



# FUEL MANAGEMENT PLAN BAFFIN GOLD PROPERTY KIVALLIQ ENERGY CORPORATION

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## 1. Introduction

This Fuel Management Plan (FMP) shall be in effect from June 1, 2017 and has been specifically prepared for the Baffin Gold Property. The Baffin Gold Property is located 260 kilometres southwest of Clyde River and 360 kilometres northwest of Qikiqtarjuaq in the Qikiqtani Region of Nunavut.

The purpose of this Fuel Management Plan is to ensure that the storage, transportation and handling of fuel and chemical materials is done in a manner that is environmentally sound and safe to personnel and contractors. A copy of this plan will be kept in the office at site and at the head office in Vancouver. Copies of this plan may be obtained from Kivalliq Energy Corporation.

This Fuel Management Plan should be used in conjunction with other property plans and best management practices. Other plans at the Baffin Gold Property include:

- Abandonment and Restoration Plan
- Emergency Response Plan
- Environmental and Wildlife Management Plan
- Field Safety Manual
- Spill Contingency Plan
- Waste Management Plan

### 1.1. Corporate Details

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### 1.2. Project Description

The Baffin Gold Property on Baffin Island in the Qikiqtani Region of Nunavut consists of 15 prospecting permits, 6 mineral claims and two Mineral Exploration Agreements (MEA's) with Nunavut Tunngavik Inc. (NTI) on Inuit Owned Land Parcel BI-35. The property is located 260 kilometres southwest of Clyde River and 360 kilometres west-northwest of Qikiqtarjuaq, measures approximately 160 kilometres in an east-west direction by approximately 30 kilometres north-south and comprises a total area of 408,981.6 hectares.

All prospecting permits, mineral claims and the MEA's are contiguous and the property extends north, south, east and west between latitudes 68.375° and 68.75° North and longitudes 70.5° and 74.5° West in NTS map areas 027 B/05, 027 B/12, 027 B/11, 037 A/06, 037 A/07, 037 A/08, 037 A/09 and 037 A/10 (UTM coordinates: 7,584,000mN to 7,615,000mN and 520,500mE to 622,500mE, NAD83, Zone 18 and 7,586,000mN to 7,628,500mN and 377,500mE to 439,500mE Zone 19).

The work proposed for the 2017 exploration program consists of low-impact activities including: prospecting, geological mapping, rock and soil/till sampling, airborne geophysics, ground geophysics, and fuel transport (fixed wing).

Kivalliq Energy intends to utilize Commander Resources Ltd.'s (Commander) existing Dewar Lakes Camp (Permits Pending) on Crown lands administered by INAC to facilitate the program. The camp is located at 68°37'59" N, 71°06'38" W and operated seasonally from 2001 to 2011 but has been unoccupied since 2012. In June 2017, Commander will mobilize a crew to rehabilitate the camp and prepare it to accommodate field personnel. As the permittee, Commander has a separate Fuel Management Plan in place for the Dewar Lakes Camp that is consistent with this Kivalliq Energy FMP document.

Due to the size of the property Kivalliq is permitting two temporary fly camps to accommodate workers and provide effective daily access to and from priority target areas that are remote from the Dewar Lakes camp location. The proposed Malrok Fly Camp will be located adjacent to Malrok Lake on IOL BI-35 on Inuit Owned Lands administered by QIA at 68° 30' 06" N Lat., 72° 27' 08" W Long. The proposed Tuktu Fly Camp will be located on Crown lands proximal to the Fox-B Airstrip and adjacent to Nadluardjuk Lake at 68° 37' 10" N Lat., 73° 12' 45" W Long.

The temporary fly camps will accommodate up to 15 people and will be comprised of: 1 kitchen tent, 1 office tent, 1 dry tent, 1 utility tent, 5 supplementary sleep tents, a Pecto or outhouse latrine facility, a portable fuel-fired incinerator and a small generator shed. The structures will consist of a combination of WeatherPort vinyl tents, canvas prospectors' tents and small plywood structures. These camps will be fully closed and dismantled completely once exploration activities cease. The sites will then be reclaimed and restored to their original state. Full details regarding the temporary fly camps can be found in the "Project Description and Work Plan".

### 1.3. Applicable Legislation and Guidelines

Acts, Regulations, and Legislation that applies to the storage, handling and transport of fuel include but are not limited to:

#### 1.3.1. Federal

- National Fire Code of Canada (Federal)
- Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations
- Federal Aboveground Storage Tank Technical Guidelines
- CCME Environmental Codes of Practice for Underground and Aboveground Storage Tank Systems
- Transport of Dangerous Goods Act
- The Workplace Hazardous Materials Information System (WHMIS)
- Workers' compensation Board
- Canadian Environmental Protection Act
- Fisheries Act
- Environmental Protection Act

- Guidelines for Spill Contingency Planning, INAC
- Draft Fuel Storage and Handling Guidelines, April 2009, Indian and Northern Affairs Canada - Nunavut

### 1.3.2. Territorial

- Fire Prevention Act
- Nunavut Waters Act
- Nunavut Surface Rights Tribunal Act
- Draft Recommended Best Practices for the Storage and Handling of Petroleum and Allied Petroleum Products on Federal Crown Lands in Nunavut
- Nunavut “Guideline for the General Management of Hazardous Waste”
- The Mine, Health and Safety Act and Regulations (Nunavut)
- The NWT and Nunavut Safety Act, the Occupational Health and Safety Regulations

## 2. Training

Proper use and monitoring is paramount to safe fuel storage and handling. Personnel that will be tasked with handling and inspecting will be required to receive proper and adequate training. This training will include, but not be limited to the following areas:

Operations/Maintenance  
 Spill Response  
 WHMIS

## 3. Fuel Inventory

Diesel, jet fuel, propane and gasoline will be stored at the Baffin Gold Property. These fuels must be stored in a manner that minimizes risks to the environment, personnel/contractors and camp, while minimizing and preventing the potential impact of infrastructure developments. Fuel will be transported by air and stored in drums.

Kivalliq Energy has applied for authorization to cache 60 drums of fuel at two temporary fly camp locations.

This will include:

- 23 - 205 L drums of diesel
- 25- 205 L drums of Jet fuel
- 2 - 205 L drums of gasoline
- 10 - 100 lb. cylinders of propane

Small temporary fuel caches of 3 to 9 drums may be established for daily use to support remote exploration activities such as airborne surveying or reconnaissance rock or soil sampling programs. Spill kits are located at every fuel cache. Kivalliq endeavors to consume a majority of the cached fuel by the end of each season. Please refer to the “Spill Contingency Plan” for more information.

A complete inventory of all fuel and hazardous materials on site will be recorded at the beginning and end of seasonal operations. The Camp Manager will be responsible for daily inspections of the fuel berms and the monitoring, tracking and recording of fuel inventories while operations are active.

#### 4. Storage and Secondary Containment

To support operations at Kivalliq's temporary fly camp facilities, limited capacity fuel caches (up to 60 drums) are required. These fuel caches will be established and operated in accordance with this Fuel Management Plan and Kivalliq Energy's Spill Contingency Plan.

- All fuel drums will be stored in secondary containment berms.
- All secondary containment berms will be capable of holding 110 percent of the volume of the largest fuel reservoir that is housed within the secondary containment.
- All secondary containment will be of sufficient height and depth to hold any potential spill or failure.
- Secondary containment berms will be made of material (Arctic Grade) that is sufficiently durable to withstand Nunavut's climate and the natural terrain.
- Secondary containment berms will be equipped with hydrocarbon filtration systems (rain drains) to safely remove water that is collected inside the berms.
- Secondary containment berms will be inspected daily during operations.
- Within the secondary containment berms fuel drums will be stored in rows on their sides with bungs facing at the 3:00 and 9:00 position.
- Propane cylinders will be stored standing up and away from any potential sources of ignition.
- All drums, tanks, valves, regulators and hoses will be regularly inspected for cracks or leaks.
- Drummed fuel used for heating tents will be placed in secondary containment.
- All fuel storage sites will be located a minimum of 31 metres from the normal high-water mark of any water body and will be inspected regularly.
- Spill Kits will be placed and will be easily identifiable with clear signage at each fuel storage site.
- "NO SMOKING" signs will be erected at each fuel storage area.
- Smoking, open flame and any potential sources of ignition are prohibited within 31 metres of any fuel storage site.
- Empty fuel drums will be removed from site regularly.

Chemicals materials that may be located on the Baffin Gold Property include small amounts of hydrochloric acid, cleaners, batteries, electronics, fluorescent light bulbs/tubes, motor oil and hydraulic oil. Materials will be stored in their original containers.

The small supply of motor oil and hydraulic oil will be located in the utility tent at the temporary field camp. They will be kept in a drip tray with a spill kit nearby. Hydrochloric acid is used for core logging in very small amounts (<0.5 litre) and will be kept in a sealed container in the core shack. Cleaners (solvents) will be kept in a designated area in their original containers. Cleaners, batteries and fluorescent light bulbs/tubes will be kept in their original containers.

Please refer to the “Spill Contingency Plan” for MSDS sheets that accompany these materials and the “Waste Management Plan” for additional information.

## 5. Handling, Transfer and Transportation

Fuel will be transported to the property via fixed-wing aircraft in accordance with the regulations outlined in the Transportation of Dangerous Goods Act and Transport Canada Aviation legislation. Empty drums will be removed from the property regularly and shipped to an authorized facility for recycling or disposal.

Manual and electric pumps will be used for the transfer of petroleum products. Smoking, sparks, or open flames are **prohibited** in fuel storage and re-fueling areas at all times. A spill kit will be placed with clear signage in all areas of fuel storage and re-fueling. When re-fueling from drums those drums will be placed upon platforms underlain by a secondary containment.

Preventative mitigation measures include:

### Handling and Transfer

- Fuel transfer hoses with cam lock mechanisms to prevent leakage are used.
- Fuel absorbent pads are placed appropriately to protect from drips and spills.
- Personnel will carefully monitor fuel content in the receiving vessel during transfer and always have absorbent pads available while transferring fuel.
- Any drips or leakages are cleaned immediately.
- All operating personnel will be trained in proper fuel handling and spill response procedures.
- Smoking, open flame and any potential sources of ignition are prohibited within 31 metres of any fuel storage site and fuel transfer locations.
- “NO SMOKING” signs will be erected at each fuel transfer area.
- Equipment maintenance and servicing will be conducted in designated areas. Equipment will be underlain by absorbent pads and spill trays for lubricant changes.

- Funnels will be used to reduce the potential for spillage.
- Waste oils and fluids will be collected in sealed 20 litre pails and will be labelled appropriately and stored in secondary containment berms.
- Empty fuel drums will be removed from site regularly.

Please refer to Kivalliq Energy's Baffin Gold Property "Spill Contingency Plan" in the event of a spill.

## 6. Signs and Labels

All drummed fuel will be clearly labeled in accordance with the Workplace Hazardous Materials Information System (WHMIS) which includes the name of the company and the type of fuel contained within. Signs will be erected at each fuel cache with the same information. "NO SMOKING" signs will be erected at each fuel cache and fuel storage area.

## 7. Inspections

The Camp Manager will be responsible for daily inspections of the fuel berms and the monitoring, tracking and recording of fuel inventories while operations are active. Secondary containment berms will be inspected for signs of punctures, failures, leaks, etc. Drums will be inspected for proper storage, leaking bungs, cracks and punctures. Any issues noted will be remediated immediately.

## 8. Spill Kits

A spill kit capable of addressing potential spills (based on type, location and volume of fuel cache) shall be located at each fuel cache, storage area and re-fueling station. Refer to the "Spill Response Plan" for more information.