II. SPILL RESPONSE ACTION PLAN

SPILL RESPONSE SEQUENCE

1. REPORT ALL SPILLS TO:

Project Manager	or	Phone: (604) 608-2557
Senior Project Geologist		Phone: (604) 608-2557
Camp manager		Phone: (604) 608-2557

Note: Telephone numbers for the camp change year to year, but current numbers can be obtained through the Vancouver office number listed above.

The reporting requirement applies to all spills: on land, on water and on ice.

The reporting requirement applies equally to all substances covered by this contingency plan; fuels, hydraulic oil, lubricants, and waste oil.

All reports by telephone must be followed with a fax of the completed report form (see Appendix D for copies) to the number indicated on the reporting form.

Reporting and notification described below must be made by the first observer of the spill of the observer's superior immediately upon the spill being under control, or on failure to gain control of the situation.

2. ALERT Cumberland Personnel:

SPILL OBSERVER
IMMEDIATE SUPERVISOR or Meadowbank Camp manager

- Meadowbank Project Manager
- Contractors (clean up)

3. NOTIFY AGENCIES:

24 HOUR NWT SPILL REPORT LINE	PHONE	(867) 920 8130
	FAX	(867) 873 6924
KIVALLIQ INUIT ASSOCIATION		(867) 645 2810
DIAND – Rankin Inlet		(867) 645 2831
Iqaluit		(867) 979 4405
Environment Canada – Yellowknife		(867) 920 6060
Fisheries and Oceans Canada		(867) 645 2871
GNWT DRWED – Rankin Inlet		(867) 645 5067

4. RECORD THE FACTS Use Spill Report Form from Appendix D

NOTE:	If the On-Scene Coordinator is not available when a spill is detected then the spill must be Reported directly to NWT 24-hour spill report line without delay.

III. SPILL RESPONSE - FUEL TYPE

The procedure of dealing with a spill is dependent on the type of material spilled. The following sheets summarize the correct procedures for dealing with spills of the materials transported and stored at the Meadowbank project site - gasoline, Jet A and Jet B aviation fuel, P-50 diesel (stove oil), propane and acetylene. Other petroleum products such as lube oil and waste oil will only be present in small amounts, but product information sheets are included for all these products in Appendix A..

PRODUCT GUIDES

The materials included in this Plan can generally be divided into two categories:

- Flammable immiscible liquids
- Flammable compressed gases

A-1. Flammable Immiscible Liquids

These substances are all hydrocarbon-based and will ignite under certain conditions. Gasoline and aviation fuel pose the greatest fire (and safety) hazard and usually cannot be recovered when spilled on water. The remaining materials generally do not pose a hazard at ambient temperatures. They are all insoluble, float unless mixed into the water column and can be recovered when safety allows.

Flammable Immiscible Liquids

Gasoline

Jet A

Turbo B

Diesel Fuel

Waste Oil

Lube Oil

GASOLINE SPILL RESPONSE ACTIONS

CONSIDER ACTION ONLY IF SAFETY PERMITS

GASOLINE FORMS VAPOURS THAT CAN IGNITE AND EXPLODE

NO SMOKING

Refer to Product Guide below for:
- Physical/Chemical Properties
- Response to Fires
- First Aid

- ELIMINATE IGNITION SOURCES
- STOP SOURCE OF GASOLINE IF SAFE TO DO SO

ON LAND
- Block entry into waterways by diking with earth, snow or other barrier(s).
- Do not contain spill if there is any chance of igniting vapours.
- On shop floors and in work/depot yards, apply particulate sorbents.
- On tundra use peat moss and leave to degrade if feasible to do so.

ON SNOW & ICE
- Block entry into waterways by diking with snow or other barrier.
- Do not contain spill if there is any chance of igniting vapours..
- In work/depot yards, apply particulate sorbents.

ON MUSKEG
- Remove pooled gasoline with pumps, if safe to do so.
- Do not deploy personnel and equipment on marsh or vegetation.
- Low pressure flushing can be tried to disperse small spills.
- Burn CAREFULLY only in localized areas, e.g., trenches, piles or windrows.
- Do not burn if root systems can be damaged (low water table).
- Minimize damage caused by equipment and digging.

ON WATER
- Contain or remove spills ONLY AFTER VAPOURS DISSIPATE.
- Use booms to protect water intakes.
- Skimming can be tried once light ends evaporate.

STORAGE/TRANSFER

- Store closed, labeled containers in cool, ventilated areas away from incompatible materials.
- Electrically ground containers and vehicles during transfer.

DISPOSAL

- Segregate waste types, if necessary.
- Place contaminated materials into marked containers.
- Consult camp manager on transportation and disposal requirements.

GASOLINE

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Colourless Liquid (can be dyed)	FLASH POINT:	-50° C
ODOUR:	Gasoline / Petroleum	FREEZING PT:	-60° C
SOLUBILITY:	Insoluble	VISCOSITY:	Not viscous (< 1 cSt)
VAPOUR DENSITY:	Will sink to ground levels	SPECIFIC GRAVITY:	Floats on water (0.7 - 0.8)

SAFETY MEASURES

WARNINGS

- Vapours form instantaneously, and are heavier than air.
- Empty containers can contain explosive vapours.
- Vapours can travel to distant sources of ignition and flash back.
- Eye contact causes irritation.
- Material can accumulate static charges.
- Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.

PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile and Viton are suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC).
- Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA.

PRECAUTIONS

- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.

- Eliminate ignition sources.
- Restrict access and work upwind of spill.

RESPONSE TO FIRES
CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA in confined areas.
- Shut off fuel supply.
- Extinguish fire with CO_2, dry chemical, alcohol foam or water fog. Use water to cool containers exposed to fire.

JET A – SPILL RESPONSE ACTIONS

CONSIDER ACTION ONLY IF SAFETY PERMITS!

Refer to Product Guide below for:
- Physical/Chemical Properties
- Response to Fires
- First Aid

- ELIMINATE IGNITION SOURCES
- STOP SOURCE OF JET A IF SAFE TO DO SO

ON LAND
- Do not flush into ditches or drainage systems.
- Do not contain spill if there is any chance of igniting vapours.
- Block entry into waterways and contain with earth, snow or other barrier.
- Remove small spills with sorbent pads.
- On tundra use peat moss and leave in place to degrade, if practical.

ON SNOW & ICE
- Block entry into waterways and contain with snow or other barrier.
- Do not contain spill if there is any chance of igniting vapours.
- Remove minor spills with sorbent pads and/or snow.

ON MUSKEG
- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled Jet B with pumps and skimmers if it is safe to do so.
- Flush with low pressure water to herd Jet B to collection point.
- Burn only in localized areas, e.g., trenches, piles or windrows.
- Do not burn if root systems can be damaged (low water table).
- Minimize damage caused by equipment and excavation.

ON WATER
- Contain spill ONLY AFTER VAPOURS DISSIPATE.
- Use spill containment boom to concentrate slicks for recovery.
- Do not deploy personnel and equipment onto mudflats or into wetlands.

STORAGE/TRANSFER
- Store closed, labeled containers outside away from flammable items.
- Electrically ground containers and vehicles during transfer.

DISPOSAL
- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult camp manager on disposal procedures.

JET A

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White or Pale Yellow liquid	FLASH POINT:	38° C
ODOUR:	Gasoline / Petroleum	FREEZING PT:	-50° C
SOLUBILITY:	Negligible	VISCOSITY:	Not viscous (<7 cSt)
VAPOUR DENSITY:	Will sink to ground levels	SPECIFIC GRAVITY:	Floats on water (0.81)

SAFETY MEASURES

WARNINGS

- Vapours form instantaneously, and are heavier than air.
- Low-lying areas can trap explosive vapours.
- Vapours can travel to distant sources of ignition and flash back.
- Eye contact causes irritation.
- Material can accumulate static charges.
- inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.

PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile and Viton are suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC).
- Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA.

PRECAUTIONS

- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

RESPONSE TO FIRES
CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA in confined areas.
- Shut off fuel supply.
- Extinguish fire with CO_2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

JET B – SPILL RESPONSE ACTIONS

CONSIDER ACTION ONLY IF SAFETY PERMITS!

Refer to Product Guide below for:
- Physical/Chemical Properties
- Response to Fires
- First Aid

- ELIMINATE IGNITION SOURCES
- STOP SOURCE OF JET B IF SAFE TO DO SO

ON LAND
- Do not flush into ditches or drainage systems.
- Do not contain spill if there is any chance of igniting vapours.
- Block entry into waterways and contain with earth, snow or other barrier.
- Remove small spills with sorbent pads.
- On tundra use peat moss and leave in place to degrade, if practical.

ON SNOW & ICE
- Block entry into waterways and contain with snow or other barrier.
- Do not contain spill if there is any chance of igniting vapours.
- Remove minor spills with sorbent pads and/or snow.

ON MUSKEG
- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled Jet B with pumps and skimmers if it is safe to do so.
- Flush with low pressure water to herd Jet B to collection point.
- Burn only in localized areas, e.g., trenches, piles or windrows.
- Do not burn if root systems can be damaged (low water table).
- Minimize damage caused by equipment and excavation.

ON WATER
- Contain spill ONLY AFTER VAPOURS DISSIPATE.
- Use spill containment boom to concentrate slicks for recovery.
- Do not deploy personnel and equipment onto mudflats or into wetlands.

STORAGE/TRANSFER
- Store closed, labeled containers outside away from flammable items.
- Electrically ground containers and vehicles during transfer.

DISPOSAL

- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult camp manager on disposal procedures.

JET B

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White or Pale Yellow liquid	FLASH POINT:	-20 to -250° C
ODOUR:	Gasoline / Petroleum	FREEZING PT:	-18° C
SOLUBILITY:	Negligible	VISCOSITY:	Not viscous (0.6 cSt)
VAPOUR DENSITY:	Will sink to ground levels	SPECIFIC GRAVITY:	Floats on water (0.78)

SAFETY MEASURES

WARNINGS

- Vapours form instantaneously, and are heavier than air.
- Low-lying areas can trap explosive vapours.
- Vapours can travel to distant sources of ignition and flash back.
- Eye contact causes irritation.
- Material can accumulate static charges.
- inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.

PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile and Viton are suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC).
- Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA.

PRECAUTIONS

- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozones, peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

RESPONSE TO FIRES
CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA in confined areas.
- Shut off fuel supply.
- Extinguish fire with CO_2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.