on the Cat Train (comprising the cat operator and two snowmobile operators) will be transported by helicopter to the McGregor Lake Campsite, returning the following morning.

### 2.2 Sewage Handling

The only activity will be the transportation of the Cat. No industrial waste is anticipated from the activity. The only waste anticipated to be generated is human waste, which will be stored in 5 gallon buckets with lids and will be disposed of at the camp when the Cat Train arrives. This practice will be in full compliance with the waste disposal practices for the camp as outlined in KIA Land Use License KTL306C016. If a spill occurs, the spill containment materials will be stored in drums carried on the sled.

### 2.3 Fuel Handling

Fuel will be required for the caterpillar and for the snowmobiles. This section discusses the fuels, how they will be handled, stored and transferred.

#### 2.3.1 Fuel Types and Quantities

The following table provides the equipment to be used, the type of fuel and the containers the fuel will be carried in.

**Table 2-1**  
Quantities of Fuel to be transported for the Cat Train

Use/Fuel	Number of Containers/ Type	Capacity of Containers
Caterpillar - Diesel	1 double-walled Tidy Tank	100 gal (~380L)
Snowmobiles - Gasoline	2 Jerry-cans	5 gal (~19L)

The appropriate Material Safety Data Sheets are attached in Appendix B of this Plan.

### 2.4 Fuel Transportation

The diesel fuel will be transported in a tidy tank secured to the inside of the sled. The gasoline

for the snowmobiles will be flown in by helicopter daily, as required.

#### **2.4.1 Fuel Storage**

Fuel for the Caterpillar will be transported in a 100 gallon double-walled tidy tank secured to the sled. All rubber seals will be replaced prior to filling the tank, before the Cat Train journey.

Fuel for the snowmobiles will be stored in two 19L Jerry-cans secured to the helicopter. Prior to transit, all containers will be inspected for structural soundness, sealed, and clearly marked.

All containers will be inspected daily during the transit by 5050 Nunavut personnel. Any container noted to be leaking will immediately have all product transferred to an empty drum(s) as per the fuel transfer plan. The leaking container will be carried to the transit destination and disposed of.

A spill kit and drip tray will be carried in the sled during the transit.

#### **2.4.2 Fuel Transfer**

The Caterpillar will be refuelled using a hand pump with a hose fixed to the Tidy Tank. To refuel, the Cat will unhook from the sled, stay on the trail, back up alongside the sled, fuel up, drain the fuel hose into the tidy tank, return to its original location and hook back up. A drip tray will be placed under the hose to protect the ground from any potential drips during transfer and a spill kit will be on hand during refuelling activities and. Snowmobiles will be refuelled in the same way except using the Jerry-cans.

Absolutely **NO REFUELLING** will take place on ice or water bodies; such activities will only occur on land.

### **2.5 Personnel Training**

The obligations and responsibilities of the Spill Contingency Plan awareness, maintenance and preparedness begin with the arrival of employees and contractors. Particularly in the case of new arrivals; supervisors will provide an orientation to acquaint worksite staff with Company policies, procedures, and health and safety issues.

This orientation will include, but will not be limited to:

- location of all fuels and fuel products
- location of WHMIS and MSDS sheets
- location of spill kits and fuel spill equipment
- instruction of the use of spill kits
- instruction on the use of spill equipment
- instruction on the clean-up and disposal of fuel products contained in a potential fuel spill

Staff will be required to familiarize themselves with the Spill Contingency Plan and their respective assigned roles. All transit personnel will be trained in the areas of environmental awareness, site safety, and basic first-aid CPR.

### 3. Basic Steps in the Event of a Spill

For the purposes of flammable liquids, Environment Canada defines a spill as a volume greater than 100L. 5050 Nunavut believes that, in the case of a spill or environmental emergency, it is necessary to react immediately in the most safe and environmentally responsible manner. No spill or incident (leak or drip) is so minor that it can be ignored. The following outlines the chain of communication and responses that will be followed in the event of a spill or other environmental emergency.

#### 3.1 Procedure to Follow in the Event of a Spill

5050 Nunavut has provided the following basic steps of a response plan during the transport of the Cat Train:

1. Ensure the safety of all persons at all times.
2. Find and identify the spill substance and its source, and, if possible, stop the process or shut off the source.
3. Inform the immediate supervisor or his/her designate at once by SAT Phone, so that he/she may take appropriate action. (Appropriate action includes the notification of a government official, if required).
4. Contain the spill or environmental hazard, as per its nature, and as per the advice of the Spill Line and Environmental Advisers, as required.
5. Implement any necessary cleanup or remedial action.

#### 3.2 Chain of Command

The following provides the chain of command to be followed in the event of a spill:

1. Immediately notify one of the following individuals of a spill:
  - a. The President of 5050 Nunavut, Gordon Addie,
  - b. The Exploration Manager, Anthony Kovacs
  - c. The Project Manager, Afzaal Pirzada
  - d. The Camp Manager, John Maclean

**Table 3-1  
Roles and Responsibilities**

Individual	Role Location Contact #s	Responsibilities
<b>Gordon Addie, 5050 Nunavut Ltd. President</b>	Vancouver: 604-629-0250  McGregor Lake Campsite: Numbers to be provided once a communication system is chosen and set up for the camp.	Assume authority over the spill scene and personnel involved.  Activate the Spill & Contingency Plan. Report, or direct Response Co-coordinator (if a different individual) to report, the spill to the NWT 24-Hour Spill Report Line (867) 920-8130.
<b>Afzaal Pirzada Project Manager</b>	Vancouver: 604-629-0250  McGregor Lake Campsite: Numbers to be provided once a communication system is chosen and set up for the camp.	In the absence of the President, assume authority over the spill scene and personnel involved.  Activate the Spill & Contingency Plan. Report, or direct Response Co-coordinator (if a different individual) to report, the spill to the NWT 24-Hour Spill Report Line (867) 920-8130.
<b>Anthony Kovacs, Exploration Manager</b>	Vancouver: 604-629-0250  McGregor Lake Campsite: Numbers to be provided once a communication system is chosen and set up for the camp.	In the absence of the President or Project Manager, assume authority over the spill scene and personnel involved.  Activate the Spill & Contingency Plan. Report, or direct Response Co-coordinator (if a different individual) to report, the spill to the NWT 24-Hour Spill Report Line (867) 920-8130.
<b>John Maclean, Camp Manager Responsibilities:</b>	McGregor Lake Campsite: Numbers to be provided once a communication system is chosen and set up for the camp.	Camp Manger will be the first person to be on site and may assume authority over the spill scene and personnel involved in the absence of the above persons.  Activate the Spill & Contingency Plan. Report, or direct Response Co-coordinator (if a different individual) to report, the spill to the NWT 24-Hour Spill Report Line (867) 920-8130.

Individual	Role Location Contact #s	Responsibilities
<b>Franz Environmental Inc., Environmental Advisers</b>	phone (604) 632-9941 (Vancouver)	Advisor provides expert advice on environmental/logistical cleanup requirements.
	fax (604) 632-9942 (Vancouver)	Each/both may provide assistance in developing any required testing or monitoring program, or in activating an existing program. Each/both may recommend preventive measures.
	Contact: Thomas Franz Carlos da Ponte	

If the spill is minor (such as dripping of fuel during transfer, which can be absorbed by padding, absorbent crystals, etc.) then one of these individuals should be contacted once the destination has been reached.

2. Once 5050 Nunavut senior staff (above) have been notified, they will then notify the field response coordinator or his/her designate to contact the 24-Hour Spill Line, if warranted, as follows:

#### **24 HOUR SPILL LINE**

Phone: (867) 920-8130  
FAX: (867) 873-6924

A "Spill Report Form" (Appendix C) will be filled out as completely as possible before or after contacting the 24-Hour Spill Line by the field response coordinator.

## 4. Taking Action

The following sections outline the 5050 Nunavut's preventative and clean-up procedures to be followed during all 5050 Nunavut activities.

### 4.1 Before the Fact: Preventive Measures

The following actions illustrate the approach of 5050 Nunavut to environmental care, by minimizing the potential for spills during fuel handling, transfer or storage:

1. Fuel transfer hoses with camlock mechanisms are to be used.
2. Carefully monitor fuel content in the receiving vessel during transfer.
3. If, during fuel transfer, drips are noted, clean up drips and minor spills immediately using absorbent pads.
4. Daily inspect drums, tanks and hoses for leaks or potential to leak.
5. Plastic drip pans are to be used at all fuel transfer sites when and where fuel is transferred.
6. Blue absorbent matting is to be used under any stationary machinery (e.g., bobcat, generator-sets and drill engines)
7. Train personnel, especially those who will be operators, in proper fuel-handling and spill response procedures.

#### 4.1.1 Response Equipment and Proximity

Equipment available to aid in spill response and remediation includes:

- A Spill Kit will be on hand at the location of operation. For the purpose of the Cat Train it will be located in the sled. Table 4-1 documents the regular contents of a spill kit.

**Table 4-1**  
**Contents of a Regular Spill Kit**

- Absorbent Pads (Oil, & Diesel)
- Universal Absorbent Pads (Antifreeze & Non-Haz)
- 3" x 4' Absorbent Socks (Oil, Gas & Diesel)
- HD Hazmat Disposal Bags
- Nitrile Gloves

### 4.2 After the Fact: Mitigative Measures

1. Primary steps to take when a spill occurs:
  - a) Ensure your own safety and that of others around you, beginning with those nearest to the scene.
  - b) Control danger to human life, if necessary.
  - c) Identify the source of the spill.
  - d) Notify the Project Manager-Project Geologist, as soon as is practical; they in turn

- 
- notify the Response coordinator (if a different individual).
- e) Assess whether or not the spill can readily be stopped.
  - f) Contain or stop the spill at the source, if possible, by following these actions:
    - i) If filling is in progress, STOP AT ONCE.
    - ii) Close or shut off valves.
    - iii) Place absorbent pads at the foot of the tank or barrel to prevent seepage into the ground or runoff of fuel.
2. Secondary steps to take:
- a) Determine status of the spill event.
  - b) If not reported under 1d), report incident and steps taken to the Project Manager and/or the Project Geologist
3. If a fuel container is damaged and/or leaking, pump fuel from the damaged and/or leaking container into a refuse container.
4. Notify the 24-hour Spill Report Line, and receive further instructions from the appropriate contact agencies listed in Appendix A (e.g., disposal of contaminated soil or ice/snow in sealed containers for removal from site, etc.).
5. Complete and FAX a copy of the Spill Report (Appendix C)
6. Notify permitting authorities and the Lands Manager. If possible, resume cleanup and containment.

#### **4.2.1 Mitigative Equipment and Proximity**

- A helicopter can be dispatched to the Cat Train from the camp site area within minutes.
- Spill-response equipment is available from Kugluktuk, 35 minutes away by air, and or from Yellowknife. Miscellaneous equipment at the 5050 Nunavut camp area (Table 4-2) is available for spill response and cleanup, including hand tools, shovels (earth and snow), fire extinguishers, fuel transfer pumps, water pumps, miscellaneous hoses and fittings.
- Personnel, including first aid attendant and cleanup crews are available for immediate dispatch from the camp site.

**Table 4-2**  
**General Response Inventory at the Camp**

---

Fire extinguishers (valid/recharged) in each structure.  
Water pump, hoses and fittings  
Hammers, shovels and picks of assorted sizes  
Assorted 1 0L plastic pails  
Ice auger  
Plastic garbage bags  
Plastic tarps  
Extra bundles of absorbents  
Fuel-transfer pumps

### 4.3 Managing Fuel Spills in Various Environments

5050 Nunavut conducts activities on a variety of different environments that react differently to fuel spills. As such it is important that environment specific procedures be followed in order to minimize the potential environmental impact. These environments include rock, soil, ice, snow, and water. However, no matter the environment, spills must be managed following a similar set of general steps:

1. **Containment** of spill;
2. **Disposal** of spilled product;
3. **Remediation** of the affected area.

Further advice on how to proceed with managing a spill will be obtained from the 24-Hour Spill Line.

#### 4.3.1 Procedure for Spills on Land and Rock

As soon as possible either during or after the incident, contact the 24-Hour Spill Line (ensuring the government agencies are informed).

The following procedures are to be followed for hydrocarbon spills on land (soil) rock outcrops, boulder fields, etc.

##### **Containment**

Construct a berm of peat, native soil or snow down slope of the seepage or spill.

Inform response coordinator or his/her designate obtains plastic tarp(s) and absorbent sheeting on-site.

Place the tarp in such a way that the fuel can pool for collection and removal (i.e., at the foot of the berm). If there is a large volume of spilled product, pump the liquid into spare drums, and dispose of product by transporting to a solid-waste disposal facility.

Control petroleum-product sheening on vegetation by applying a thin dusting of Spagh-Zorb or other ultra-dry absorbent to the groundcover.

Place absorbent matting on the rock to soak up spilled product, etc. Dispose of saturated

matting in an empty drum, labelling and sealing the drum when it is full.

### **Removal**

Remove the labelled and sealed drums offsite by plane or helicopter to Yellowknife where they are dealt with accordingly.

### **Remediation**

Receive instruction from the appropriate member of the chain of command (Table 3-1) or contact agencies listed in Appendix A regarding collection of the contaminated soil or vegetation, its removal and site cleanup/restoration.

## **4.4 Fuel Spills on Water**

As soon as possible, either during or after the incident, contact the 24-Hour Spill Line (ensuring the government agencies are informed).

It is important to limit immediately the extent of spills on water. The following is the procedure to be implemented when a spill incident occurs:

### **Containment**

If the spill is **small** enough to be controlled by absorbent pads or a boom, deploy hydrophobic (water repellent) absorbent pads (blue matting) on water. Hydrophobic pads readily absorb hydrocarbons.

Containment booms should be deployed on the water surface to "fence in" the spill area gradually and to prevent it from spreading. This is done by encircling the spill with the boom. Absorbent booms will then be deployed to manage any hydrocarbon that may have escaped containment. Keep in mind that environmental factors such as high winds and wave action can adversely affect attempts at spill cleanup.

If the volume of the hydrocarbon spill is so great that it cannot be absorbed by the hydrophobic absorbent pads and or booms, the contained hydrocarbon will be pumped into refuse drums.

### **Removal**

Once a boom is in place, a skimmer may be brought on-scene to aid in capture of the hydrocarbon; once captured, the product should be pumped to the empty refuse drums and held for disposal.

### **Remediation**

Receive instruction from the appropriate member of the chain of command (Table 3-1) or contact agencies listed in Appendix A regarding collection of the contaminated soil or vegetation, its removal and site cleanup/restoration.

## **4.5 Fuel Spills on Snow and Ice**

As soon as possible, either during or after the incident, contact the 24-Hour Spill Line (ensuring the government agencies are informed).

Hydrocarbons spilled on snow behave much differently than hydrocarbons spilled on ice. As a

result, the following two sections provide information and direction on what to do in these two different scenarios.

#### **4.5.1 Spills on Snow**

By its nature, snow is an absorbent, and fuel spilled on snow is collected with relative ease, e.g., by shovel, in the case of small spills.

##### **Containment & Removal**

Assess the nature of the spill. Necessary equipment might include shovels, plastic tarp(s), and empty drums.

Shovel or scrape contaminated snow and deposit in empty refuse drums.

If the spill is more extensive, build peat-bale berms or compacted-snow berms. Place absorbent pads behind the berm and secure them in place with more snow. The snow with the absorbent pads inside will serve to contain the flow of the spill. Continue this process until the horizontal flow has been contained.

Once contained, any liquid can be pumped into a refuse drum. Snow and absorbent pads should also be contained in refuse drum after excess liquid has been removed.

##### **Remediation**

Receive instruction from the appropriate member of the chain of command (Table 3-1) or contact agencies listed in Appendix A.

#### **4.5.2 Spills on Ice**

Before work (e.g. spill management) or travel can occur on an ice surface, the ice has to be the required thickness according to safety standards (Table 4-3 and Table 4-4).

##### **Containment**

Spills on ice are handled in similar fashion as those on snow. However, as ice presents the potential danger of immediate access to water, care must be taken to respond quickly to such spills. Should fuel seep or flow through cracks or breaks in the ice, despite all precautions, assistance should be sought immediately.

Construct a compacted-snow berm around the edge of the spill area.

##### **Removal**

Although hard ice will retard or prevent fuel entry to the receiving waters below, all contaminated snow and ice, as well as objects embedded in the ice (such as gravel) must be scraped from the ice surface, placed in refuse drums, and disposed of in an appropriate manner.

##### **Remediation**

Receive instruction from the appropriate member of the chain of command (Table 3-1) or contact agencies listed in Appendix A.

**TABLE 4-3**  
**Guide to Required Ice Thickness**

Weight		Ice Thickness for Travel	for Ice Thickness for Stationary Loads
242,500lb.	(12 1t)	50 inches (127cm)	90 inches (229cm)
154,000lb.	(77t)	40 inches (102cm)	70 inches (178cm)
100,000lb.	(50t)	32 inches (81cm)	60 inches (152cm)
55,000lb.	(28t)	25 inches (64cm)	43 inches (109cm)
22,000lb.	(11t)	15 inches (38cm)	30 inches (76cm)
17,600lb.	(9t)	14 inches (36cm)	24 inches (61cm)
7,700lb.	(4t)	10 inches (25cm)	18 inches (46cm)

**Expressed in inches and centimetres.**

**Weights and ice thickness measures rounded to nearest whole.**

Table 5-2 below presents a numerical summary of the Transport Canada (1974) required fresh water ice thickness versus aircraft load from the AK-68-14-001 standard.

**Table 4-4**

**Required Ice Thickness for Typical Aircraft Weights  
AK-68-14-001 Transport Canada Standard**

Weight			Required Fresh-Water Ice Thickness	
Lb	kg	kN	M	in
10 000	4 545	44.5	0.33	13
30 000	13 640	133.5	0.58	23
67 000	30 400	300.0	0.90	35.5
135 000	61 360	600.0	1.27	50
800 000	364 000	3 570.0	3.20	126

**Source: Winter Operations Report 1995/96, Kennecott/Aber, Lac de Gras, by 669107 Alberta Ltd.**