MELIADINE GOLD PROJECT

FUEL MANAGEMENT AND SPILL CONTINGENCY PLAN

for Water Licences 2BE-MEP0813 and 2BB-MEL0914

November 2010

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
1	14 Jul 2010			Changes made to reflect comments from INAC, DoE – Nunavut, and Environment Canada
2	2 Nov 2010			Changes made to include the Mel East site, licence 2BE-MEP0813

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INITIAL SPILL RESPONSE PRIORITIES

SAFETY FIRST

1. RESPOND QUICKLY

1. Identify the spilled material.
2. Ensure safety of yourself and others.
3. Shut off ignition sources - NO SMOKING.
4. Attend to Injured.
5. Assess the severity of the spill.
6. Call for assistance.
7. **On-site Manager mobilizes Emergency Response Team**.
   Meliadine Camp: 403 451 3236(37)
   Agnico-Eagle Mines Ltd. 416 947 1212
8. Keep unnecessary people out of the area.
9. Wear impervious clothing, goggles, and gloves.
10. Approach spill from upwind IF **SAFE TO DO SO**.
11. Stop product flow if possible.
12. Contain and recover spill as soon as possible.
13. Notify Henry Kablalik, Resource Management Officer, Rankin Inlet
    KablalikH@inac-ainc.gc.ca, 867 645 2831, fax 867 645 2592
    Notify Peter Kusugak, Field Operations, Iqaluit
    KusugakP@inac-ainc.gc.ca, 867 975 4295, fax 867 979 6645

2. RESPOND SAFELY

1 Do not contain gasoline or aviation fuel if vapours might ignite.
2 Allow gasoline or aviation fuel spills to evaporate.
3 See Appendix A - Product Guides for further information.

3. OBTAIN AND REPORT SPILL DETAILS

NWT Spill Report Forms are in Appendix C of this spill contingency and response plan.

Table: Reportable Spills

Contaminant Type	TDGA Class	Reportable Spill
Explosives	1	Any amount
Compressed Gas (Flammable)	2.1	Any amount from containers greater than 100 L
Flammable liquid	3.1, 3.2, 3.3	100 L
Other	See Appendix I Consolidation of Spill Contingency Planning and Reporting Regulation, Schedule B	

Note: All releases of harmful substances regardless of quantity are immediately reportable where the release is near a water body, is near a designated sensitive environment or sensitive wildlife habitat, poses an imminent threat to human health or safety or poses an imminent threat to a listed species at risk or it critical habitat.

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1.0 INTRODUCTION

1.1 PURPOSE

This Fuel Management and Spill Contingency Plan is designed to promote environmental awareness and safety, as well as facilitate the efficient cleanup of spills as the result of:

1. transportation incidents while in transit between Rankin Inlet and the Agnico-Eagle Mines Limited (AEM) exploration site at Meliadine Lake, and
2. spills during the course of camp and exploration operations involving the following substances:
   - P-50 Diesel
   - Jet A and Jet B turbo fuel
   - Hydraulic Oil
   - Lube Oil
   - Waste Oil
   - Propane
   - other materials hazardous to the safety of personnel and the environment as outlined in Appendix I, Consolidation of Spill Contingency Planning and Reporting Regulations R-068-93, Schedule B

Principal objectives of the Spill Contingency Plan are:

1. To provide readily accessible emergency information to cleanup crews, Meliadine Gold Project personnel, Kivalliq Inuit Association (KIA), and government agencies in the event of a spill.
2. To comply with federal and territorial regulations pertaining to the preparation of contingency plans and notification requirements.
3. To promote the safe and effective recovery of spilled materials.
4. To minimize the environmental impacts of spills to water and/or land.
5. To facilitate the management of wastes according to environmental legislation.

1.2 SCOPE

This Plan addresses the organization of the Meliadine Gold Project spill response and related emergency measures. Alerting and notification procedures and cleanup strategies are outlined along with the duties and responsibilities of key spill response personnel. Emergency contacts are listed for AEM, AEM's contractors, local government agencies, and the Nunavut Power Corporation in Rankin Inlet. Emergency response equipment that is available immediately (should a spill occur) from local freighting contractors, such as M & T Enterprises and the Nunavut Power Corporation in Rankin Inlet is listed. A supplementary document produced by AEM's major surface contractor, M and T Enterprises, titled "Environmental Procedures Manual, Meliadine West Portal Excavation Project" is also in effect for the surface excavation and overland re-supply components of the project.

More information in support of this Transportation Spill Contingency Plan and ensuing spill response actions is provided in the following appendices:

- Appendix A contains summaries of physical / chemical properties and emergency response measures for hydrocarbon substances to be transported to the Meliadine exploration camp;

- Appendix B contains an up-to-date inventory of spill response equipment and kits available at various locations;
- Appendix C contains NT/NU Spill Report Form that is to be used to report spills;
- Appendix D contains a fuel storage monitoring plan;
- Appendix E contains a list of basic components of a Fuel Spill Response Kit;
- Appendix F contains a procedure for the operation of the main fuelling station and the control of vehicular activity in the vicinity of the fuelling station;
- Appendix G lists conditions and equipment required for the Winter Road resupply program;
- Appendix H provides a procedure for the management of a large fuel spill; and
- Appendix I Consolidation of Spill Contingency Planning and Reporting Regulations R-068-93, Schedule B.

AEM will be contracting out the delivery of fuel and lubricants to the exploration site. The contractors will be trained for spill response and are responsible for supplying spill kits that complement this Fuel Management and Spill Contingency Plan. In the event of a spill, the contractor is expected to implement a spill response immediately with AEM's plan serving as a back-up. Appendix G lists the specific spill equipment that must travel with fuel supply vehicles travelling between Rankin Inlet and the Meliadine Lake area bulk fuel tanks.

1.3. SITE DESCRIPTION

1.3.1 General Layout

The Meliadine Gold Project camp is located approximately 25 km north of Rankin Inlet (63° 01' 30" N latitude, 92° 10' 20" West longitude). The area is low arctic tundra with a summer active layer up to 1 m on dry exposed ridges and less than 0.5 m in the high organic humic soils under meadows. The camp, with a capacity for up to 75 persons, is located approximately 5 m above lake level on a peninsula surrounded on three sides by Meliadine Lake. The camp is connected via a 2 kilometre access road to an advanced exploration site where the assembly of a second underground bulk sample will be completed between 2011 and 2013. Bulk fuel storage is provided by double walled fuel vaults in three locations – 3 X 50,000 L of P50 at camp, 3 X 50,000 L Jet A fuel approximately 200 m south of camp, and 11 X 50,000 L P-50 for exploration needs about 500 m west of camp along the access road to the underground bulk sampling site (please see Figures 1 to 3). AEM has been granted the authorization to construct a fuel retention berm that can house as many as 10 –113,500 litre fuel bladders adjacent to the existing main bulk fuel facility (Figure 3). This facility is required required for the upcoming extension of the underground exploration program and is scheduled to be constructed in 2011.

The Discovery Camp[1] for Mel East is located at latitude: 62° 57'36"N, longitude: 91° 55'12"W. It covered an area of less than 1.5 hectares and could previously accommodate approximately 15-20 people. Facilities at the site included a plywood kitchen/dry structure, along with a 16'x24' Weatherhaven office tent and a plywood core shack. Workers were accommodated in five 14'x16' Weatherhaven and two 14'x16' wood framed sleeper tents. The sleeper tents previously housed between two and four people, depending on configuration. The camp had two small plywood storage sheds, a plywood drillers shop, and a plywood generator shed. What remains on site after reclamation are the core shack, core racks, storage shed, an emergency shelter and an outhouse. These are stick-built and will be used while diamond drilling continues on site.

[1] In 2009 and early 2010, the Discovery Camp was decommissioned. Final reclamation of the camp area still requires inspection by the INAC land inspector to approve the work done to date.

The bermed area will be built to present industry standards and to the standards as laid out in the INAC document "Draft Recommended Best Practices for the Storage and Handling of Petroleum and Allied Petroleum Products on Federal Crown Lands in Nunavut" dated March 2009. In particular, the secondary containment provided by the bermed area will be capable of accommodating 110 percent of the bladders and capable of withstanding the harsh climate and rigours of hard use in an industrial context. The berms have been designed and the plans stamped and signed by a qualified engineer. They will have an impermeable liner, 60 mil HPDE Single Texture, sandwiched between two layers of non-woven geotextile for protection. Esker material will sit above and below the protective geotextile layers. The walls will be constructed with esker as well. A&A Technical of Yellowknife is likely to supply and install the liner and geotextile. This company has installed the majority of berm structures in the Arctic.

Servicing of all vehicles is conducted within the shop tents established on the Services Pad near the portal entrance or within the tent shown on the Operations Pad (Figure 1). Best practices will be employed during vehicle servicing including the utilization of spill pans. The tents have shallowly buried sub-floor level liners that will contain any contaminant spills arising from vehicle maintenance. Waste oils, rags, filters and glycol are stored in dedicated waste drums. The waste oil is utilized as heating fuel by an authorized recipient in Rankin Inlet, Nunavut. The waste barrels are temporarily stored on the lined pad at the northwest corner of the Operations Pad (Figure 1). Accumulated hazardous waste will be manifested for transport south to a licensed waste treatment facility. This awaits an individual being trained and authorized by the responsible authorities to manifest hazardous waste shipments to a licensed hazardous waste management facility in southern Canada.

1.3.2 Camp Layout (Figure 2)

Camp heating fuel and generator fuel is supplied from three 50,000 litre double-walled fuel vaults (150,000 litre capacity) at the north edge of camp. A pumping station at this site is used to transfer fuel to drums that are distributed around camp by helicopter in summer and snowmobile in winter. Fuelling spill platforms have recently been installed at the pumping station. Heating and generator fuel is transferred to 200 gallon tanks adjacent to tents that directly feed camp heaters and the generators. All connections to the tents are wrapped in absorbent material to capture any drips. These 200 gallon tanks have all recently been protected by 600 gallon secondary containment vessels and are shown on Figure 2. The fuel pumping station is operated by experienced AEM personnel only. The pumping station and associated hose and piping is inspected regularly and has been in operation since 1997 without major incident. A fuel spill kit is positioned at the pumping station.

Three 50,000 litre double-walled fuel vaults containing Jet A helicopter fuel (150,000 litre capacity) are stationed at the south-east corner of the camp away from other camp facilities. The pumping station here is powered by a gasoline generator. Helicopter pilots and mechanics with appropriate training operate this facility. The station has been in operation since 1997 without major incident. A fuel spill kit is positioned at the pumping station. Variable quantities of drummed Jet B aviation fuel are also stored within the lined area of the operations pad (Figure 1). Drummed fuel (Jet B) is not expected to exceed 100 barrels in 2009/2010. However, a higher number of barrels are presently found at the operations pad as all drummed fuel from the Mel East camp was transferred here as part of the reclamation of that camp. Most of the drummed fuel will be used over the present exploration season.

Camp waste oils are collected at the generator sites (Figure 2) during routine oil changes. The oil changes are conducted employing drip pans for spill control. Waste oils are transferred to designated waste oil drums located at the generator sites. When full, the drums will be transferred to the lined designated waste pad area at the main bulk fuel facility (Figure 3). The waste oils will be delivered periodically to a business in Rankin Inlet where it will be used as heating fuel. Waste oil-stained rags and filters are also collected in dedicated drums that are stored at the main bulk fuel facility prior to transport to a designated hazardous waste treatment centre. This awaits personnel training and authorization by the responsible authorities to manifest hazardous waste shipments to a licensed hazardous waste management facility in southern Canada.

1.3.3 Main Bulk Fuel Facility (Figure 3)

Figure 3 shows the layout of the main bulk fuel facility. The facility consists of 11 - 50,000 litre double-walled fuel vaults (550,000 litre capacity). AEM has been authorized to construct a bermed area to contain 10 x 113,500 litres fuel bladders (Figure 3). The facility will be constructed in early 2011 in preparation for the extension of the underground exploration program that same year. At present, existing storage is sufficient for planned 2010 operations.

A fuelling area lined and bermed to contain any spills was constructed in 2007 adjacent to the facility. This is the most active fuelling area at the site and a comprehensive procedure for the operation of the fuel station is presented as Appendix F. The pump is powered by a gasoline generator. A 60 m hose designed for bulk fuel stations in arctic conditions (Plicord Arctic Flexwing – 2 inch) links the fuelling station to the individual double-walled 50,000 litre fuel vaults. A spill kit and fire extinguishers are stationed at the fuelling station to assist in emergency situations. Only trained personnel operate the fuelling station. The fuelling station is located away from road traffic.

Drummed gasoline for refuelling snowmobiles and one gasoline powered truck is stored within the lined and bermed area south of the fuelling station (Figure 3). Gasoline will be transferred by hand pumps.

1.3.4 Drummed Waste (Figure 1)

Waste oils, filters, rags and other contaminants, such as glycol that are housed in dedicated storage drums are stored within the lined area of the Operations Pad (Figure 1). The area has been constructed with a sub-grade impermeable liner. Waste oils will be periodically transferred to an user in Rankin Inlet. Filters, rags and glycol will be transferred south to a licensed hazardous waste treatment facility during the summer shipping season. This awaits an individual being trained and authorized by the responsible authorities to manifest hazardous waste shipments to a licensed hazardous waste management facility in southern Canada.

1.3.5 Re-supply Route(Figure 4)

Bulk supplies including fuel for the camp and exploration program are re-supplied in winter by overland surface transport from Rankin Inlet. A winter access route licensed under KIA right of way permit KVRW98F149 has traditionally been used to re-supply the exploration activities. A new license (KIA file KVRW07F02) has been granted by the KIA authorizing transport by low-PSI tracked vehicles over frozen terrain between Rankin Inlet and the exploration area. Both of these routes are shown on Figure 4. The new route includes about 6 km of municipal road, and follows mainly ATV trails between the Char River

crossing and the Meliadine Lake camp (Figure 4). The route follows a height of land path minimizing river and stream crossings. It is expected to operate from early November through January when the ground is frozen and snow cover is light. The route authorized by KIA License KVRW98F149 uses a short length of municipal road within town limits before crossing the sea ice of Prairie Bay. The route then crosses tundra and freshwater ice administered by the Kivalliq Inuit Association (KIA) and then the lake ice of Meliadine Lake under federal jurisdiction. During mid-winter and spring, AEM will re-supply the camp using both routes as conditions permit or require. The haul route distance from Rankin Inlet to the Meliadine Gold Project exploration camp is approximately 28 km in both cases.

Equipment required to be carried by vehicles during resupply are listed in Appendix G. Resupply is contracted to M & T Logistics who has completed this work for years without incident. A comprehensive Spill Contingency Plan prepared by NUNA / M & T was filed with Comaplex Minerals Corp that details training of their personnel as well as spill mitigation measures that would be employed during the winter re-supply program. This document is available upon request.

1.3.6 Explosive Magazines (Figure 1)

Explosive magazines are aligned adjacent to the access road between the camp and the portal area. There are 13 magazines; 3 Type 9 magazines of 2,000 kg capacity, and 10 of Type 4 magazines of 11,250 kg capacity each. The layout of magazines is in accordance with quantity-distance tables and has been reviewed by the Mining Inspector. No explosives are presently stored in the magazines but with the extension of the underground exploration program in 2011, the magazines will again be used for explosives storage. The magazines are presently being utilized to store bags of $CaCl_2$ salt used during surface drilling.

1.3.7 Table of Locations

Locations of spill kits and other infrastructure are given below.

Label	ID	Spill Kit	UTM_E	UTM_N	Lat_DD	Long_DD	Lat_DMS	Long_DMS
P1	Operations Fuel Pump, Spill Kit	1	541191	6988462	63.0234	-92.1861	63,1,24	-92,11,10
P2	Aviation Fuel Pump, Spill Kit	1	542026	6988701	63.0255	-92.1696	63,1,32	-92,10,10
P3	Camp Fuel Pump, Spill Kit	1	542050	6989119	63.0292	-92.1690	63,1,45	-92,10,8
G1	Camp Generators, Spill Kit	1	542052	6989081	63.0289	-92.1689	63,1,44	-92,10,8
G2	Core Shack Generator, Spill Kit	1	541935	6988949	63.0277	-92.1713	63,1,40	-92,10,17
G3	Services Generators, Spill Kit	1	539842	6988850	63.0271	-92.2127	63,1,37	-92,12,46
G4	Ore Pad Generator		539980	6989003	63.0284	-92.2099	63,1,42	-92,12,36
G5	Main P-50 Fuelling Generator		541204	6988475	63.0236	-92.1859	63,1,25	-92,11,9
G6	Boart Longyear Generator	1	541882	6988841	63.0268	-92.1724	63,1,38	-92,10,22
Mel-1	MEL-1 Camp Water Source		541909	6989204	63.0300	-92.1718	63,1,48	-92,10,18
Mel-2a	Pump Lake Water Supply - Summer		539916	6987802	63.0177	-92.2115	63,1,4	-92,12,41
Mel-2b	Pump Lake Water Supply - Winter		539993	6987565	63.0155	-92.2100	63,0,56	-92,12,36
WP	Pump Lake Pumping Station - Summer		539925	6987825	63.0179	-92.2113	63,1,4	-92,12,41
WP	Summer Drilling Pump		540107	6988790	63.0265	-92.2075	63,1,32	-92,12,50
WP	Summer Drilling Pump		539790	6988691	63.0257	-92.2138	63,1,28	-92,12,42
WP	Summer Drilling Pump		539895	6988542	63.0243	-92.2117	63,1,23	-92,12,38
WP	Summer Drilling Pump		539960	6988419	63.0232	-92.2104	63,6,23	-91,33,46
W1	Incinerator		542110	6989118	63.0292	-92.1678	63,1,45	-92,10,4

W2	Greywater sump		542046	6989057	63.0287	-92.1691	63,1,43	-92,10,9
W3	Waste Storage		542103	6989122	63.0293	-92.1679	63,1,45	-92,10,5
W4	Waste Oils and Lubricants Pad		541214	6988428	63.0231	-92.1857	63,1,23	-92,11,8
F1	Operations Fuel Vaults		541214	6988484	63.0236	-92.1857	63,1,25	-92,11,8
F2	Aviation Jet A Storage		542031	6988695	63.0254	-92.1695	63,1,32	-92,10,10
F3	Camp P-50 Storage		542050	6989129	63.0293	-92.1690	63,1,46	-92,10,8
F4	Services Fuel Tanks (5000 gallons)		539845	6988850	63.0271	-92.2126	63,1,37	-92,12,45
F5	Jet B drummed aviation fuel		542056	6988693	63.0254	-92.1690	63,1,31	-92,10,8
F6	Services Tent	1	539855	6988856	63.0271	-92.2124	63,1,38	-92,12,45
F7	Services Tent		541876	6988829	63.0267	-92.1725	63,1,36	-92,10,21
F8	Propane Storage		541882	6988936	63.0276	-92.1724	63,1,39	-92,10,20
Label	ID	Spill Kit	UTM_E	UTM_N	Lat_DD	Long_DD	Lat_DMS	Long_DMS
F9	Tool Shed		542022	6989036	63.0285	-92.1696	63,1,43	-92,10,10
F10	Ore Pad Fuel Tank	1	539974	6988996	63.0284	-92.2100	63,1,42	-92,12,36
F11	Redpath Motor Oils		539835	6988843	63.0270	-92.2128	63,1,35	-92,12,27
F11	Gasoline Drums		541186	6988458	63.0234	-92.1862	63,1,24	-92,11,10
E1	Magazines (CaCl Storage)		540518	6988687	63.0255	-92.1994	63,1,37	-92,12,46

Note: UTM Coordinates are NAD83, Zone 15

1.4 Spill Kits and Bladder Repair Kit

Spill kits in bright yellow 200 L containers include:

- basic personal protective equipment including goggles and latex gloves;
- sorbent materials including socks, pillows, pads and granular substances; and
- large plastic bags for containing and transferring contaminated sorbent materials.

Spill kits are located at the sites listed above and are shown of Figures 1, 2 and 3.

Additional sorbent materials for use at refuelling sites for stoves and furnaces throughout camp are stored in the tool sheds at the main camp and within facilities maintained by our Contractors. A spill kit capable of managing a spill of the order of 12,100 litres is a requirement of the KIA Right of Way license KVRW07F02 for all fuel transport vehicles operating on the re-supply route. The contractor has been made aware of this obligation (Appendix G).

A field repair kit will be located at the bladder farm that contains items necessary to perform on-site repairs of punctures, tears, leaks, etc. to the bladders, and this kit will be readily available in an emergency situation.

1.5 Secondary Containment / Spill Response Capacity

All long-term bulk fuel on site is stored in double walled fuel vaults or in drums and bladders within lined and bermed areas. Pumping stations in the camp have operated since 1997 without major incidents. Spill kits are stationed at all pump facilities and they are lined if newly constructed or have been provided with spill platforms.

Facilities constructed since 2007 including maintenance tents, storage tanks, and pumping stations are all protected by buried sub-grade impermeable liners (Figure 1, 2).

The largest active use vessels are the P50 tanks (200 gallon) connected to stoves and furnaces for heating worker accommodations (Figure 2). Piping for these tanks is checked weekly during heavy use winter periods. Sorbent materials are attached to the piping on these tanks to contain drips. All of these tanks were placed within secondary containment vessels in 2009.

Minor spills (<200 L) will be cleaned up by the deployment of sorbent materials which will be collected in barrels and stored on the lined waste storage pad at the main fuel facility (Figure 3) to await shipment to a hazardous waste facility.

Larger spills will be cleaned up by a combination of sorbent materials, and containment and collection in empty 205 L drums on site. Recovered fuels will be disposed of by incineration. Sorbent materials used in such an operation will be collected in barrels and stored on the lined pad adjacent to the operations fuel pump (Figure 2) to await shipment to a hazardous waste facility.

Containment of larger spills is covered in the procedure given in Appendix I which also lists the variety and locations of materials available for spill control. Particular strategies for managing larger spills during re-supply are also detailed in the companion Spill Contingency document filed by M and T Enterprises with Comaplex Minerals Corp. at the time.

1.6 Contaminated Soils

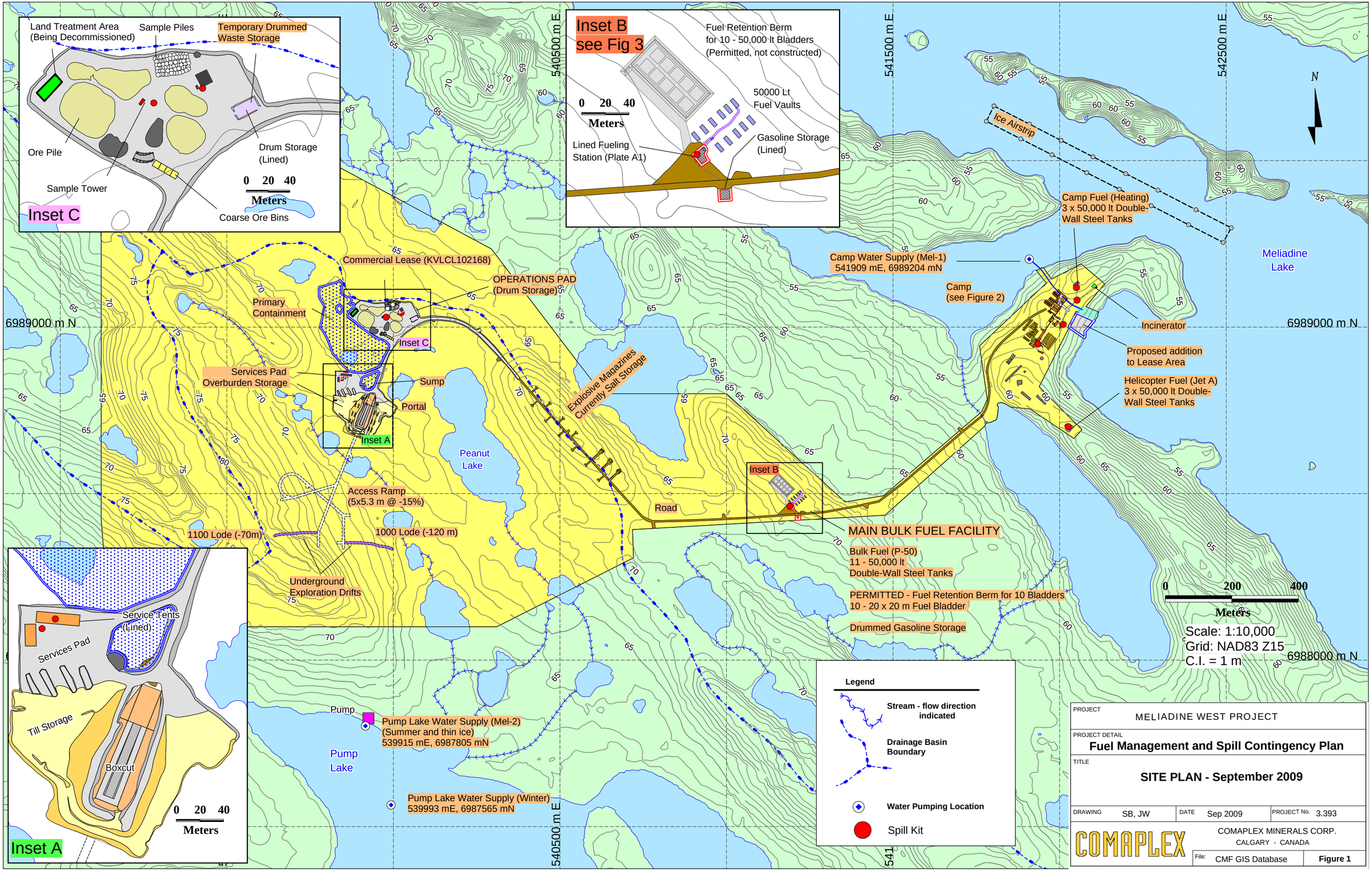
Spill sites will be identified, monitored and treated with peat and fertilizer to enhance plant recovery where growth retardation is evident. Sites that do not respond and show no sign of plant growth by the time of site abandonment will become subject to the **Abandonment and Restoration Plan**. Contaminated soils from within service tents will be stored at a safe location on the services or operations pads on impermeable liners and will be subject to the **Abandonment and Restoration Plan**.

1.7 Abandonment and Restoration Plan

The lands that are subject to this Spill Contingency Plan are Inuit Owned Lands belonging to the Kivalliq Inuit Association and are leased to AEM for the purposes of mineral exploration and development. A revised **Abandonment and Restoration Plan** has been filed with KIA and Nunavut Water Board as of November of 2010, covering both the Meliadine site and Mel East.

1.8 Training

A site specific training program consistent with the scope of the current operations is being developed with M & T Enterprises Ltd. The program will cover all components of the day to day operations of the facility and the winter re-supply of the camp. The training will include WHMIS review of dangerous goods handling and focus on safe procedures for the operation of the fuel facilities and fuel re-supply. Spill management techniques will also be incorporated into the training program.



PROJECT
MELIADINE WEST PROJECT

PROJECT DETAIL
Fuel Management and Spill Contingency Plan

TITLE
SITE PLAN - September 2009

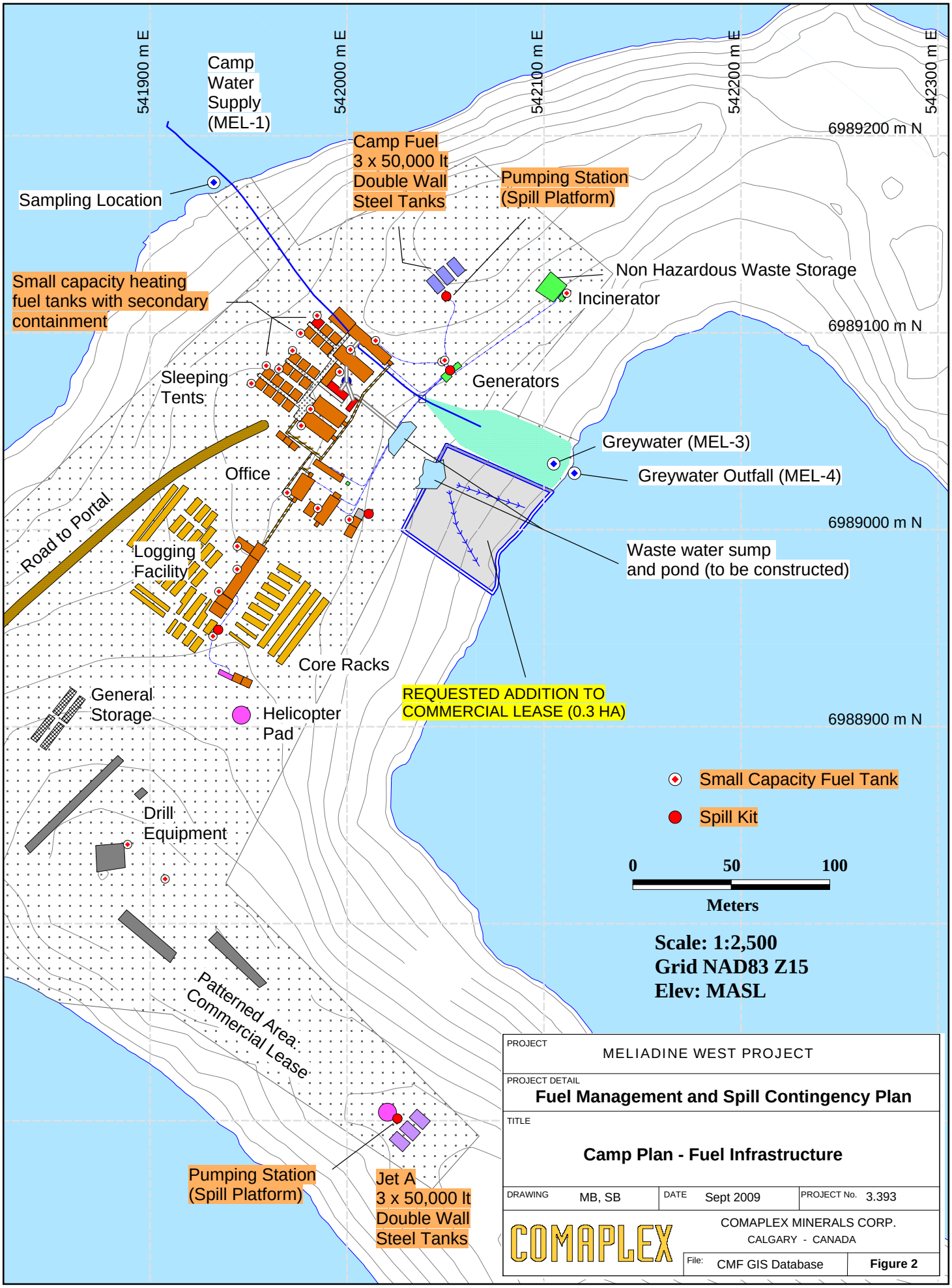
DRAWING	DATE	PROJECT No.
SB, JW	Sep 2009	3.393

COMAPLEX

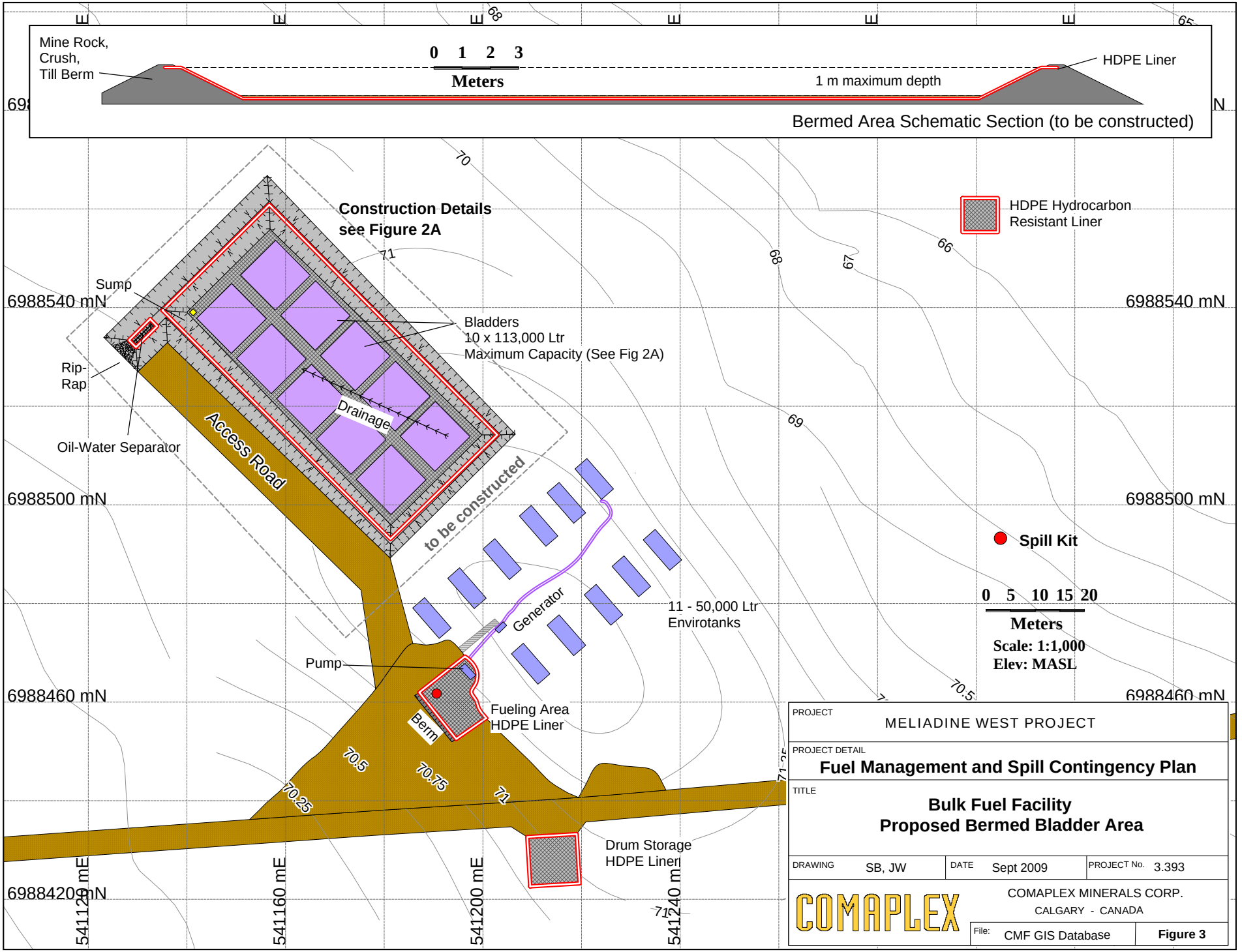
COMAPLEX MINERALS CORP.
CALGARY - CANADA

File: CMF GIS Database

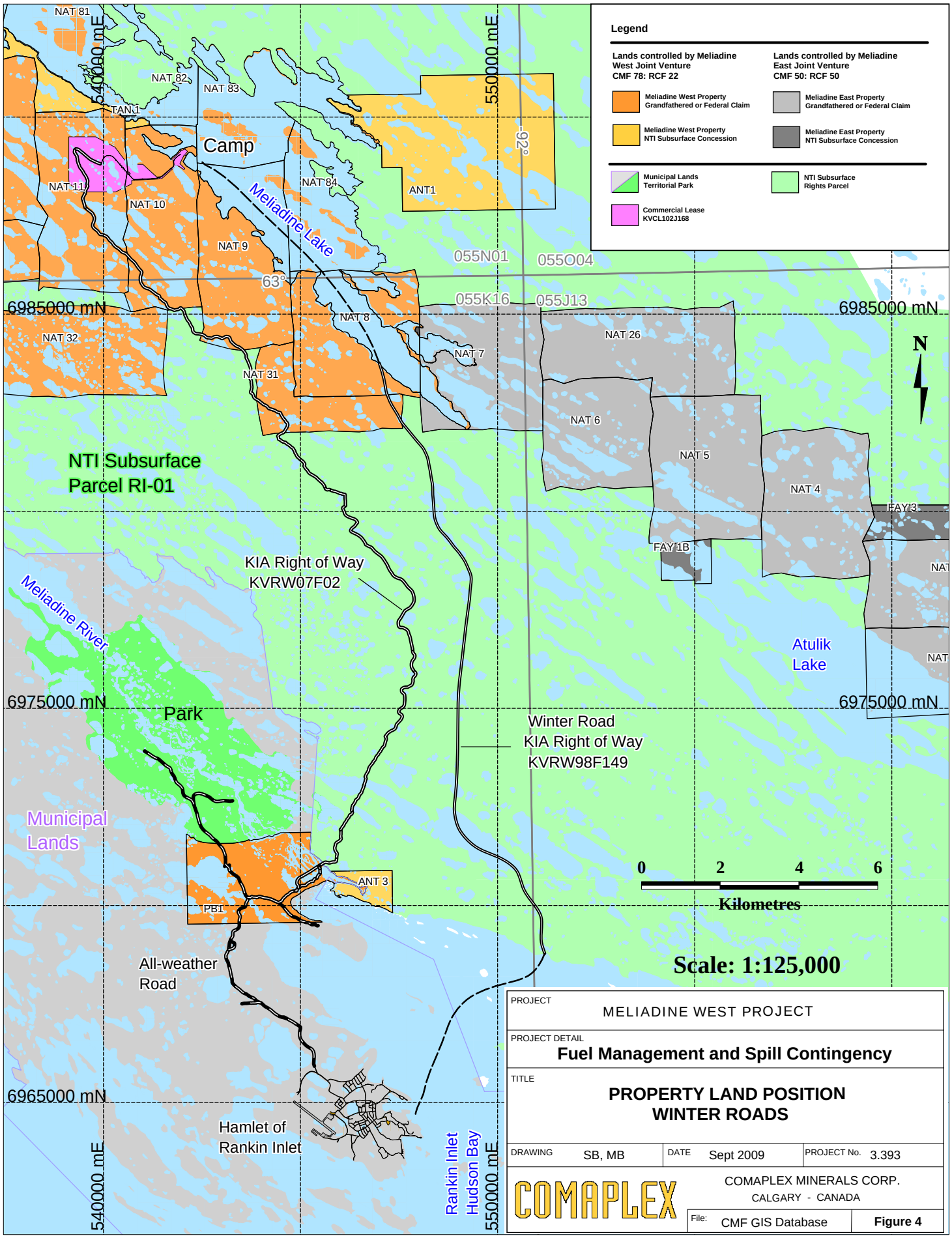
Figure 1



PROJECT	MELIADINE WEST PROJECT
PROJECT DETAIL	**Fuel Management and Spill Contingency Plan**
TITLE	**Camp Plan - Fuel Infrastructure**
DRAWING	MB, SB
DATE	Sept 2009
PROJECT No.	3.393
	COMAPLEX MINERALS CORP. CALGARY - CANADA
File:	CMF GIS Database
	Figure 2



PROJECT	MELIADINE WEST PROJECT
PROJECT DETAIL	**Fuel Management and Spill Contingency Plan**
TITLE	**Bulk Fuel Facility** **Proposed Bermed Bladder Area**
DRAWING	SB, JW
DATE	Sept 2009
PROJECT No.	3.393
	COMAPLEX MINERALS CORP. CALGARY - CANADA
File:	CMF GIS Database
	Figure 3



PROJECT: MELIADINE WEST PROJECT

PROJECT DETAIL: **Fuel Management and Spill Contingency**

TITLE: **PROPERTY LAND POSITION WINTER ROADS**

DRAWING	DATE	PROJECT No.
SB, MB	Sept 2009	3.393

COMAPLEX

COMAPLEX MINERALS CORP.
CALGARY - CANADA

File: CMF GIS Database

Figure 4

2.0 SPILL ACTION PLAN RESPONSE SEQUENCE

2.1 REPORT ALL SPILLS TO (AUTHORITY TO ACTIVATE PLAN):

ON-SITE MANAGER or **SENIOR PERSONNEL** on site
Site: Ph./Fax 867 645 3308 (local); 403-451-3236 (3237) (long distance)
Exploration Office Ph. 819 874 5880 ext 3600; Fax 819 856 8124
GOVERNMENT 24-HOUR Ph. (867) 920-8130

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 C) to the number indicated on the reporting form.

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

2.2 ALERT AEM Personnel:

- SPILL OBSERVER report to **ON-SITE CAMP MANAGER**		1 403 451 3236 (3237)
- Report to **MELIADINE GOLD PROJECT MANAGER**	Guy Gosselin	1 819 874 5880 ext 3600
	Cell	1 819 856 8124
Alternate	Denis Vallincourt	1 819 874 5980 (3605)
	Cell	1 819 354 9023
Environmental Emergency Contact	Stéphane Robert	1 819 759 3700 (814)
	Cell	1 819 763 0229
- Contractors (clean up) - M & T Enterprises Ltd., Rankin Inlet		1 867 645 2778

2.3 NOTIFY AGENCIES:

24 HOUR NT/NU SPILL REPORT LINE	PHONE	1 867 920 8130
	FAX	1 867 873 6924
	EMAIL	spills@gov.nt.ca
KIVALLIQ INUIT ASSOCIATION	Phone:	1 867 645 2810
	Phone:	1 867 645 2800
	Fax:	1 867 645 2348
INDIAN AND NORTHERN AFFAIRS CANADA		
Iqaluit		1 867 975 4275
Nunavut Field Operations		1 867 975 4546
Resource Officer, Rankin Inlet		1 867 645 2831

ENVIRONMENT CANADA	Iqaluit		1 867 975 4644
	Yellowknife		1 867 669 4730
	24 Hour Number		1 867 766 3737
FISHERIES AND OCEANS, Rankin Inlet			1 867 645 2871
DEPARTMENT OF ENVIRONMENT, NUNAVUT			1 867 975 5900
Manager of Pollution Control & Air Quality			1 867 975 7748
		Fax	1 867 979 5981

Emergency Contacts

EMO – Emergency Response (Iqaluit - 24 hr)	1 867 766 3737
EMO – Emergency Response – Rankin Inlet	1 867 645 3625
Rankin Inlet Ground Search and Rescue	1 867 645 2027
Rankin Municipality (Senior Administrator)	1 867 645 2895
RCMP – 24 HR EMERGENCY	1 867 645 1111
Rankin Inlet Health Center	1 867 645 2816
After Hours	1 867 645 3311
Midwife (if no answer above)	1 867 645 4607
Rankin Inlet Fire Department	1 867 645 2525
Mine Inspector	1 800 661 0792
John Witteman (Meliadine Gold Project Environmental Coordinator)	1 403 609 1222

2.4 RECORD THE FACTS

Use Spill Report Form found in Appendix C

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.**

3.0 INITIAL SPILL RESPONSE PRIORITIES

SAFETY FIRST

3.1 RESPOND QUICKLY

1. Identify the spilled material.
2. Ensure safety of yourself and others.
3. Shut off ignition sources - NO SMOKING.
4. Attend to Injured.
5. Assess the severity of the spill.
6. Call for assistance.
7. **On-site Manager mobilizes Emergency Response Team**.
8. Keep unnecessary people out of the area.
9. Wear impervious clothing, goggles, and gloves.
10. Approach spill from upwind **IF SAFE TO DO SO**.
11. Stop product flow if possible.
12. Contain and recover spill as soon as possible.

3.2 RESPOND SAFELY

1 Do not contain gasoline or aviation fuel if vapours might ignite.
2 Allow gasoline or aviation fuel spills to evaporate.
3 See Appendix A - Product Guides for further information.

3.3 OBTAIN AND REPORT SPILL DETAILS

NT-NU Spill Report Form is found in Appendix C of this spill contingency and response plan.

DIESEL - P 50 - SPILL RESPONSE ACTIONS

CONSIDER ACTION ONLY IF SAFETY PERMITS!

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

ON LAND

- Do not flush into ditches or drainage systems.
- 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.
- Remove minor spills with sorbent pads and/or snow.
- Use ice augers and pump to recover diesel under ice.
- Slots in ice can be cut over slow moving water to contain oil.
- Burn accumulated diesel from the surface using Tiger Torches if feasible and safe to do so.

ON MUSKEG

- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled diesel with pumps and skimmers.
- Flush with low pressure water to herd diesel 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 as close to release point as possible.
- Use spill containment boom to concentrate slicks for recovery.
- On small spills, use sorbent pads to pick up contained oil.
- On larger spills, use skimmer on contained slicks.
- Do not deploy personnel and equipment onto mudflats or into wetlands

RIVERS & STREAMS

- Prevent entry into water, if possible, by building a berm or trench.
- Intercept moving slicks in quiet areas using (sorbent) booms.
- Do not use sorbent booms/pads in fast currents and turbulent water.

STORAGE / TRANSFER

- Store closed, labelled 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.

HYDRAULIC OIL SPILL RESPONSE ACTIONS

CONSIDER ACTION ONLY IF SAFETY PERMITS

- **ELIMINATE IGNITION SOURCES**
- **STOP SOURCE OF HYDRAULIC OIL IF SAFE TO DO SO**

ON LAND

- Do not flush into ditches or drainage systems.
- 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 to degrade if feasible to do so.

ON SNOW & ICE

- Block entry into waterways and contain with snow or other barrier.
- Remove minor spills with sorbent pads and/or snow.
- Use ice augers and pump when feasible to recover oil under ice.
- Burning hydraulic oil will not likely be feasible.
- Mechanical removal (scraping) can be tried.

ON MUSKEG

- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled oil with pumps and skimmers.
- Flush with low pressure water to herd oil to collection point.
- Minimize damage caused by equipment and excavation.
- Burning is not likely possible.

ON WATER

- Contain spill as close to release point as possible.
- Use spill containment boom to concentrate slicks for recovery.
- On small spills, use sorbent pads to pick up contained oil.
- On larger spills, obtain and use skimmer on contained slicks.
- Do not deploy personnel and equipment on mudflats or wetlands.
- Remove contained oil with sorbent pads and/or skimmer.

RIVERS & STREAMS

- Prevent entry into water, if possible, by building a berm or trench.
- Intercept moving slicks in quiet areas using (sorbent) booms.
- Do not use sorbent booms/pads in fast currents and turbulent water.

STORAGE / TRANSFER

- Store closed, labeled containers outside away from flammable items.
- Drums are likely to be used for containing collected hydraulic oil.

DISPOSAL

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

LUBE OIL SPILL RESPONSE ACTIONS

CONSIDER ACTION ONLY IF SAFETY PERMITS

- **ELIMINATE IGNITION SOURCES**
- **STOP SOURCE OF LUBE OIL IF SAFE TO DO SO**

ON LAND

- Do not flush into ditches or drainage systems.
- 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 to degrade if feasible to do so.

ON SNOW & ICE

- Block entry into waterways and contain with snow or other barrier.
- Remove minor spills with sorbent pads and/or snow.
- Burning is unlikely to be possible.
- Use ice augers and pump when feasible to recover oil under ice.

ON MUSKEG

- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled oil with pumps and skimmers.
- Flush with low pressure water to herd oil to collection point.
- Burning is not likely to be possible.
- Minimize damage caused by equipment and excavation.

ON WATER

- Contain spill as close to release point as possible.
- Use spill containment boom to concentrate slicks for recovery.
- On small spills, use sorbent pads to pick up contained oil.
- On larger spills, obtain and use skimmer on contained slicks.
- Do not deploy personnel and equipment on mudflats or wetlands.
- Remove contained oil with sorbent pads and/or skimmer.

RIVERS & STREAMS

- Prevent entry into water, if possible, by building a berm or trench.
- Intercept moving slicks in quiet areas using (sorbent) booms.
- Do not use sorbent booms/pads in fast currents and turbulent water.

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.

WASTE OIL SPILL RESPONSE ACTIONS

CONSIDER ACTION ONLY IF SAFETY PERMITS

- **ELIMINATE IGNITION SOURCES**
- **STOP SOURCE OF WASTE OIL IF SAFE TO DO SO**

ON LAND

- Do not flush into ditches or drainage systems.
- 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 to degrade if feasible to do so.

ON SNOW & ICE

- Block entry into waterways and contain with snow or other barrier.
- Remove minor spills with sorbent pads and/or snow.
- Burning is unlikely to be possible.
- Use ice augers and pump when feasible to recover oil under ice.

ON MUSKEG

- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled oil with pumps and skimmers.
- Flush with low pressure water to herd oil to collection point.
- Burning is not likely to be possible.
- Minimize damage caused by equipment and excavation.

ON WATER

- Contain spill as close to release point as possible.
- Use spill containment boom to concentrate slicks for recovery.
- On small spills, use sorbent pads to pick up contained oil.
- On larger spills, obtain and use skimmer on contained slicks.
- Do not deploy personnel and equipment on mudflats or wetlands.
- Remove contained oil with sorbent pads and/or skimmer.

RIVERS & STREAMS

- Prevent entry into water, if possible, by building a berm or trench. & Streams
- Intercept moving slicks in quiet areas using (sorbent) booms.
- Do not use sorbent booms/pads in fast currents and turbulent water.

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.
- Whenever possible suitable waste oils collected at the site will be disposed of by incineration.
- Consult camp manager on disposal procedures.

GASOLINE SPILL RESPONSE ACTIONS
CONSIDER ACTION ONLY IF SAFETY PERMITS

GASOLINE FORMS VAPOURS THAT CAN IGNITE AND EXPLODE NO SMOKING

- **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.

JET A & B (AVIATION FUEL) SPILL RESPONSE ACTIONS
CONSIDER ACTION ONLY IF SAFETY PERMITS
AV GAS FORMS VAPOURS THAT CAN IGNITE AND EXPLODE
NO SMOKING

- **ELIMINATE IGNITION SOURCES**
- **STOP SOURCE OF JET A 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 av gas 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 procedures.

PROPANE RESPONSE ACTIONS

GAS STORED IN CYLINDERS THAT EXPLODE WHEN IGNITED!
CONSIDER ACTION ONLY IF SAFETY PERMITS

KEEP ALL VEHICLES INCLUDING SNOWMOBILES AWAY FROM ACCIDENT AREA

Refer to Product Guide in Appendix A for:
- Physical/Chemical Properties
- Response to Fires
- First Aid

- Vapours cannot be contained when released.

- Water spray can be used to knock down vapours if there is NO chance of ignition.

- Small fires can be extinguished with dry chemical or CO.

- Personnel should withdraw immediately from area unless a small leak is stopped immediately after it has been detected.

- If tanks are damaged, gas should be allowed to disperse and no attempt at recovery should be made.

- Personnel should avoid touching release point on containers since frost quickly forms.

- Stay clear of tank ends.

ACETYLENE RESPONSE ACTIONS

GAS STORED IN CYLINDERS THAT EXPLODE WHEN IGNITED!
CONSIDER ACTION ONLY Y IF SAFETY PERMITS
KEEP ALL VEHICLES INCLUDING SNOWMOBILES AWAY FROM ACCIDENT AREA

Refer to Product Guide in Appendix A for:
- Physical/Chemical Properties
- Response to Fires
- First Aid

- Vapours cannot be contained when released.

- Water spray can be used to knock down vapours if there is NO chance of ignition.

- Small fires can be extinguished with dry chemical or CO.

- Personnel should withdraw immediately from area unless a small leak is stopped immediately after it has been detected.

- If tanks are damaged, gas should be allowed to disperse and no attempt at recovery should be made.

- Personnel should avoid touching release point on containers since frost quickly forms.

- Stay clear of tank ends.

4.0 SPILL RESPONSE CONTACTS

Agnico-Eagle Mines Limited - Meliadine Gold Project

TITLE	NAME	OFFICE	FAX
On-Scene Coordinators			
Camp Manager		1 403 451 3236	
Spill Cleanup Supervisors Meliadine Camp			
On-Site Manager		1 867 645 3308; 1 403-451-3236(3237)	
MELIADINE GOLD PROJECT MANAGER	Guy Gosselin	1 819 874 5880 ext 3600	
		Cell	1 819 856 8124
Alternate	Denis Vallincourt		1 819 874 5980 ext 3605
		Cell	1 819 354 9023
Environmental Emergency Contact	Stéphane Robert		1 819 759 3700 ext 814
		Cell	1 819 763 0229
Environmental Coordinator	John Witteman	1 403 609 1222	
CONTRACTORS			
M & T Enterprises Ltd. Rankin Inlet		1 867 645 2778	1 867 645 2590
OTHERS			
Nunavut Power Corp. Rankin Inlet		1 867 645 5300	1 867 645 2487.
Rankin Municipality (Senior Administrator)		1 867 645 2895	1 867 645 2146

EXTERNAL CONTACTS
CONTACT THE FOLLOWING NUMBER IMMEDIATELY:

1. GOVERNMENT 24-HOUR SPILL REPORT LINE	PH. (867) 920-8130 FAX (867) 873-6924

OTHER CONTACTS: PHONE

KIVALLIQ INUIT ASSOCIATION - LAND MANAGEMENT

Tongola Sandy – president	1 867 645 2810
Luis Manzo - land use manager	1 867 645 2810

EMO 1 867 645 5042 (1 867 645 3789 after working hours)

GOVERNMENT OF CANADA

RCMP - Rankin Inlet	1 867 645 2822
INAC - Rankin Inlet - Henry Kablalik	1 867 645 2831
Environmental Protection, Environment Canada	1 867 920 6060
Environment Canada, Iqaluit	1 867 975 4631
EC - 24 Hour Number	1 867 766 3737
Hazardous Materials Officer	1 867 669 4729
Hazardous Materials Specialist	1 867 669 4728
Fisheries & Oceans, Rankin Inlet	1 867 645 2871
Iqaluit	1 867 979 6274

LOCAL TRANSPORTATION

Helicopters

CUSTOM HELICOPTERS	Staff House	1 867 645 3885
	Hanger	1 867 645 3939

Air Lines - Scheduled

	First Air - Dispatch	1 867 873 8021
	Calm Air	1 867 645 2900
	Kivalliq Air	1 877 855 1500
Bombardier	Kowmuk's Taxi	1 867 645 3034

Neighbouring Sites	Nunavut Power Corp.- Rankin Inlet	1 867 645 5300
	Meadowbank Gold Mine – Stéphane Robert	1 867 759 3700 ext 814

EQUIPMENT SUPPLIERS

Frontier Mining, Yellowknife (spill kits etc)	1 867 920 7617
Acklands – Yellowknife (spill kits etc)	1 867 873 4100

5.0 DUTIES AND RESPONSIBILITIES

The roles and responsibilities of AEM personnel, contractors, and Government are described on the
following pages.

AEM and CONTRACTOR PERSONNEL

Spill Observer - anyone on haul route, at fuel cache, camp, or drill site at any time
- Assess the initial severity of the spill and safety concerns.
- Report all spills to Meliadine Camp manager immediately.
- Determine the source of the spill and stop or contain it, if possible.
- Participate in spill response as member of cleanup crew.

On-Scene Coordinator (OSC) - AEM Meliadine Camp Manager
- Immediately reports the spill to NWT 24-Hour Spill Report Line at (403) 920-8130.
- Records the time of the report, source of information and details on location, size, and type of spill as well as any other information available on the spill report form.
- Oversees the cleanup operation until it is satisfactorily completed.
- Together with the Spill Cleanup Supervisor, decides if additional equipment is required to contain and clean up spills.
- Notifies government agencies, AEM Site Manager, AEM Project Manager and Environmental Coordinator on spill details.
- Oversees completion and distribution of Spill Report. Ensures investigation identifies measures to prevent similar spills in future.
- Ensures Response Team is adequately trained in spill response.
- Organizes training courses for spill response teams.

Spill Clean Up Supervisors
- Supervise spill cleanup crew.
- Assist in initial and ongoing response efforts.
- With work crew, take initial action to seal off the source and contain spill.
- Continue actions until relieved or supplemented by other Supervisor.
- Decide with On-Scene Coordinator if mobilization of additional equipment from Spill Response Organization or Contractor is warranted.
- Assess whether burning is a viable clean up measure; consult with regulatory authorities at spill site.

Spill Cleanup Crew (Emergency Response Team)
- conduct cleanup of spills under direction of Spill Cleanup Supervisor(s).
- Deploy booms, sorbents and other equipment and materials as required.
- Take appropriate response measures.
- Continue cleanup as directed by Spill Cleanup Supervisor until relieved.

Project Manager, Meliadine Gold Project
- Responsible for all communication with the media.
- Ensures that all press releases are accurate and in accordance with company policy.

• Makes financial decisions on major expenses during large spill response.
• Initiates Mutual Aid Agreements if proper response requires outside assistance.

Environmental Coordinator

• Provides cleanup advice to the On-Scene Coordinator and Spill Cleanup Supervisor.
• Assists the Project Manager in the preparation of press releases.
• Develops safe and effective spill management and prevention practices.
• Provides advice to the Spill Cleanup Supervisor of storage and disposal options.
• Updates and distributes Spill Contingency Plan.
• Ensures that there are follow up reports prepared on the spill event, clean up and environmental impacts.

6.0 EXTERNAL RESOURCES - contractors and consultants

AEM Fuel Haul Contractors

- Ensure that their best effort is made to maintain spill equipment which shall be available and be applied to a spill incident on site when required.
- Initiates cleanup in the absence of AEM personnel, however caused.
- Reports all spills immediately to the AEM On-Scene Coordinator (OSC) or Camp Manager
- Responsible for the training of their personnel on spill response.
- Develops and maintains company specific contingency plans for the AEM Meliadine Gold Project, which conforms to this AEM Spill Contingency Plan and related policies.

Environmental Consultants

- Provide advice to AEM on spill response strategies, counter measure technologies, impact assessments and post spill monitoring and site rehabilitation.

Neighbouring Operations

- Supply spill response equipment, materials and manpower, as required, when requested to do so.

EXTERNAL RESOURCES - Kivalliq Inuit Association and Nunavut Water Board

KIA

The Meliadine Gold Project exploration program is carried out on Inuit Owned Land administered and managed by the KIA who has issued land use permits to AEM for the exploration activities. Inspectors from KIA routinely inspect land use sites for compliance to terms and conditions of permits. While KIA receives data from spills reported to the NWT Spill Line, it is expected that all spills on Inuit Owned Land be reported directly to KIA. The same form as used for the Spill Line may be used for reporting to KIA.

Nunavut Water Board

The Nunavut Water Board issues water licenses under the Nunavut Land Claims Agreement and the Nunavut Waters and Nunavut Surface Rights Tribunal Act. Conditions of the water license usually include the authorized limits of water use, sources of water use, effluent discharge limits, monitoring and reporting requirements. As well, licenses require that Spill Contingency Plans be submitted for approval. Enforcement of the provisions of the water license is carried out by Inspectors from the Water Resources Division (Department of Indian and Northern Affairs). Periodic inspections are conducted by water license inspectors.

EXTERNAL RESOURCES - GOVERNMENT

Indian and Northern Affairs Canada (INAC)

The Northern Affairs program of INAC administers the Territorial Lands Act and Regulations. Through this legislation land use permits are issued. One of the conditions of land use permits is the requirement to report all spills to a 24 hour government run report line (403-920-8130). Land Use Permits may also address matters of environmental conservation and protection

including waste disposal, sources of borrow materials, open pit mining, road alignments, land reclamation and closure requirements. Enforcement of the provisions of the land use permits is carried out by the Operations Division of INAC through Resource Management Officers located at the District Offices.

Inspection of AEM project activities located on Crown Land by Resource Management Officers is conducted periodically.

INAC also inspects facilities having a Water Licence to ensure the terms and conditions are being met, and that the effluent quality of any waste released to the environment meets licence limits.

Environment Canada (EC)

The Environmental Protection and Conservation Service of Environment Canada administers the Canadian Environmental Protection Act (CEPA) and Section 36 of the Fisheries Act. For the latter this specifies that unless authorized by regulation, any effluents discharged into fish bearing water must be non-toxic. EC is responsible for providing environmental advice to federal and territorial government agencies and for the preservation and enhancement of environmental quality.

Department of Fisheries and Oceans (DFO)

The Department of Fisheries and Oceans (DFO) administers the habitat protection provisions of the

Fisheries Act. This includes provisions prohibiting the harmful alteration, disruption and destruction of fish habitat unless authorized. DFO applies a Habitat Management Policy whereby the objective is to achieve a no net loss of fish habitat. On occasion, DFO Inspectors visit spill sites to investigate possible impacts to fish habitat.

7.0 REFERENCES

BHP Diamonds Inc. Transportation Spill Contingency Plan. January 1997.

Department of Transportation. Environmental Guidelines for the Construction, Maintenance and
Closure of Winter Roads in the Northwest Territories. Prepared by Stanley Associates Engineering
Ltd. 1993.

Northwest Territories Water Board. Guidelines for Contingency Planning. 1987.

WMC International Ltd., Emergency Management System Plan, August 2001.

ACKNOWLEDGMENTS
AEM gratefully acknowledges the use of the WMC International Ltd's Emergency Management System Plan, which was based fundamentally on BHP Diamonds Inc. Transportation Spill Contingency Plan.

APPENDIX A
PRODUCT GUIDES

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

- flammable immiscible liquids
- flammable compressed gases

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 Low Flash Point (burns easily)

Jet A

Turbo B

Diesel Fuel

Waste Oil

Lube Oil

High Flash Point.

DIESEL

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear, yellow or red
ODOUR: Petroleum
SOLUBILITY: Insoluble
VAPOUR GRAVITY: Will sink to ground level
FLASH POINT: 40EC (minimum)
POUR POINT: -50 to -6EC
VISCOSITY: Not viscous
SPECIFIC DENSITY: Floats on water (0.8 - 0.9)

SAFETY MEASURES

WARNINGS

- Vapours are heavier than air and form easily at high temperatures.
- Empty containers can contain explosive vapours.
- Toxic gases form upon combustion.
- 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, Viton and PVC are suitable materials **(DO NOT USE NATURAL RUBBER or NEOPREN**E.)
- 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, ozone and 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 CO2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!

ON LAND

- **ELIMINATE IGNITION SOURCES.**

- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with peat moss and/or sorbent pads.
- Remove large spills with pumps or vacuum equipment.

ON WATER
- Use booms to contain and concentrate spill.
- Remove spill using sorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes.

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

DISPOSAL
- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult with environmental authorities during final disposal.

FIRST AID
EYES
- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

SKIN
- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

INHALATION
- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

INGESTION
- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- **Get prompt medical attention.**

HYDRAULIC OIL

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Straw-yellow liquid
ODOUR: Petroleum
SOLUBILITY: Generally insoluble
VAPOUR DENSITY: Few vapours emitted
FLASHPOINT: 215EC
POUR POINT -25EC
VISCOSITY: Medium (265cSt @ 15EC)
SPECIFIC GRAVITY: Floats on water (0.9)

SAFETY MEASURES

WARNINGS

- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO2, and dense smoke are produced upon combustion.
- Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.

PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials **(DO NOT USE NATURAL RUBBE**R).
- Use of organic vapour cartridge respirator is highly unlikely.

PRECAUTIONS

- Avoid excessive heat, which can cause formation of vapours.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

RESPONSE TO FIRES
CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA and eye protection when responding to fires.
- Shut off fuel supply.
- Extinguish fire with CO2, dry chemical, alcohol foam or water fog.
  NOTE: Water or foam may cause frothing.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!

ON LAND

- Prevent additional discharge of oil.
- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.

- Remove minor spills with peat moss and/or sorbent pads.
- Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.

ON WATER

- Use booms to contain and concentrate spill.
- Remove spill using sorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes/marinas.

STORAGE & TRANSFER

- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.

DISPOSAL

- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult with environmental authorities during final disposal.

FIRST AID

EYES

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

SKIN

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

INHALATION

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

INGESTION

- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

LUBE OIL

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Amber liquid	FLASHPOINT: 190 to 220EC
ODOUR: Petroleum	POUR POINT: -35 to -400EC
SOLUBILITY: Generally insoluble	VISCOSITY: Medium (255cSt @15EC)
VAPOUR DENSITY: Few vapours emitted	SPECIFIC GRAVITY: Floats on water (0.9)

SAFETY MEASURES

WARNINGS

- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO2, and dense smoke are produced upon combustion.
- Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.

PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile, PVC and Viton are suitable materials. **(DO NOT USE NATURAL RUBBE**R.)
- Use of organic vapour cartridge respirator is highly unlikely.

PRECAUTIONS

- Avoid excessive heat, which can cause formation of vapours.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

RESPONSE TO FIRES
CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA and eye protection when responding to lube oil fires.
- Shut off fuel supply.
- Extinguish fire with CO2, dry chemical, alcohol foam or water fog.
  NOTE: Water or foam may cause frothing.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!

ON LAND

- Prevent additional discharge of oil.
- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.

- Remove minor spills with sorbent and/or peat moss.
- Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.

ON WATER
- Use booms to contain and concentrate spill.
- Remove spill using sorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes.

STORAGE & TRANSFER
- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.

DISPOSAL
- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult with environmental authorities during final disposal.

FIRST AID

EYES
- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

SKIN
- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

INHALATION
- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

INGESTION
- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

WASTE OIL

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Black to brown liquid
ODOUR: Petroleum
SOLUBILITY: Generally insoluble
VAPOUR DENSITY: Few vapours emitted
FLASHPOINT: 100 to 200EC
POUR POINT: -30 to -400EC
VISCOSITY: Medium (200 - 300 cSt)
SPECIFIC GRAVITY: Floats on water (0.9)

SAFETY MEASURES

WARNINGS

- Vapours are heavier than air but are unlikely to form.
- Toxic gas can form in fire and at high temperatures.
- CO, CO2, and dense smoke are produced upon combustion.

PERSONAL PROTECTION

- Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; nitrile, PVC and Viton are suitable materials **(DO NOT USE NATURAL RUBBER**.)
- Use of organic vapour cartridge respirator is highly unlikely.

PRECAUTIONS

- Avoid excessive heat, which can cause formation of vapours.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and peroxides.
- Eliminate ignition sources.
- Restrict access and work upwind of spill.

RESPONSE TO FIRES
CONSIDER ACTION ONLY IF SAFETY PERMITS!

- Wear SCBA and eye protection when responding to lube oil fires.
- Shut off fuel supply.
- Extinguish fire with CO2, dry chemical, alcohol foam or water fog.

NOTE: Water or foam may cause frothing.

- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!

ON LAND

- Prevent additional discharge of oil.
- Do not flush into ditch/drainage systems.
- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with peat moss and/or sorbent pads.

- Remove large spills with pumps or vacuum equipment. Spill can also be mechanically removed if oil is too viscous to be pumped.

ON WATER

- Use booms to contain and concentrate spill.
- Remove spill using sorbent, skimmer or vacuum truck.
- Protection booming can be considered for water intakes.

STORAGE & TRANSFER

- Store closed, labelled containers in cool, ventilated areas away from incompatible materials.

DISPOSAL

- Segregate waste types.
- Place contaminated materials into marked containers.
- Consult with environmental authorities during final disposal.

FIRST AID

EYES

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

SKIN

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

INHALATION

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

INGESTION

- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

GASOLINE

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

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

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, Viton and PVC are suitable materials **(DO NOT USE NATURAL RUBBER or NEOPRENE**.)
- Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.

PRECAUTIONS
- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, and 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 CO2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!
ON LAND
- **ELIMINATE IGNITION SOURCES.**
- Do not flush into ditch/drainage systems.

- Block entry into waterways.
- Contain spill by diking with earth, snow or other barrier.
- Remove minor spills with peat moss and/or sorbent pads.
- Cover pools with foam to prevent vapour evolution if gasoline presents a fire hazard; otherwise allow vapours to dissipate.

ON WATER

- **ELIMINATE IGNITION SOURCES.**
- **DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.**
- Protection booming can be considered for water intakes.

STORAGE & TRANSFER

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

DISPOSAL

- Place contaminated materials into segregated marked containers.
- Consult with environmental authorities during final disposal.

FIRST AID

EYES

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

SKIN

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

INHALATION

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

INGESTION

- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

JET A

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White or pale yellow liquid	FLASH POINT: -20 to - 250EC
ODOUR: Gasoline/Petroleum	FREEZING PT: -50EC
SOLUBILITY: Negligible	VISCOSITY: Not viscous (<7 cSt)
VAPOUR DENSITY: Will sink to ground levels	SPECIFIC GRAVITY: Floats on water (0.75 0.8)

SAFETY MEASURES

WARNINGS
- Vapours instantaneously form, 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 SCBA, if circumstances warrant.

PRECAUTIONS
- Monitor for explosive atmosphere.
- Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, 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 CO2, dry chemical, AFFF foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO SPILLS
CONSIDER ACTION ONLY IF SAFETY PERMITS!
ON LAND
- **ELIMINATE IGNITION SOURCE**S.
- Block entry into waterways; do not flush into ditch/drain systems.
- Contain spill by diking with earth, snow or other barrier.

• Remove minor spills with sorbent or explosion-proof pump.
• Cover pools with foam to prevent vapour evolution if avgas presents a fire hazard; otherwise allow
vapours to dissipate.

ON WATER
• **ELIMINATE IGNITION SOURCES.**
• **Contain or remove spills ONLY AFTER VAPOURS DISSIPATE.**
• Protection booming can be considered for water intakes.
• Recover slicks using skimmer and sorbent, if volumes warrant.

STORAGE & TRANSFER
• Store closed, labelled containers in cool, ventilated areas away from incompatible materials.
• Electrically ground containers & vehicles during transfer.

DISPOSAL
• Place contaminated materials in segregated, marked containers.
• Consult with environmental authorities during final disposal.

FIRST AID
EYES
• Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
• Remove contact lenses, if exposed to vapours or liquid.
• Get prompt medical attention.

SKIN
• Remove and launder contaminated clothing.
• Wash skin thoroughly with soap and water.
• Get medical attention.
• Discard saturated leather articles.

INHALATION
• Move victim to fresh air.
• Perform artificial respiration if victim not breathing.
• Provide oxygen if victim is having difficulty breathing.
• Get prompt medical attention.

INGESTION
• DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
• Get prompt medical attention.

PROPANE

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless gas	FLASH POINT: -104EC
ODOUR: Natural gas odour	FREEZING PT: -190 EC
SOLUBILITY: Insoluble	VISCOSITY: n/a
VAPOUR DENSITY: Will sink to ground levels	SPECIFIC GRAVITY: Liquid floats on water

SAFETY MEASURES

WARNINGS

- Vapours form instantaneously, and are heavier than air.
- 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 PV**C).
- Avoid frostbite burn to skin and eyes from contact with propane.
- 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, ozone, and 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 CO2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO GAS RELEASES
CONSIDER ACTION ONLY IF SAFETY PERMITS!
ON LAND
- **ELIMINATE IGNITION SOURCES.**
- **DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS**

ON WATER
- **ELIMINATE IGNITION SOURCES.**
- **DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.**

STORAGE & TRANSFER
- It is not possible to collect released material.

DISPOSAL
- Consult with environmental authorities if the disposal of any contaminated materials is required.

FIRST AID

EYES
- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

SKIN
- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

INHALATION
- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

INGESTION
- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention

ACETYLENE

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless gas
ODOUR: Garlic - like
SOLUBILITY: Slightly soluble
VAPOUR DENSITY: Will sink to ground levels
FLASH POINT: -18EC
FREEZING PT: -82EC
VISCOSITY n/a
SPECIFIC GRAVITY: (0.6) Liquid floats on water

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, ozone, and 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 CO2, dry chemical, alcohol foam or water fog.
- Use water to cool containers exposed to fire.

RESPONSE TO GAS RELEASES
CONSIDER ACTION ONLY IF SAFETY PERMITS!
ON LAND

- **ELIMINATE IGNITION SOURCES.**
- **DO NOT ATTEMPT TO CONTAIN OR REMOVE RELEASES**

ON WATER

- **ELIMINATE IGNITION SOURCES.**
- **DO NOT ATTEMPT TO CONTAIN OR REMOVE RELEASES**

STORAGE & TRANSFER

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

DISPOSAL

- Consult with environmental authorities if the disposal of any contaminated materials is required.

FIRST AID

EYES

- Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes while holding the eyelids open.
- Remove contact lenses, if exposed to vapours or liquid.
- Get prompt medical attention.

SKIN

- Remove and launder contaminated clothing.
- Wash skin thoroughly with soap and water.
- Get medical attention.
- Discard saturated leather articles.

INHALATION

- Move victim to fresh air.
- Perform artificial respiration if victim not breathing.
- Provide oxygen if victim is having difficulty breathing.
- Get prompt medical attention.

INGESTION

- DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.
- Get prompt medical attention.

APPENDIX B
RESPONSE EQUIPMENT INVENTORY

During the exploration phase of the project, spills occurring along the transportation route will be remedied by the appropriate personnel depending on the party responsible for the spill, the location of the spill, and the extent of the environmental threat. Larger spills will involve the coordination of AEM personnel (including the Emergency Response Team), contractors, and AEM Mutual Aid Partners. For the purposes of listing response equipment, the equipment will be listed by contractor and site.

Mobile Equipment
From **M and T Enterprises (867 645 2778)**
Equipment *located in Rankin Inlet that can be used for spill countermeasures includes:*

- 1 740 Champion grader
- 1 BW 75 compactor
- 1 Cat 950 loader
- 1 Cat 966 loader
- 1 Cat D5 dozer
- 1 Cat D6D dozer
- 9 tandem dump trucks
- 1 trash pump
- 1 backhoe
- 1 tractor and end dump
- 1 Cat 966 loader
- 1 Cat D3 dozer
- 1 Cat D6E dozer
- 1 Cat D8K dozer
- 1 5000 gal. skid mounted storage tank

From **Nunavut Power Corporation** (645 5300)
Spill equipment available:

- fuel sorbent material
- pumps and hoses
- night operating equipment (portable generator light stand and cords)
- winter clean up equipment (chain saw)
- hand tools (shovels, rakes, wrenches)
- safety equipment

From **Municipality of Rankin Inlet** (645 2525) contact **Fire Department** (645 2895)
Heavy Equipment available:

- portable lighting
- dump truck
- bull dozer
- snow plow
- fire truck.
- front end loader
- backhoe
- grader
- vacuum truck

Mutual Aid Partners
In the event of a major spill requiring additional resources, equipment and manpower will be made
available through mutual aid agreements with the Canadian Coast Guard Emergency Response Officer (1 867 874 5559), the Hamlet of Rankin Inlet (1 867 645 2525) and the Nunavut Power Corporation (1 867 645 5300).
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Canadian Coast Guard (CCG) - Rankin Inlet Inventory
Material from the CCG inventory at Rankin INLET is available on a cost recovery basis and will be made available on request to the Nunavut EMO representative who will be billed by CCG for material consumed and who will then recover costs from AEM accordingly.
1500' X 24" oil containment boom
6 boom towing devices
6 5/8" tow lines X 100' c/w snap hooks
6 anchoring devices
6 Danforth anchors (22 lbs)
6 3/8" X 75' trip lines
6 trip line marker buoys type mb40
8 bales disposable boom (8" X 10' X 4 lengths per bale)
9 bales sorbent pads (18" X 18" X 3/8" X 100 pads)
10 sorbent rolls (36" X 150' X 3/8")
5 boxes of oil snare
2 1000 gal. portatanks
1 Spate pump
2 lengths 3" oil resistant suction hose - 50' each.
2 lengths oil resistant discharge hose - 50" each.
1 TDS-118 light medium oil skimmer c/w diesel power pack
1 spare parts kit for TDS-118 skimmer
1 4Kva diesel generator
1 16' aluminum boat
1 25 hp outboard motor
2 3000 psi portable high pressure washers
2 sets portable lights (each set has 3 X 500 watt halogen lamps, spare bulbs, 100" ext. cord and carrying case)
2 coils 1/4" polypropylene rope (1200')
2 coils ½" polypropylene rope (600')
2 coils 5/8" polypropylene rope (600')
72 pair disposable coveralls
120 pair work gloves
12 hard hat liners
40 dust / mist disposable masks
40 pairs assorted rain gear
20 pair safety glasses
20 safety vests
20 pair sunglasses
2 20' steel ISO containers
1 tool box

APPENDIX C

NT -NU SPILL REPORT FORM

Form pdf

APPENDIX D

FUEL STORAGE MONITORING PROGRAM

The fuel storage monitoring plan will consist of the following daily and weekly inspections conducted by AEM personnel that have been trained in the use of fuel pumping equipment and fuel spill response.

The following inspections will be conducted and recorded on a weekly basis:

1. All tanks, lines, pumps, hoses, valves and fittings will be inspected for leaks or damage.
2. Ensure proper fuel only is dispensed into the correct tanks and barrels for use in the camp and associated exploration work.
3. Ensure that the "No Smoking" signs posted in the area of the fuel tanks are always clearly visible.
4. Ensure that all personnel on site abide by the "No Smoking" rule within the distances outlined in the regulations for fuel tanks.
5. Ensure all spill response equipment and PPE (Personal Protection Equipment) is clearly visible and easily accessed.
6. Fuel levels in all primary tanks checked and compared against the fuel dispensed from each primary tank for each week.
7. Outer tanks checked for fuel leakage from the primary tank.
8. Spill response equipment checked.
9. PPE checked.

Appendix E

Basic Contents of Fuel Spill Response Kit

1. Absorbent pads or sheets, socks, and granular material

2. Disposable protective gloves

3. Disposable protective coveralls.

4. Sorbent containment and disposal bags

APPENDIX F:
OPERATING PROCEDURE FOR BULK FUEL OIL PUMPING STATIONS (DIESEL)

This section applies to the operation of the P-50 fuel oil tanks, piping and dispensers. One of the Operator's primary objectives is the delivery of clean, water free P-50 fuel oil. Dirty or contaminated P-50 Fuel Oil can lead to failure in vehicle engines. The operator must ensure that the P-50 Fuel Oil delivered to consumers is free from dirt and contamination.

Personnel must always remember that they are dealing with extremely flammable products. The need to follow safety guidelines and proper operating procedures cannot be repeated often enough.

Unsafe conditions and procedures must be reported and corrected immediately. .

Safety Guideline

The following safety guidelines must be followed at all times and by all people around the Bulk Fuel Storage Facility (includes Fuelling Station and Generator Shed):

.1 The Bulk Fuel Storage Facility must be kept clean at all times. Leaks must be reported and corrected immediately.

.2 Smoking is not permitted in or around the Bulk Fuel Storage Facility. Lighters, open flames, photoflashes, non-explosion proof flashlights and electrical appliances or tools are not permitted in the Bulk Fuel Storage Facility compound. (i.e. either within the tankage area or adjacent to or within the Fuelling Station and Generator Shed).

.3 All vehicle motors must be turned off before they are fuelled. This applies to all trucks, mobile heavy equipment, snowmobiles and all terrain vehicles.. This also applies to the Diesel Fuel Oil delivery vehicles that are being loaded - unloaded.

.4 Fuels shall not be poured into open top containers. Fuel shall only be dispensed into CSA approved fuel containers.

.5 Fire extinguishers must be located close to the fuel dispenser at all times. Operators must be familiar with the location and operation of the fire extinguisher.

System Start-up – General to All Systems

. 1 **Turn on Fuelling Station lights.**
Start up portable fuelling generator in the Generator Shed to turn on power to Fuelling Station lights (Does not apply to Camp Fuelling Station). Clear snow, as required, from in front of the Generator Shed.

.2 **Clear Snow**
Clear snow as required along the access road to the Fuelling Station, which houses Bulk Tank Fuel Hose Reel, Dispenser Reel and Pump and any accumulated drifts on the on

and off ramps. Clear snow, as required, from in front of the Fuelling Station, including the rear access panel for the Bulk Tank Fuel Hose on the Fuelling Station.

.3 **Perform an inspection**
Perform an inspection at initial start-up, checking for safety and accessibility of the access road and ramps and any signs of strains to piping, loose connections, and damage at the Fuelling Station and Generator Shed. Ensure that the Diesel Fuel nozzle at the end of the Diesel Fuel Dispensing hose in the Fuelling Station is in the closed position.

.4 **Connect Hoses**
At the rear of Fuelling Station, unreel Bulk Tank Fuel Hose and connect the dry disconnect coupler at the end of the fuel hose to the adapter (coupler) marked 'Empty'on the bulk tank. When secured, rotate the lever on the dry disconnect coupler to the 'On' position. Check for leaks and re-secure as required.

P-50 Fuel Oil Dispensing

.1 Perform the **system start-up tasks**.

.2 The vehicle to be filled shall be aligned in front of the Fuelling Station between the "**One Vehicle Only**" signs , the motor **turned off** and the shift lever placed in "Park" position. The portable container to be filled shall rest on a firm level surface.

.3 Ensure that there are **no vehicles within a six (6) metre radius** of the fill pipe of the vehicle being filled shall have the motor **turned off**.

.4 Set Diesel **Fuel meter to zero** (0).

.5 **Turn Diesel Fuel pump on** by depressing the **green 'ON'** button on the power switch mounted on the side of the Fuelling Station. **Check for leaks**, and if observed, immediately shut off the pump by depressing the **red 'OFF'** button on the power switch and locate / fix leak before turning the pump back on.

.6 **Unreel and secure the grounding wire** near the Diesel Fuel dispensing hose. Secure the grounding wire to vehicle or tank using the alligator clip. **Unreel the Diesel Fuel dispensing hose**. Remove the cap on fill opening of the tank to be filled. **Ensure that nozzle is clean**, then place Diesel Fuel nozzle in fill opening of tank.

.7 Squeeze handle of Diesel Fuel nozzle to allow fuel to enter the tank. **NEVER wedge open the lever of the discharge nozzle; this is illegal.** Prepare to close off the nozzle as the tank fills up. Do not overfill; always leave some free space in container or tank to permit expansion. (For example, if filling an empty 205L diesel-oil drum, do not fill beyond 200L).

.8 Shut off and remove the nozzle when the tank is full, **ensuring that drippage from the nozzle is minimized at all times**. Reinstall cap on the tank fill opening. Reel the hose and nozzle back onto the hose reel and place the **clean** nozzle in the 5gal pail.

.9 Reel the grounding wire back onto the wire reel.

.10 Read and record meter reading on the fuel log sheet located in the Fuelling Station..

.11 Perform shut down tasks.

System Shut Down – General To All Systems

.1 **Close the current supply tank valve at the Bulk Tank** by rotating the lever on the dry disconnect coupler to the 'Off' position. (If camp is being shut down, disconnect the hose from the Bulk Tank and reel the hose back onto the hose reel and re-secure rear access panel.)

.2 **Shut off Diesel Fuel pump** by depressing the red 'OFF' / 'Reset' button on the power switch mounted on the side of the Fuelling Station. Ensure Fuelling Station door is closed and properly secured.

.3 **Shut off the portable generator** in the Generator Shed. Ensure Generator shed door is closed and properly secured. (Does not apply to Camp Fuelling Station).

Appendix G WINTER ROAD RESUPPLY EQUIPMENT AND CONDITIONS

Re: KIA File KVRW07F02, NIRB File 07AN063 – Winter Road Decision AEM continues to review the following conditions and will submit a revised plan by December 2010 if necessary.

7. The Proponent must **ensure that secondary containment measures are used when transferring fuel** and any hazardous materials from vehicles to storage facilities.
8. The Proponent shall ensure that the transportation contractor for the winter road (M&T Services Ltd.) has **an appropriate spill kit to address a spill of fuel from the largest-sized Envirotank (12,000L).**
9. The Proponent shall ensure that the transportation contractor for the winter road (M&T Services Ltd.) has an **appropriate spill contingency plan** to address the possibility of any spills along the winter road.

Re: Government of Nunavut Comments NIRB File #07AN063 (letter dated Aug. 23, 2007)

- Speed on winter roads should not exceed: 30 km/hr for fully loaded vehicles; 50 km/hr for empty vehicles
- Trucks should carry at least 10 square meters of polyethylene material (for lining a trench or depression), a spark-proof shovel and oil absorbent blankets or squares.
- Trucks should carry reliable radio and /or satellite phone communications
- Trucks should carry sufficient response equipment for the safe removal of fuel from an overturned tanker (such as hatch cone covers, hoses etc).
- In general, proponents should be fully prepared to deal with spills resulting from vehicle accidents along the road, in a timely and efficient manner.

APPENDIX H: CONTINGENCY MEASURES
LARGE FUEL SPILL (DIESEL/JET A)

This procedure applies to the bulk fuel tanks and piping associated with the tanks or any release of fuels that exceeds the capacity of the spill kits positioned around the site.

INITIAL RESPONSE PROCEDURE

SAFETY FIRST

1. RESPOND QUICKLY

1. Identify the spilled material.
2. Ensure safety of yourself and others.
3. Shut off ignition sources - NO SMOKING.
4. Attend to Injured.
5. Assess the severity of the spill.
6. Call for assistance.
7. **On-site Manager mobilizes Emergency Response Team**.

    Meliadine Camp: 403 451 3236(37)
    AEM Exploration Office: 819 874 5880

8. Keep unnecessary people out of the area.
9. Wear impervious clothing, goggles, and gloves.
10. Approach spill from upwind **IF SAFE TO DO SO**.
11. Stop product flow if possible.
12. **Contain and recover spill as soon as possible (see below).**
13. Notify Henry Kablalik, Resource Management Officer, Rankin Inlet
    KablalikH@inac-ainc.gc.ca, 867 645 2831,
    Notify Peter Kusugak, Field Operations, Iqaluit
    KusugakP@inac-ainc.gc.ca, 867 975 4295, fax 867 979 6445

2. RESPOND SAFELY

1 Do not contain gasoline or aviation fuel if vapours might ignite.
2 Allow gasoline or aviation fuel spills to evaporate.
3 See Spill Response Plan Appendix A - Product Guides for further information.

3. OBTAIN AND REPORT SPILL DETAILS

NT-NU Spill Report Forms are in Appendix C of the FUEL MANAGEMENT AND SPILL CONTINGENCY PLAN.

Procedure for containing and recovering large amounts of released product.

Any equipment on site can be diverted to help contain and recover a large spill.

Spill on Land

Available Equipment:
Spill kits positioned around site.
Aquadams
Excavating and hauling equipment
Rolls of absorbent matting (Boart Longyear)

- For slow moving spill, use absorbents to begin absorbing spilled product immediately.
- For fast moving spill, divert or allow product to accumulate in natural or constructed depression using aquadams, constructed sumps, constructed berms or constructed trenches.
- Transfer absorbent materials to containers for disposal to waste disposal facility.
- Under safe conditions, ignition of pooled product may be appropriate.
- Excavate impacted soils and place in available land treatment area, instaberms and/or or lined and bermed areas constructed as fuelling stations.

Spill on or Impacting Water

Water impacts are the most serious spills because they can negatively affect water quality and aquatic life.

Available Equipment:
Spill kit absorbents positioned around site.
Boat
Oil-Soaker Booms

The JS Redpath portal site includes 16 – 3 meter oil-soaker booms among its safety equipment. The booms are meant to be deployed in the event of a hydrocarbon spill on water.

- Large impacts to water bodies should immediately be contained using oil-soaker booms and the boat if necessary. The boat can be flown to a remote watershed if necessary. Contained product should be absorbed using available absorbents.
- Maintain booms in place after visible product has been cleaned up to allow remaining product to evaporate.
- Under safe conditions, ignition of floating product may be appropriate.
- In streams the construction of weirs or barriers using available plywood may be appropriate. The weir should be constructed to allow water to flow under and product to accumulate at the water surface. Accumulated product can be collected using available sorbent materials.
- Assess shoreline condition if necessary and apply appropriate clean-up strategy in consultation with consultants and regulators.

Spill on Ice

Available Equipment:
Spill kit absorbents positioned around site.
Rolls of absorbent matting (Boart Longyear)
Shovel and scrapers, bulldozer

Spills on ice are generally the easiest to contain due to the impermeable nature of ice. All attempts must be made to prevent spills from entering ice covered waters as there is no easy method for containment and recovery of such spills.

- Use absorbents to begin absorbing spilled product immediately.
- Scrape ice surface to remove residual product.

Disposal of Materials

In all cases absorbent materials used in the clean-up should be transferred to an approved hazardous waste containers and prepared for transfer to a hazardous waste facility. Soils will be land farmed in accordance with criteria adopted by the Kivalliq Inuit Association.

APPENDIX I

CONSOLIDATION OF SPILL CONTINGENCY PLANNING AND REPORTING REGULATION, SCHEDULE B