



## **8-D.6: Spill Contingency Plan**

# ADDENDUM



**AGNICO EAGLE**

<b>Project Name:</b>	Meadowbank Gold Project	
<b>Plan / Version:</b>	Spill Contingency Plan	Version WT; June 2016
<b>NIRB Requirement:</b>	Project Certificate No. 004	<b>Condition:</b> 44, 24(commitment)
<b>NWB Requirement:</b>	2AM-MEA-1525	<b>Condition:</b> Part B, Item 14
<b>Addendum:</b>		
<b>Section Change</b>	<b>Specify: Update or New</b>	<b>Details</b>
Appendix N	New	WT Addendum



MEADOWBANK MINE

**Spill Contingency Plan**

**Meadowbank Mine Site  
All Weather Access Road (AWAR)  
Whale Tail Pit  
Whale Tail Haul Road  
Baker Lake Facilities**

In Accordance with Water License 2AM-MEA1525

Prepared by:  
Agnico Eagle Mines Limited – Meadowbank Division

Version WT  
June 2016

## **EXECUTIVE SUMMARY**

This document presents the Spill Contingency Plan for Agnico Eagle Mines Limited (Agnico Eagle) Meadowbank Mine Site, All Weather Access Road (AWAR), Whale Tail Open Pit, Whale Tail Haul Road, and Baker Lake Marshalling Facilities, which is a requirement of the Meadowbank Gold Project Type A Water License No. 2AM-MEA1525 issued on July 23, 2015.

The Spill Contingency Plan (SCP) designates lines of authority, responsibility, establishes proper reporting and details plans of action in the event of a spill. This plan applies to the operational phase of the Project and is applicable to all Agnico Eagle employees and any contractors associated with the project located at latitude 65°01'52"N and longitude 96°04'22"W approximately 70 km north of Baker Lake in Nunavut including the Baker Lake Marshalling Facilities located at latitude 64°18'36"N and longitude 95°58'04"W, Whale Tail Open Pit located at latitude 64°24'14" and 96°40'50", the All-Weather Access Road (AWAR), and the haul road between Meadowbank and Whale Tail sites.

## **IMPLEMENTATION SCHEDULE**

As required by Water License 2AM-MEA1525, Part B, Item 14, the implementation schedule for this Plan is effective immediately (June 2016) subject to any modification proposed by the NWB as a result of the review and approval process.

## **DISTRIBUTION LIST**

Agnico Eagle - Environmental Superintendent

Agnico Eagle – General Mine Manager

Agnico Eagle – Engineering Superintendent

Agnico Eagle – Health and Safety Superintendent

Agnico Eagle – Geology Superintendent

Agnico Eagle – Mill Superintendent

Agnico Eagle – Maintenance Superintendent

Agnico Eagle – Mine Superintendent

Agnico Eagle – Energy & Infrastructure Superintendent

Agnico Eagle – General Services Superintendent

## DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
1	08/08/08			Comprehensive plan for Meadowbank Mine Site, Exploration Camp and Baker Lake Facilities
2	11/12/04			Update of Contacts, Spill management materials, include AWAR map and Spill KIT Location Map
3	12/07/25			Update of the hazardous materials stored on site
4	2013/11			Comprehensive revision and update with info for Baker Lake Jet-A Tank
5	2014/11	Appendices I & J		Include the prohibition of adding neutralizing chemicals to drainages or near or within water bodies
6	2015/09	3 Table 4 5.1.3 5.6 Appendix L Appendix M		Change definition of a major spill and minor spill Contact Information Add point that procedure MBK-ENV-0016 will be followed for reporting spills Addition of section on event monitoring. Seepage monitoring included in section. Dyno Nobel Emergency Response Plan added in appendix J MBK-ENV-0016 Spill Response Procedure Added
WT	2016/05	Complete document		Added Whale Tail open pit and haul road to the Spill Plan. Spills at the Whale Tail open pit will be subject to this Plan.

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## LIST OF APPENDICES

**(Please refer to the approved Meadowbank Mine Spill Contingency Plan for many of the below appendices)**

- Appendix A: Environmental Department weekly inspection template
- Appendix B: Shipboard Oil Pollution Emergency Plan
- Appendix C: Shipping company certificate of entry and acceptance boats  
Communication protocol  
Safety management system for entry into confined water  
Safety management system for monthly safety meeting



- Appendix D: NWT/NU Spill Report Form
- Appendix E: General Response Procedures for Spilled Chemical Substances Explosives  
E.1 Ammonium Nitrate  
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- Appendix J: General Response Procedures for Spilled Chemical Substances: Corrosive Substances  
J.1 Acids, Liquids  
J.2 Acids, Solids  
J.3 Bases/Alkali, Liquids  
J.4 Bases/Alkali, Solids
- Appendix K: Agnico Eagle Spill Response Training Records
- Appendix L: Dyno Nobel Emergency Response Plan
- Appendix M: MBK-ENV-0016 Spill Reporting Procedure

## **SECTION 1 • INTRODUCTION**

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### **1.1 PURPOSE AND SCOPE OF THE SPILL CONTINGENCY PLAN**

The overall purpose of creating a spill contingency plan is to minimize the impacts of spills by the establishment of predetermined lines of response and plans of action. This plan has been designed to facilitate effective communication and the efficient clean-up of potentially hazardous materials spills. These materials include:

- Hydrocarbon liquids such as diesel fuel, aviation fuel (Jet-A), gasoline, hydraulic oil;
- Soluble solids such as ammonium nitrate prill;
- Soluble liquids, such as glycols, acids, paints; and
- Corrosive liquids such as sulphuric acid and corrosive solids such as sodium cyanide.

More specifically the objectives of this Spill Contingency Plan (SCP) are to:

- Identify roles, responsibilities, and reporting procedures;
- Provide readily accessible emergency information to the cleanup crews, management, and government agencies;
- Comply with federal and territorial regulations and guidelines pertaining to the preparation of contingency plans and notification requirements;
- Promote the safe and effective recovery of spilled materials; and
- Minimize the environmental impacts of spills to water or land.

This plan has been prepared in accordance with the following reference documents:

- Indian and Northern Affairs Canada (INAC) 2007. *Guidelines for Spill Contingency Planning*;
- Government of Nunavut (GN), *Contingency Planning and Spill Reporting in Nunavut. A Guide to the New Regulations*;
- Government of Nunavut (GN) 2002, *Guideline General Management of Hazardous Wastes in Nunavut*; and
- Northwest Territories Resources Wildlife and Economic Development, Environmental Protection Service. 1988. *Spill Contingency Planning and Reporting Regulations*.

## **SECTION 2 • PROJECT DESCRIPTION**

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The Meadowbank Gold Project, operated by Agnico Eagle Mines Limited, is located approximately 70 km north of the Hamlet of Baker Lake in Nunavut. The project is located on Inuit Owned surface lands (IOL BL-14) and has the following coordinates:

Latitude: 65°01'52"N  
Longitude: 96°04'22"W  
NTS map sheet 66H/1

Meadowbank Project components include marshalling facilities in Baker Lake, the 110 kilometer All-Weather Access Road (AWAR) from Baker Lake, the Meadowbank mine site (Figure 8), the Whale Tail pit, and the haul road between Meadowbank and Whale Tail sites. The Meadowbank mine site consists of the process plant, landfarm, sewage treatment plant, water intake, accommodation buildings, power plant, tank farm, warehouse, truck shop, emulsion plant, open pit (Figure 1) and Vault area (Figure 2). The Baker Lake Marshalling Area consists of a laydown transfer area to temporarily store materials prior to the delivery to the Meadowbank mine site. The Baker Lake fuel farm consists of six (6), ten (10) million litre tanks for diesel fuel, within secondary containment, (Figure 3) and twenty (20), 100,000L double walled tanks, within secondary containment, for aviation fuel (Figure 4). The Whale Tail Pit camp (Figure 5) consists of sewage treatment plant, water intake, accommodation buildings, power plant, 500,000 bulk fuel storage area, warehouse, maintenance shop, and open pit.

The fuel is delivered in bulk by sealift to the Baker Lake fuel farm. From there, fuel is hauled to the Meadowbank and Whale Tail sites by contractor tanker trucks on the AWAR and on the Whale Tail haul road, respectively. Diesel fuel coming from the Baker Lake Tank Farm is stored at the Meadowbank site into a single 5.6 million litre tank, within secondary containment, and the aviation fuel into eight (8) – 50,000L double walled tanks at the airstrip. Fuel at the Whale Tail site will be stored in 2 – 250,000 L tanks within secondary containment. From there, the diesel is redistributed around site by an onsite fuel truck to site fuel tanks. Fuel storage locations have been designed to meet the CCME guidelines for Aboveground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.

Emergency spill response equipment (i.e. spill kits) is installed at each fuel storage location. Spill kits contain the appropriate type, size and quantity of equipment for the volume and type of product present at the storage location. Transport trucks, heavy equipment and light vehicles are all equipped with spill kits.

Construction at the mine site began with the issuance of the Type A Water License and other relevant authorizations in July 2008 with operations commencing in January 2010. Mining of ore is expected to cease in Q3 2018. The Meadowbank mine is expected to extend by three to four years through the operation of the Whale Tail satellite open pit which will supply ore to the Meadowbank process plant. Construction of the Whale Tail open pit is expected to commence beginning in 2018, or as soon as approvals are received.

### **2.1 PREVENTION AND INSPECTIONS**

The first step in spill contingency planning is to take actions to prevent spills from occurring. Transport, transfer and storage of materials are performed by trained personnel using secondary containment, with well-maintained equipment and containers. Refueling stations in Baker Lake, at the mine site, and at the Whale

Tail site are equipped with a lined area to contain any minor leaks or spills while refueling. Transfer of fuel from tanks to tanker trucks are performed with the aid of fuel pumps. Good housekeeping practices are adopted especially in areas such as storage facilities, loading and unloading zones. Site orientations are conducted with all employees and spill prevention and response is discussed in detail. Regular worksite inspections are conducted to identify measures to minimize the risk of spills. All personnel are trained to be aware of the potential hazards associated with the fuel/chemicals with which they are assigned to work. In addition to work site inspections conducted by area specific employees, the Environmental Department conducts weekly inspections to audit facilities handling or storing hazardous materials (Appendix A).

Agnico Eagle supports the following general principles for spill prevention:

- Provide up-to-date and accessible Material Safety Data Sheets (MSDS) for all hazardous materials;
- Regular inspections of fuel/chemical storage areas for leaks (including flex connectors and plumbing) and platform shifting;
- Regular inspections of hazardous materials storage areas;
- Train workers in the use of safe work procedures for hazardous materials, and procedures to clean up spills;
- Encourage workers to take reasonable measures to prevent spills;
- Keep drums/containers sealed or closed when not in use;
- Place drums/containers within a suitable form of secondary or spill containment;
- Keep “overpack” or “salvage” drums nearby to contain leaking drums;
- Keep storage areas secure from unauthorized access;
- Segregate incompatible materials;
- Ensure chemical storage areas are adequately protected from weather and physical damage; and
- Provide adequate spill response materials at storage areas (details of spill response equipment are outlined in Section 8).

Figure 1 : Layout Meadowbank Mine Site

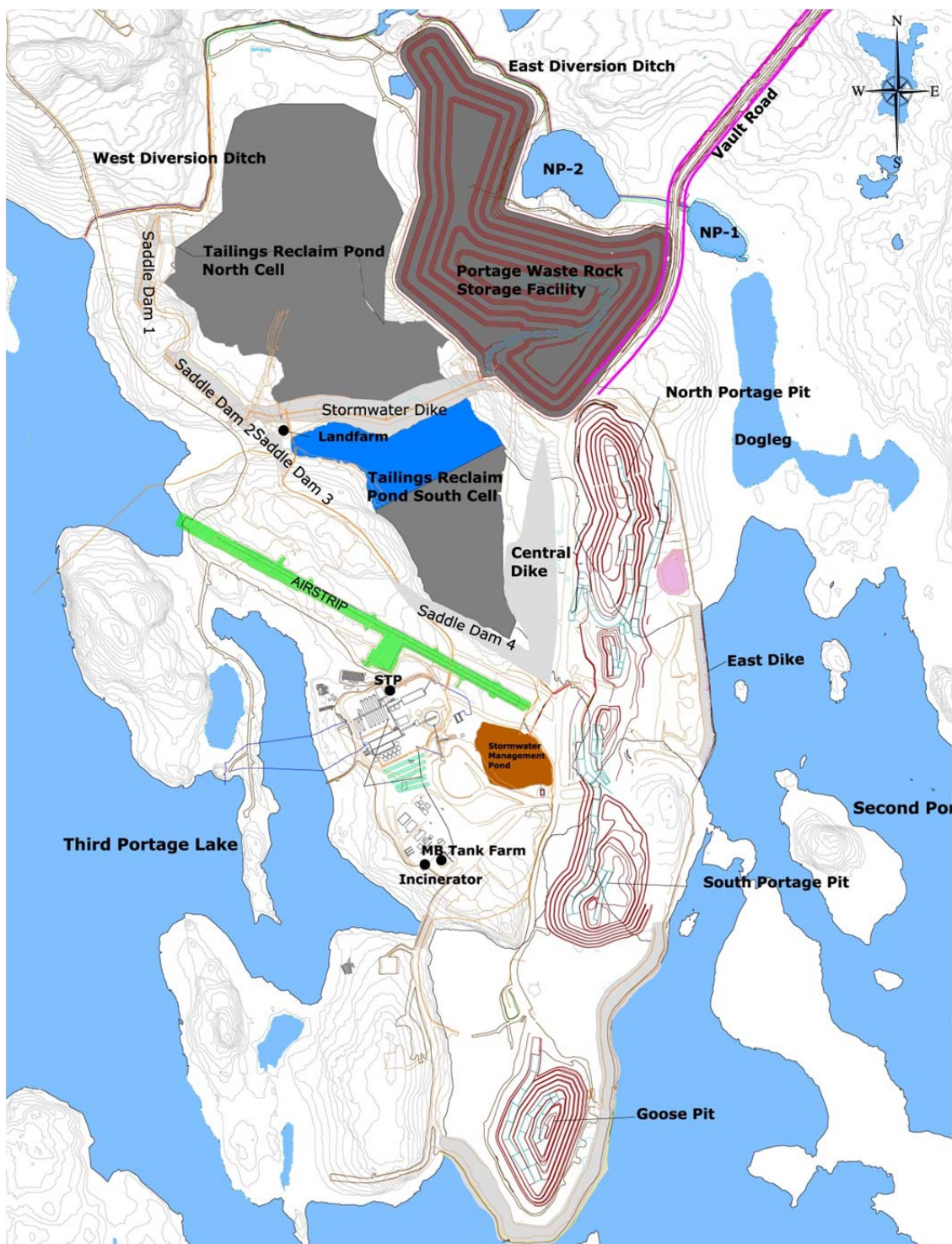




Figure 2 : Layout Vault

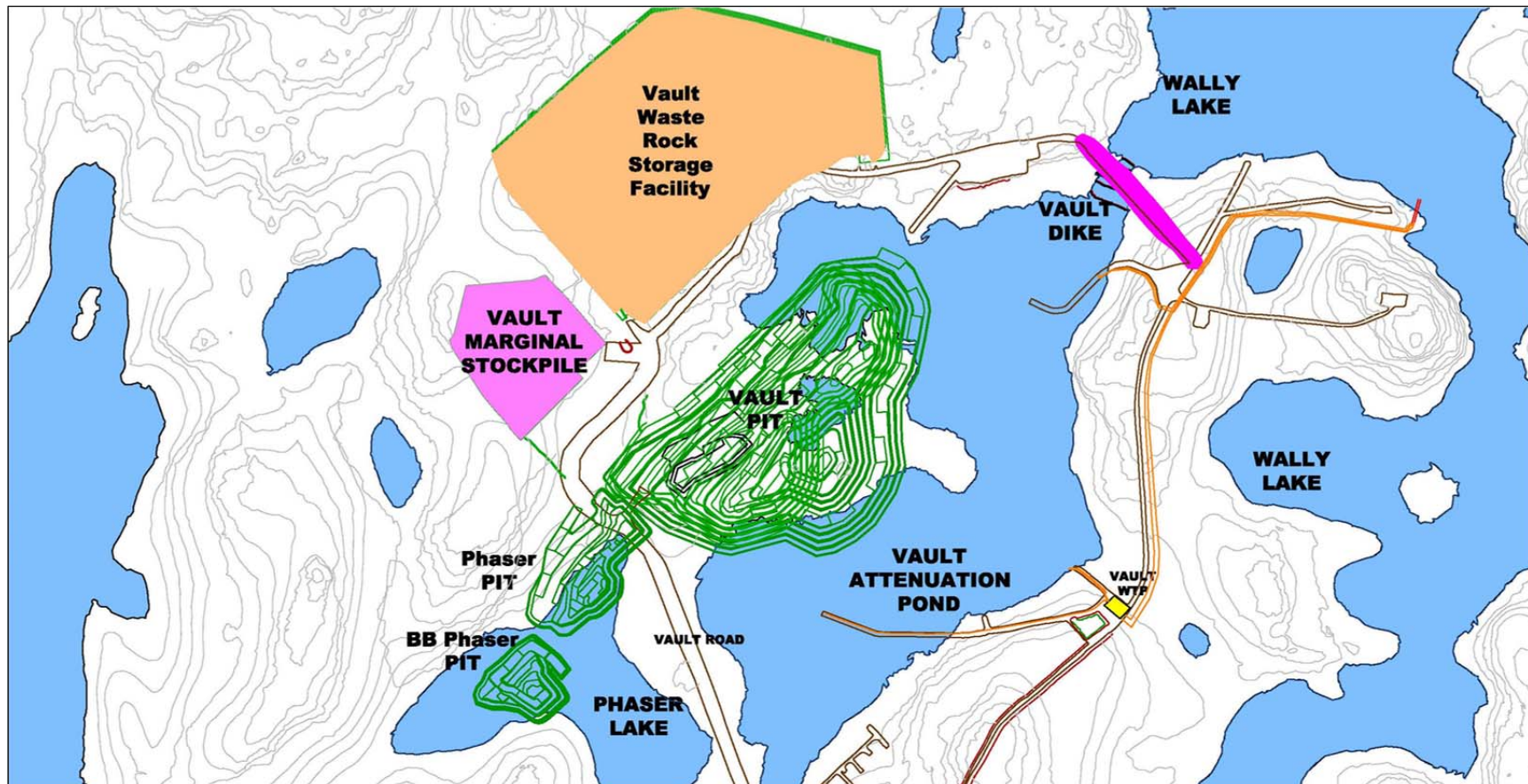
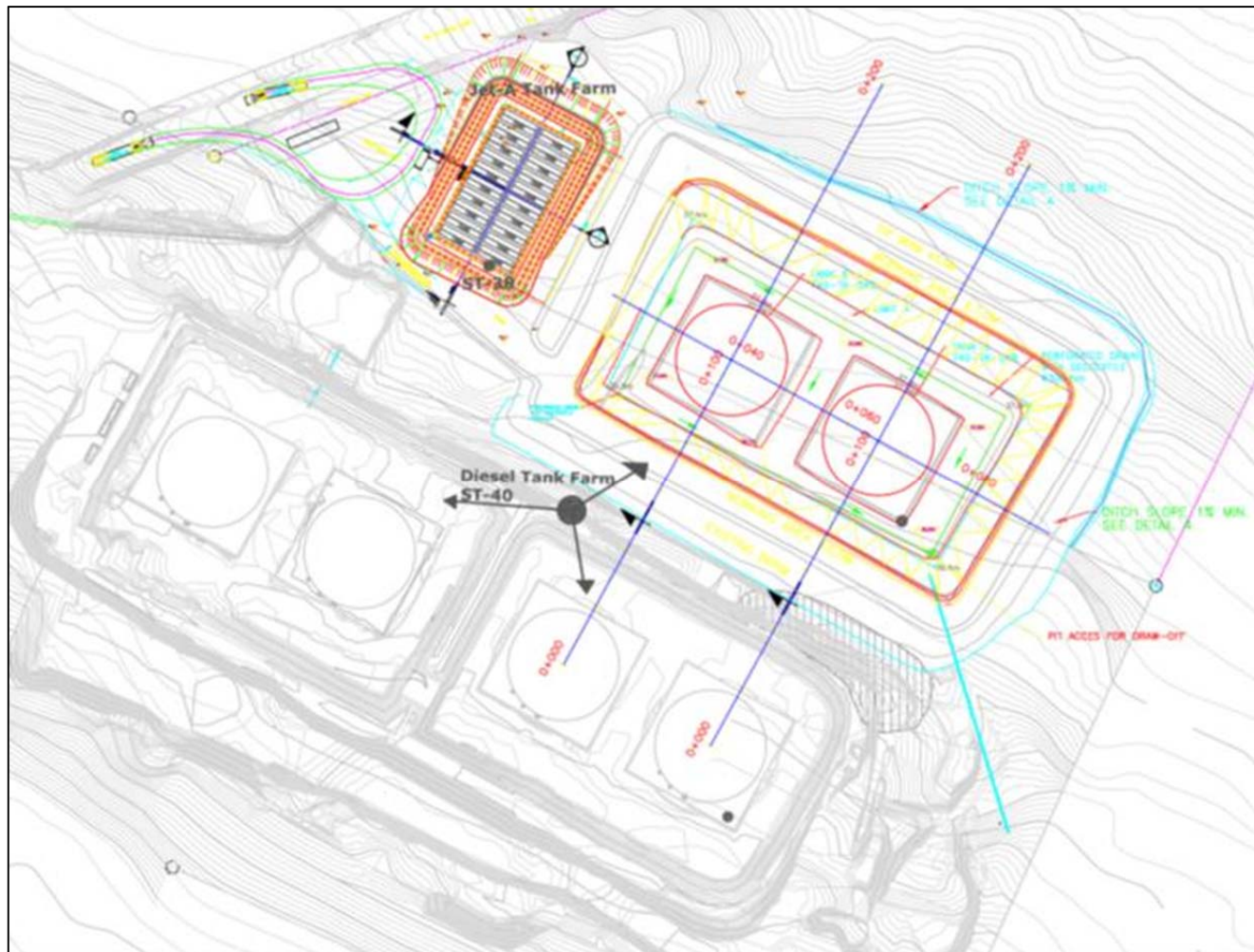
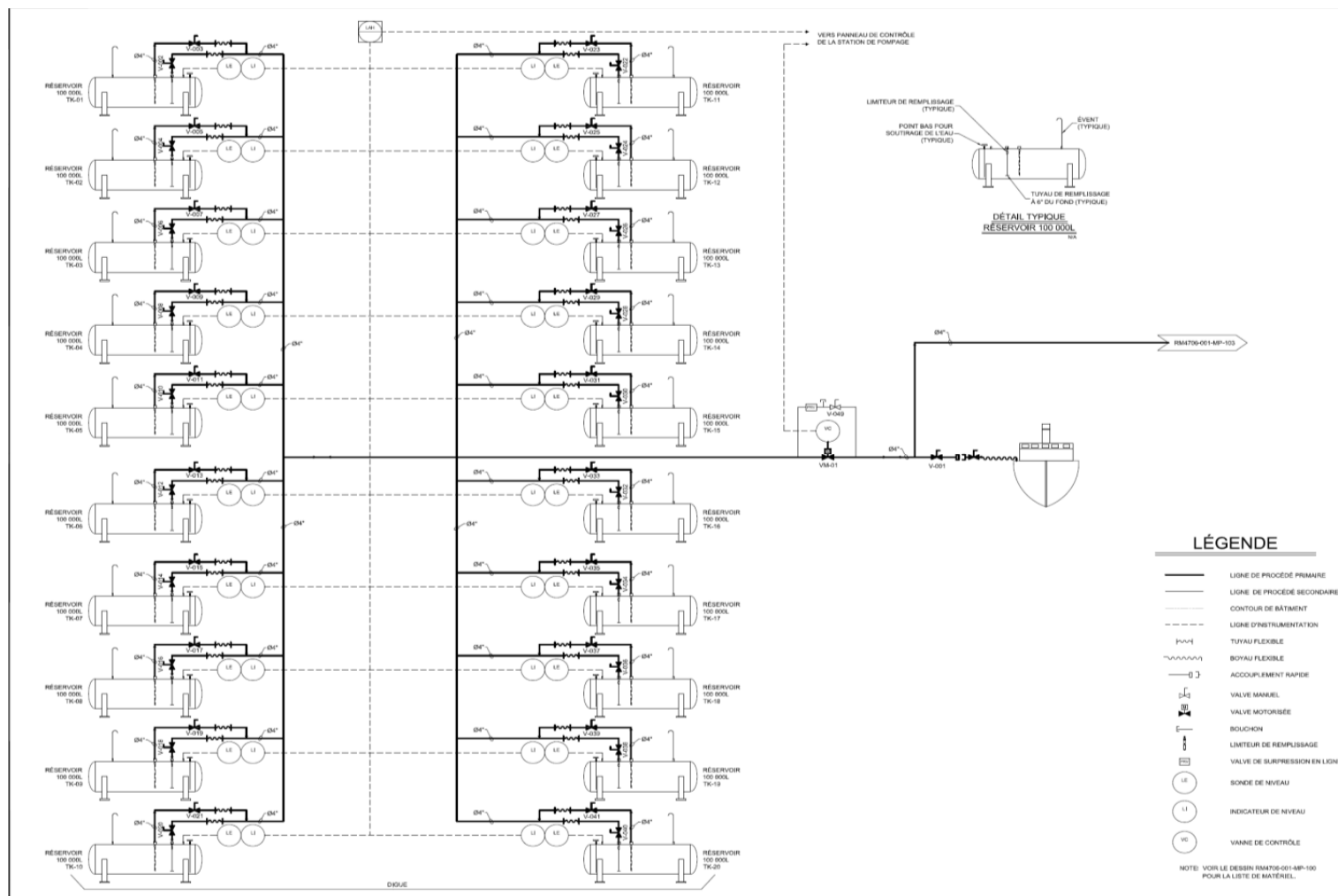


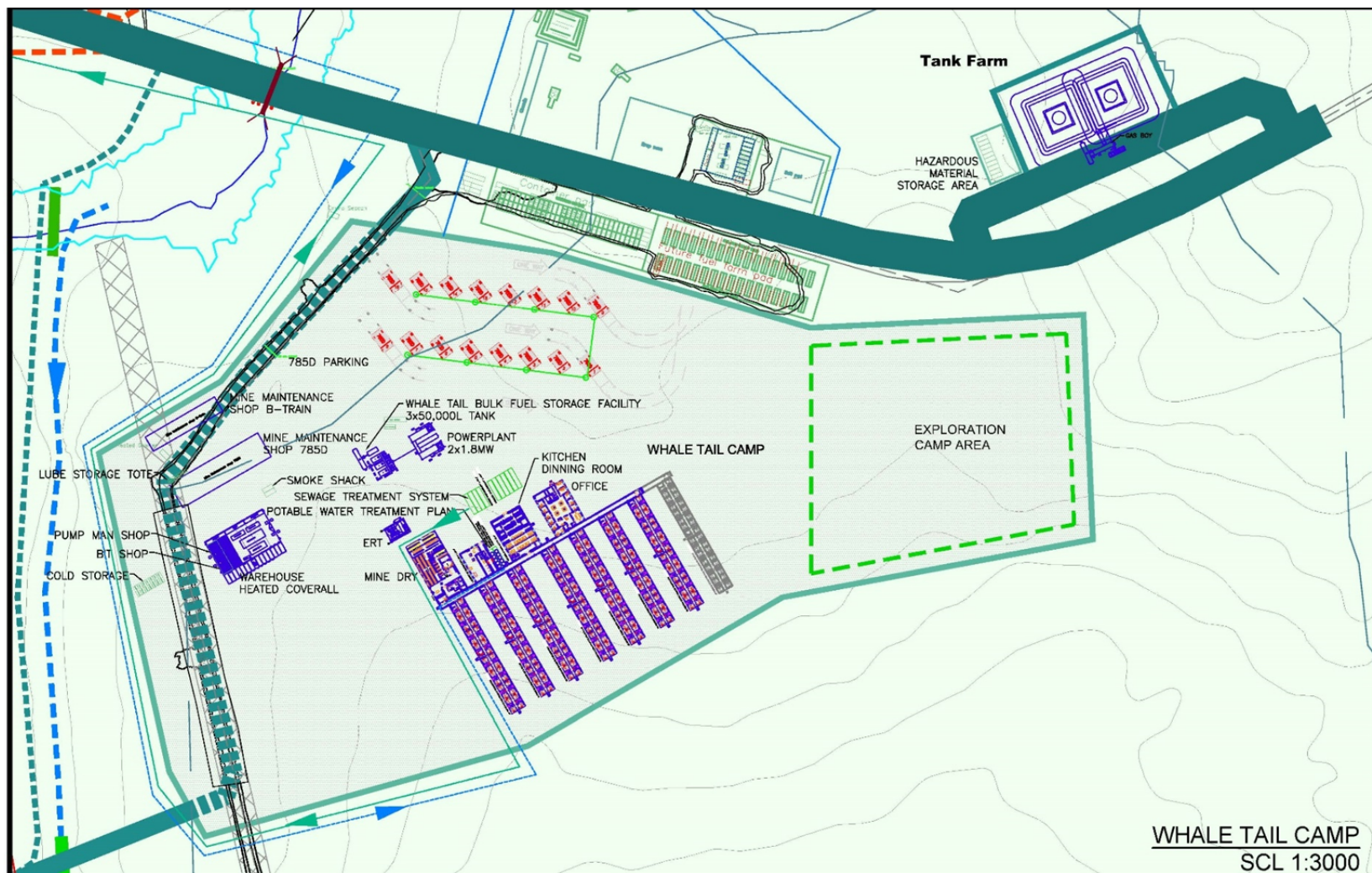
Figure 3 : Baker Lake Diesel Fuel Tank Farm



**Figure 4 : Baker Lake Jet-A Fuel Tank Farm**







**Figure 5.**  
**Layout**  
**Whale**  
**Tail**  
**Open Pit**  
**camp**

## SECTION 3 • DEFINITIONS

### 3.1 WHAT IS A SPILL?

For the purposes of this plan, a major spill is defined as an accidental release of product into the environment that has the potential for adverse impacts to the receiving environment, Agnico Eagle property or human health. This can include potential impacts to water, surface and groundwater, land, equipment, buildings, local communities, human health and the atmosphere.

A minor spill is defined as any spill that does not involve a toxic, reactive, or explosive material in a situation that does not pose a significant risk to the environment, human health or Agnico Eagle property. Minor spills are generally contained within Agnico Eagle facilities.

### 3.2 MATERIALS AND REPORTABLE (TO REGULATORY AUTHORITIES) SPILLS ON SITE

As a precaution, if there is any doubt as to whether the quantity spilled meets the minimum thresholds for reporting to regulatory authorities listed in Table 1, the spill incident will be reported. Furthermore, Agnico Eagle maintain a detailed log of all spills reportable to authorities and those non-reportable for all materials listed in Section 1.1. As part of Agnico Eagle's overall environmental management system and in the spirit of a continuous improvement of environmental performance, procedures will be implemented to ensure **all** spills irrespective of location are reported to the Meadowbank Environment Department.

To ensure compliance with Section 36(3) of the *Fisheries Act* and Section 35 of the *Migratory Bird Regulations* all spills of fuel or hazardous materials, regardless of quantity, into a water body (including frozen), shall be reported immediately to the NT-NU 24-HOUR SPILL REPORT LINE (at 867.920.8130).

**Table 1 - Spill quantities that must be reported to the NT-NU 24-HOUR SPILL REPORT LINE**

Transportation Class	Type of Substance	Compulsory Reporting Amount
1	Explosives	Any amount
2.1	Compressed gas (flammable)	Any amount of gas from containers with a capacity exceeding 100 L
2.2	Compressed gas (non-corrosive, non- flammable)	Any amount from containers with a capacity exceeding 100 L
2.3	Compressed gas	Any amount
2.4	Compressed gas (corrosive)	Any amount
3.1, 3.2, 3.3	Flammable liquid	100 L
4.1	Flammable solid	25 kg
4.2	Spontaneously combustible solid	25 kg
4.3	Water reactant solids	25 kg
5.1	Oxidizing substances	50 L or 50 kg
5.2	Organic peroxides	1 L or 1 kg
6.1	Poisonous substances	5 L or 5 kg

Transportation Class	Type of Substance	Compulsory Reporting Amount
7	Radioactive substances	Any amount
8	Corrosive substances	5 L or 5 kg
9.1 (in part)	Miscellaneous substances	50 L or 50 kg
9.2	Environmentally hazardous	1 L or 1 kg
9.3	Dangerous wastes	5L or 5 kg
9.1 (in part)	PCB mixtures of 5 ppm or more	0.5 L or 0.5 kg
None	Other contaminants	100 L or 100 kg
None	Seepage from TSF and RSF	Any amount

**Note:** L = litre; kg = kilogram; PCB = polychlorinated biphenyls; ppm = parts per million.

## **SECTION 4 • RESPONSE ORGANIZATION**

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This section addresses the response organization and the responsibilities of each individual during response to an incident.

Figure 6 illustrates Agnico Eagle's Spill Reporting Procedure in the event of a major spill and Sections 4.1 - 4.9 list the major responsibilities of site staff that will be participating in the emergency response management.

The first person (first responder) to notice, or come in contact with, any spill situation either initiates a Code 1 (i.e. If a tanker truck overturns on the AWAR) or reports to his/her immediate supervisor (i.e. All other spills on land or water). The supervisor is responsible to report the incident to the designated Incident Commander for a major spill or to the environmental department for a minor spill. If a Code 1 is initiated, the Incident Commander will respond in conjunction with the Emergency Response Team (ERT). Major responsibilities such as initial coordination, spill clean-up and mobilizing the ERT are part of the Incident Commander's duties.

The Incident Commander will contact the Environmental Superintendent and/or General Mine Manager or alternate, who in turn will inform the Senior Vice President, Environment and Sustainable Development. After all information has been collected, the Environmental Superintendent or alternate will submit a spill report and follow up spill report to the NWT/NU Spill Line, Nunavut Water Board, Kivalliq Inuit Association and Indigenous and Northern Affairs Canada. Incidents that require media communications will be the responsibility of Agnico Eagle General Mine Manager or alternate.

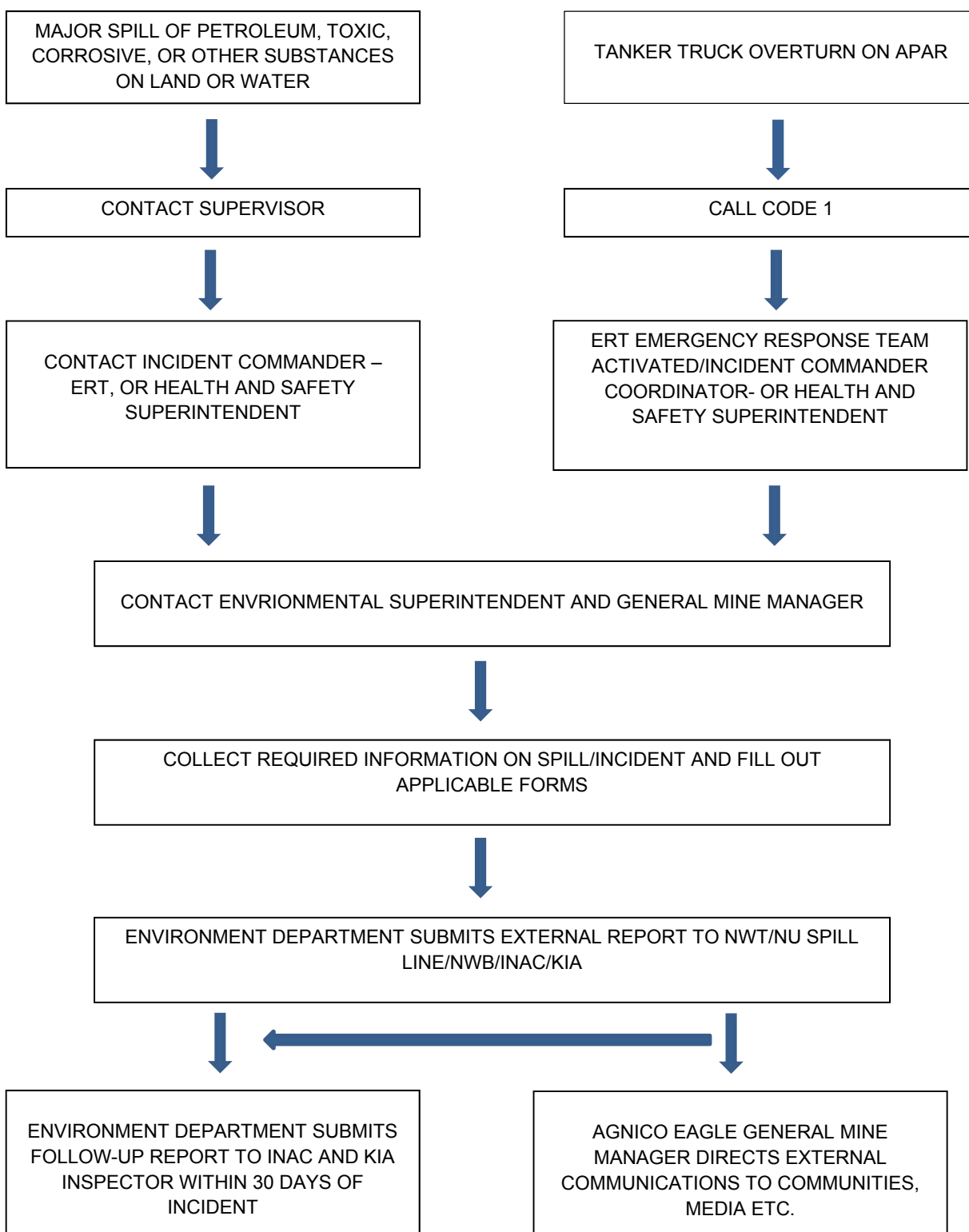
In the event of a major spill during a ship-to-ship transfer or due to unforeseen circumstances, the shipping company will be solely responsible for responding to the spill. The containment and clean-up of inadvertent spills resulting from the tankers in transporting the fuel is the responsibility of the shipping company. In the unlikely event where a major fuel spill becomes unmanageable, the shipping company could call on external resources such as the Canadian Coast Guard for assistance. In these situations, Agnico Eagle would provide whatever assistance it can to the shipping company<sup>1</sup>. Due to the lack of resources Agnico Eagle possess to counter act such a large scale marine spill, Agnico Eagle's assistance would be limited to providing support to preserve the shoreline environment. Agnico Eagle would put its resources to the best use possible during such an event, and assist as much as possible with the resources at hand. The Shipboard Oil Pollution Emergency Plan (SOPEP) (Appendix B) is the responsibility of the shipping company; it covers the ship-to-ship transfer of fuel near Helicopter Island. Please refer to the *Oil Pollution Emergency Plan* for more details. Please refer to Appendix C for certificate of entry and acceptance boats of shipping company, communication protocol, safety management system for entry into confined water and monthly safety meeting forms.

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<sup>1</sup> The Emergency Response Team will not be equipped or trained to respond to spills offshore in the Marine environment. They will however be able to respond to spills in the near shore area.

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**Figure 6: Major spill/incident reporting procedure**



#### **4.1 FIRST RESPONDER**

The person who has caused a spill or the first to observe the spill is the first responder. The responsibilities of the first responder are as follows:

- In case of a tanker truck overturn, initiate a Code 1. Remain on radio to provide guidance to the ERT;
- In case of spill to land or water, contact the supervisor to report the incident;
- Identify and contain the spill, IF SAFE TO DO SO; and
- Participate in spill response as a member of the clean-up crew.

#### **4.2 SUPERVISOR**

The responsibilities of the Supervisor are as follows:

- Initial assessment of the severity of the incident;
- Contacts the Incident Commander or Environmental Department;
- Gathers facts about the spill; and
- Participate in spill response as a member of the clean-up crew.

#### **4.3 INCIDENT COMMANDER**

Responsibilities of the Incident Commander are as follows:

- Assume complete authority over cleanup personnel and the spill scene, as well as assume responsibility for all mitigation efforts;
- Evaluate the initial situation and assess the magnitude of the problem;
- Activates the initial response plan;
- Alert and assemble key personnel in the response team, as deemed appropriate, to handle the situation;
- In consultation with the Environmental Superintendent or designate, develop the overall plan of action for containment and cleanup of the specific incident, as well as direct and implement the plan;
- Ensure assigned responsibilities are carried out and the activities of team members are coordinated;
- Assess the requirements for people, equipment, materials, and tools to contain the spill in light of what resources are immediately available; urgency will depend on the nature of the spill; and

- In consultation with the Environmental Superintendent or designate mobilize any additional resources that may be required and arrange for the transportation of necessary personnel and/or materials to the site.

#### **4.4 EMERGENCY RESPONSE TEAM**

Agnico Eagle has an Emergency Response Team (ERT) that is trained and responsible for controlling major spills, including those that could occur should a tanker truck overturn along the AWAR or on the Whale Tail haul road, and assisting with medical and other emergencies that may occur at the Meadowbank Mine, wherever the location. ERT team members attend regular training sessions.

#### **4.5 EMERGENCY RESPONSE TEAM COORDINATOR**

The responsibilities of the Emergency Response Team Coordinator (ERTC) are as follows:

- Mobilize all ERT personnel, equipment, personal protective equipment and supplies as required to the site of the spill;
- Assist Incident Commander in obtaining any additional resources not available on site;
- Ensure that appropriate PPE is worn properly;
- Assist in developing and implementing emergency response training programs and exercises; and
- Ensure that all spill response personnel receive adequate training to fulfill their responsibilities as part of the ERT.

#### **4.6 ENVIRONMENTAL SUPERINTENDENT OR DESIGNATE**

The Environmental Superintendent or designate is responsible for implementing and maintaining the SCP. In addition, the Environmental Superintendent's or designates responsibilities in the case of a spill are to:

- Liaise with the Incident Commander;
- Provide technical advice on the anticipated environmental impacts of the spill;
- Advise on the effectiveness of various containment, recoveries, and disposal options, and suggest the most appropriate approach;
- Prepare and submit any formal reports (see Appendix D for NWT/NU Spill Report Form) to regulators and Agnico Eagle management detailing the occurrence of a spill;
- Contact the Senior Vice President Environment and Sustainable Development immediately for a major spill;
- Act as the spokesperson with regulatory and government agencies;

- If authorized by the General Mine Manager, act as a spokesperson with the public and media, as required;
- Implement a sampling protocol for the collection and analysis of samples to identify and monitor possible contaminant levels resulting from the spill;
- Ensure on-site resources for spill response and cleanup are available;
- Monitor the effectiveness of the cleanup operation and recommend further work, if necessary;
- Reviews incident occurrences and recommends preventative measures; and
- Assists in implementing training and simulation requirements for spill response personnel.

#### **4.7 GENERAL MINE MANAGER ON DUTY**

The General Mine Manager/designate is required to inform team members of the detailed nature of the operations to be performed in the event of a major spill during the operations phase. The responsibilities of the General Mine Manager/designate are as follows:

- Liaise with Agnico Eagle personnel resources and keep them informed of cleanup activities; and
- Assist the Incident Commander and ERT as needed, particularly in obtaining any additional resources not available onsite for spill response and cleanup.

#### **4.8 HEALTH AND SAFETY SUPERINTENDENT OR DESIGNATE**

The following are the responsibilities of the Health and Safety Superintendent or designate in conjunction with the Training Department:

- Maintain emergency and health and safety records;
- Assist in conducting emergency spill response exercises;
- Track all emergency and health and safety training that on-site staff have received, and when retraining will be required;
- Notify the Incident Commander (related to ERT) when retraining is required;
- Ensure that employees are retrained in appropriate emergency response skills, Workplace Hazardous Materials Information System (WHMIS) training, Hazard Communication (HAZCOM), Occupational Health and Safety Administration (OHSA) training, first aid, and respirator fit-testing prior to expiry of existing training certification; and
- Consult with appropriate organizations regarding retraining requirements and schedules.



#### 4.9 ON-SITE HEALTH CARE PROVIDERS

On-site medics are responsible for the following:

- Providing on-site first aid and other medical support; and
- Providing additional training for ERT members.

In addition to the health care providers on site, the Baker Lake Hamlet health professionals will be called first on the scene, if required.

#### 4.10 SPILL RESPONSE TEAM CONTACT INFORMATION

Internal contact information is contained in Table 2 for all Agnico Eagle personnel involved in spill recovery and subsequent reporting. Table 3 provides contact information for Agnico Eagle contractors present at the mine site and transportation contractors. Important external contacts such as regulatory agencies and health organizations are listed in Table 4. Table 5 provides contact information for external contractors should incident warrant assistance from outside sources.

**Table 2 - Internal Contacts**

Title	Name	Telephone No.
Sr. Vice President, Environment and Sustainable Development	Louise Grondin	416.847.8656 Cell: 819.724.2020
Vice President of Environment	Michel Julien	416-947-1212 ext. 3738 Cell: 514.244.5876
Corporate Director, Communications & Public Affairs	Dale Coffin	416.847.8669 Cell: 647.274.4154
Manager of Regulatory Affairs Nunavut	Stephane Robert	819.759.3700 ext. 5188 Cell: 819.763.0229
Manager of Nunavut Services Group	Jason Allaire	819.759.3555 ext. 6968 M: 819.355.2608
Meadowbank General Mine Manager	Bertin Paradis	819.759.3555 ext. 6725 Cell: 819.355.9348
H&S Superintendent or H&S Ass. Superintendent	Normand Ladouceur or Yves Levesque	819.759.3555 ext.6720 Cell: 819.860.6258 or 819.759.3555 ext.6720 Cell: 819.856.9051
Emergency Response Counselors	André Rouleau Or Philip Beaudoin	819.759.3555 ext.6809 Cell: 819.355.2191 or 819.759.3555 ext.6809 Cell: 450.847.4214

Environmental Superintendent	Jamie Quesnel	819.759.3555 ext.6838 Cell: 819.856.0821
Senior Environmental Coordinator	Erika Voyer	819.759.3555 ext.6980
Environmental Coordinator	Robin Allard or Martin Theriault	819.759.3555 ext.6744 or 819.759.3555 ext.6759
Environmental Department	Environmental Technicians	819.759.3555 ext.6747/6759
Incident Commander	Erika Voyer Kevin Buck	867.793.4610 ext. 6980 867.793.4610 ext. 6838
On-site Medics	On-site Nurses	819.759.3555 ext.6734 or 6751
Site Security	On-site Security	(867) 793-4610 ext. 6748

**Table 3 - Contractor Contacts**

<b>Title</b>	<b>Telephone No.</b>	<b>Contact in Emergency for:</b>
Nolinor Aviation Services	Protocol Agent 867.759.3700 ext. 8008	Flight services for additional crew, or additional supplies
First Air	1-800-267-1247	Flight services for additional crew, or additional supplies
Calm Air	1-800-839-2256	Flight services for additional crew, or additional supplies
Dyno Nobel Explosives Ltd.	(819) 825-5441	Heavy Equipment, Man power, Emergency Blasting
Woodward Group of Companies (Shipping)	(709) 896-2421	Fuel Hauler
Baker Lake Contracting & Supplies	(867) 793-2831 Press #1	Man power, equipment, trades personnel i.e. pipefitter, plumber, electrical
Peter's Expediting	(867) 793-2703	Equipment, man power, Ground transportation services
Arctic Fuel Services	(867) 793-2311 Office (867) 793-2301 Supervisor	Fuel hauling, trucking, man power.

**Table 4 - External Contacts**

Organization/Authority	Telephone Number	Fax Number
NT-NU 24-Hour Spill Report Line	(867) 920-8130 spills@gov.nt.ca	(867) 873-6924
Workers Safety and Compensation Commission	(867) 979-8500	(867) 979-8501
Kivalliq Inuit Association	(867) 645-5725	(867) 645-2348
Nunavut Water Board	(867) 360-6338	(867) 360-6369
INAC Inspector	(867) 645-2830	(867) 979-6445
Environment Canada – West and North Region	780-951-8600	780-495-2615
Government of Nunavut – Department of Environment	(867) 975-7700	(867) 975-7742
Kivalliq Health Services – Baker Lake	(867) 793-2816 <i>Dial 0</i>	(867) 793-2812
Baker Lake Hamlet Office	(867) 793-2509	
Baker Lake Fire Emergency	(867) 793-2900	
RCMP Regular Hour	(867) 793-0123	
RCMP 24 Hour Emergency Number	(867) 793-1111	
Canadian Coast Guard (in the event of a spill to the marine environment)	(800) 265-0237	(519) 337-2498
Superintendent Environmental Response	(519) 383-1954 (519) 381-6186 (cell)	
Transport Canada – Marine Safety		
Jaideep Johar	(204) 984-0397	
Ian Salisbury	(780) 495-8360	(780) 495-8607

*\*All above phone numbers are current as of March 9, 2016.*

## **SECTION 5 • ACTION PLAN**

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Spills may be the result of any of the following occurrences:

- Tanks, drums or containers may develop leaks or rupture;
- Failure of equipment such as valves, piping or containment structures;
- Overfilling;
- Improper storage;
- Spills during transfer of fuel, chemicals or waste products;
- Spills resulting from accidents during transportation; and.
- Seepage from tailings impoundment or rock storage facilities that may migrate off site to receiving water or land.

### **5.1 INITIAL ACTION**

For all spill emergencies, it is required that priority actions be undertaken. These are:

- Respond Quickly;
- Ensure Safety; and
- Report the Spill.

#### **5.1.1 Respond Quickly**

- Identify the spilled material;
- Be alert – ensure safety of yourself and others by notifying them of the incident;
- Shut off ignition sources such as vehicles and unplug electrical equipment – NO SMOKING;
- Attend to the injured;
- Assess the severity of the spill; and
- Contact the Incident Commander, identify the location and request assistance as required. If required the Incident Commander will mobilize the Emergency Response Team.

The primary form of ensuring safety is by using preventative measures. All personnel who deal with chemicals must have training in first aid and safe materials handling, including the Workplace Hazardous Materials Information System (WHMIS). In addition, regular training updates and site- specific exercises/drills are integral to preventing incidents.

### **5.1.2 Ensure safety**

- Consult the MSDS and Product Guides for further information on the substance;
- Keep people away from spill site;
- Wear appropriate PPE such as impervious clothing, goggles, and gloves when containing the spill;
- Approach spill from upwind IF IT IS SAFE TO DO SO;
- Assess whether the spill, leak, or system failure can be readily stopped or brought under control;
- Stop product flow or leak if possible and IF IT IS SAFE TO DO SO;
- Do not contain compounds (e.g. gasoline, aviation fuel) if vapors might ignite – allow them to evaporate; and
- Depending on the type of compound spilled and IF IT IS SAFE TO DO SO, contain product using booms, berms, absorbent pads, earthen dike, trenches or improvise with materials at hand.

### **5.1.3 Report Spill**

- Spill reporting will follow Spill Reporting procedure MBK-ENV-0016. This procedure can be found in Appendix K
- Obtain all necessary information to complete the spill report form for spills that meet the criteria listed in Table 1. Spills that meet regulatory reporting criteria must be reported to the NWT-NU 24 Hour Spill Line/AANDC/Kivalliq Inuit Association, and the Nunavut Water Board by Agnico Eagle Environment Staff. Minor spills that do not meet regulatory reporting criteria must still be reported to the Environment Department. This must be done within 24 hours using the Agnico Eagle internal Spill Report Form; and
- For spills that meet regulatory reporting criteria, a detailed spill report will be submitted to the AANDC Water License Inspector and the KIA Land's Inspector by Agnico Eagle Environment Staff no later than 30 days after the initial reporting of the spill. This report will contain the amount and type of spilled product, the GPS location of the spill and the measures taken to contain, cleanup and restore the spill site.

Procedures will vary depending on the season and materials spilled. The MSDS for spilled materials and/or Transport Canada's "Emergency Response Guidebook" must be consulted to ensure that safety procedures are followed. Response procedures specific to spills on land, water, snow and ice are presented in the following sections as general guidelines.

## **5.2 SPILLS ON LAND**

Response to spills on land will include control techniques involving the use of two types of barriers: dikes and trenches. Barriers should be placed down-gradient (down-slope) from the source of the spill, and as close as possible to the source of the spill. Barriers will slow the progression of the material spilled and will also serve

as containment to allow for recovery.

Depending on the volume spilled, the site of the spill as well as available material, a dike may be built with soil, booms, lumber, snow, etc. A plastic liner, if necessary, can be placed at the toe of and over the dykes to protect the underlying soil or other material and to facilitate recovery of the material. Dikes will be constructed in such a way as to accumulate a thick layer of free product in a single area (V-shaped or U-shaped).

Trenches are useful in the presence of permeable soil and when the spilled material is migrating below the ground surface. A plastic liner should be placed on the down-gradient edge of the trench to protect the underlying soil. Liners should not be placed at the bottom of the trench to allow water to continue flowing underneath the layer floating oil.

The use of absorbent materials to recover a large volume of spilled liquids such as petroleum based material should be avoided. Large volumes of free-product should be recovered, as much as possible, by using vacuums and pumps, and containerized. Mixtures of water and fuel may be processed through an oil-water separator. However absorbent materials work well for smaller volumes of spilled hydrocarbon based materials such as fuel. Absorbent sheets should be used to soak up residual fuel on water, on the ground (soil and rock), and on vegetation. Peat moss may also be sprinkled on vegetation to absorb films of petroleum products.

### **5.3 SPILLS ON WATER**

Response to spills on water will include procedures that include containment, diversion and recovery techniques. The following elements must be taken into consideration when conducting response operations:

- Type of water body or water course (lake, stream, river);
- Water depth and surface area;
- Wind speed and direction;
- Type of shoreline; and
- Seasonal considerations (open-water, freeze-up, break-up, frozen).

The most common type of spill that could be anticipated is a petroleum hydrocarbon (diesel) spill during fuel transfers/transport. Containment of an oil slick in water will require the deployment of mobile floating booms to intercept, control, contain and concentrate (i.e., increase thickness) the floating oil. One end of the boom will be anchored to shore while the other will be towed by a boat and used to circle the oil slick and return it close to shore for recovery using a skimmer. Reducing the surface area of the slick will increase its thickness and thereby improve recovery. Mechanical recovery equipment (i.e., skimmers and oil/water separators) will be mobilized to site if required.

Measures will be taken to protect sensitive and accessible shoreline. The oil slick will be monitored to determine the direction of migration. In the absence of strong winds the oil will likely flow towards the discharge of the lake. Measures will be taken to block and concentrate the oil slick at the lake discharge using booms where it will subsequently be recovered using a portable skimmer, vacuum, or sorbent materials.

In small slowly-flowing rivers, streams, channels, inlets or ditches, inverted weirs (i.e., siphon dams) will be used to stop and concentrate moving oil for collection while allowing water to continue to flow unimpeded. In

the case of floating oil, in a stream, heading for a culvert (i.e., at a road crossing) a culvert block will be used to stop and concentrate moving oil for collection while allowing water to continue to flow unimpeded. In both cases oil will then be recovered using a portable skimmer or sorbent materials.

In the case of spills in larger rivers, with fast moving currents, diversion booming will be used to direct the oil slick ashore for recovery. Single or multiple booms (i.e., cascading) may be used for diversion. Typically, the booms are anchored across the river at an angle. The angle will depend on the current velocity. Choosing a section of a river that is both wider and shallower will make boom deployment easier. Diversion booming may also be used to direct an oil slick away from a sensitive area to be protected.

#### **5.4 SPILLS ON SNOW AND ICE**

In general, snow and ice will slow the movement of hydrocarbons. The presence of snow may also hide the oil slick and make it more difficult to follow its progression. Snow is generally a good natural sorbent, as hydrocarbons will have a tendency to be soaked up by snow through capillary action. However, the use of snow as a sorbent material will be limited as much as possible. Snow and frozen ground will also prevent hydrocarbons from migrating down into soil or at least slow the migration process. Ice will prevent seepage of fuel into the water.

Most response procedures for spills on land discussed previously may be used for spills on snow and ice. The use of dykes (i.e., compacted snow berms lined with plastic sheeting) or trenches (dug in ice) will slow the progression of the fuel and will also serve as containment to allow recovery of the fuel.

Free-product will be recovered by using a vacuum, a pump, or sorbent materials. Contaminated snow and ice will be scraped up manually or using heavy equipment depending on volumes. The contaminated snow and ice will be placed in containers or within plastic lined berms on land.

#### **5.5 DISPOSAL OF SPILLED MATERIAL**

All contaminated spill pads, and booms are placed within Quatrex bags for shipment to an approved disposal facility. All the petroleum hydrocarbon contaminated soil is placed into the Meadowbank landfarm for treatment, this includes contaminated soil from the Baker Lake and Whale Tail facilities. Spills over 100 L of non-petroleum hydrocarbon material (e.g. solvents, glycol) will be placed in drums and stored in the on-site hazardous material area for shipment south to approve facilities during barge season. Spills of non-petroleum hydrocarbon material fewer than 100 L will be placed in the Tailings Storage Facility.

Spills under 100 L of petroleum hydrocarbon contaminated snow will be placed in a designated area of the landfarm and treated as contact water after snowmelt. Spills over 100 L of petroleum hydrocarbon contaminated snow will be excavated and stored in labeled drums. After snow melt, the contaminated water will be pumped through the site's oil-water separator (carbon filter) to remove petroleum hydrocarbon residue. The treated water will be sampled per Part F, Item 6 of the NWB Water License, and discharged to the respective Stormwater Management Pond at Meadowbank and Whale Tail if criteria are met. If criteria are not met, water will be treated as hazardous material and shipped south. Also, after snowmelt, visible product will be cleaned up with absorbent pads or booms.

For more information refer to the Meadowbank Landfarm Design and Management Plan.

## 5.6 EVENT MONITORING

The Event Monitoring (EM) program addresses the site specific monitoring that is required following any accidental release. A “release” may be caused by a spill or an emergency (Meadowbank Gold Project Emergency Response Plan; March 2016).

The EM program is designed to verify whether contamination of the surface soil, nearby receiving environment and active zone has occurred as a result of an accidental release of a hazardous material or contaminated water, through monitoring of surface runoff and nearby receiving environment following remediation of any release. It is anticipated that owing to the presence of permafrost beneath most of the mine footprint, there will be minimum impact to groundwater. A complete list of hazardous materials in use during operations at all sites is provided in the *Meadowbank Gold Project Hazardous Materials Management Plan (May 2016)*.

The EM plan is developed on a site specific basis subsequent to a spill or accidental release, and considers the type of product spilled, the potential receptors, and the potential for any remaining contamination after clean up. The plan is done in coordination with the Environmental Superintendent.

In the event of an accidental release, the water quality of the downstream receptor and possibly upstream of the receiving point, if any, is to be sampled (during the ice-free season) and analyzed. Should the spill have happened over snow cover, water and possibly soil sampling is to take place at the earliest feasible time after thaw to verify if there has been any impact to the receiving water or soil quality. The specific parameters monitored as part of the EM program will depend on the nature of the spill, and will be determined for the specific hazardous material released.

EM sampling is to occur following the clean-up of a release and the frequency of sampling will depend on the type of material spilled (wet or dry spill), the environment into which the chemical was released (surface water body or soil; frozen or thawed), and the quantity of spill material. The EM program for a particular spill will cease upon obtaining satisfactory analytical results (within 20% of background level, to accommodate for analytical accuracy) from the potentially affected areas or as required by regulators.

In the event of a seepage from the tailings storage facility (TSF) and/or rock storage facility (RSF), water will be pumped back to the North Cell TSF (or South Cell if necessary) as per the 2016 Freshet Action Plan (March 2016). Visual inspections will be conducted regularly to confirm that the seepage is appropriately contained and will not enter into the receiving environment.



## SECTION 6 • HAZARDOUS MATERIALS STORED ON SITE

A variety of petroleum products and other hazardous materials will be used as part of mining operations. Large quantities of petroleum products will be stored at various sites at the Meadowbank Mine and at Whale Tail Pit. Explosives for Whale Tail Pit will largely be stored at the Whale Tail Pit site at a safe distance from the operations; a small quantity may be stored safely at the Meadowbank site site<sup>2</sup>. Other hazardous materials will be used but in smaller quantities. Nonetheless, all these products are considered as potential environmental and safety hazards.

Material Safety Data Sheets (MSDS) of all materials transported, stored and used on-site will be made available at strategic locations near to where hazardous materials or toxic substances are stored or utilized. Appendices E to J provide General Response Procedures for Spilled Chemical Substances.

Table 5 identifies the predominant hazardous materials transported, stored and generated at the sites. Those destined for use in the process plant will only be stored at Meadowbank. Refer to the *Hazardous Materials Management Plan* for more details.

**Table 5 - Materials stored at site during operations**

Material	Maximum Amount present on Site	Maximum Amount transported per unit	Storage Location
Acetylene	500 cylinders	300 cylinders per sea can	Inventory Lay down
Activated Carbon	350 Mt	10 Mt per sea can	Inventory Lay down and Process Plant lay down
Ammonium Nitrate	10 000 Mt	20 Mt per sea can	Emulsion plant
Ammonium Nitrate Fuel Oil (ANFO)	Manufactured on demand	20 000 kg per truck	Emulsion plant
Motor Oil	Estimated at 800 000L	20 800L per sea can	Inventory Lay down, garage
Trojan Boosters (Blasting Systems)	34 000 kg	15 Mt per sea can	Emulsion plant
Borax, Anhydrous	7 500 kg	3 375 kg per sea can	Inventory Lay down and Process Plant lay down
Calcium Chloride	600 000L	10 000L per sea can	Inventory Lay down
Calcium Hydroxide	NOT IN INVENTORY		Inventory Lay down
Calcium Oxide	NOT IN INVENTORY		

<sup>2</sup> Agnico Eagle Exploration also maintains explosive storage at the Whale Tail Site. These explosives are to be using in developing an underground ramp for exploring the ore body at depth and will be stored along with Whale Tail Pit explosives storage.

Calcium Peroxide	NOT IN INVENTORY		
Carbon Dioxide	10 cylinders	10 cylinders per sea can	
Copper Sulphate	500 Mt	20 Mt per sea can	Inventory Lay down and Process Plant lay down
Diesel Fuel	5.5 million Litres	40 000L per tanker	Tank farm
Dyno Split (Detagel)	135 000 kg	15 Mt per sea can	Emulsion plant
Nonel EZTL	1 400 kg	15 Mt per sea can	Emulsion plant
Nonel MS	1 800 kg	15 Mt per sea can	Emulsion plant
Ethylene Glycol	60 000L	10 000L per sea can	Inventory Lay down
Ferric Chloride Hexahydrate	NOT IN INVENTORY		
Ferric Subsulfate Solution	NOT IN INVENTORY		
Hydrofluoric Acid	NOT IN INVENTORY		
Hydrogen Peroxide	NOT IN INVENTORY		
Jet A Fuel	50 000L	11 000L Tanker	Tank, tarmac
Lead Acid Batteries	500L	500L per sea can	Warehouse
Magnafloc 10 (Flocculant)	300 Mt	15 Mt per sea can	Inventory Lay down
Nitric Acid	120 000L	8 000L per sea can	Inventory Lay down
Portland Cement	3 500 Mt	20 Mt per sea can	Dyke and Construction lay down
Sodium Cyanide	1 300 Mt	19 Mt per sea can	Inventory Lay down and Process Plant lay down
Sodium Hydroxide	10 kg	10 kg in sea can	Warehouse
Sodium Nitrate	10.2 Mt	5.1 Mt per sea can	Inventory Lay down
Sulfur	4 600 Mt	20 Mt per sea can	Inventory Lay down Process Plant lay down Quarry 1
Unleaded Gasoline	50 000L	40 000L tanker	Tank farm
Varsol	4 000L	2000 L per sea can	Inventory Lay down

## **SECTION 7 • POTENTIAL SPILL ANALYSIS**

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In order to prepare for emergency spill response, potential spill analyses were conducted using various worst case scenarios. These exercises serve to identify potential risk areas, as well as to determine the fate of spilled products and their environmental effects. One such potential scenario was identified for the Meadowbank Gold Project, this being a tanker truck spilling its contents into a waterbody somewhere between Baker Lake and Meadowbank alongside the AWAR. Such a scenario could also be applied to a tanker truck going off the Whale Tail haul road and spilling its contents.

### **Scenario #1: Road Accident Tanker Truck Spill on AWAR**

Description of incident: Spill of the contents of a fuel tanker to the ground or water during transport from Baker Lake to the Meadowbank site.

Potential causes: Vehicle accident, human error, mechanical failure

Hazardous products spilled: Diesel fuel, aviation fuel

Maximum volume spilled: 40,000 litres

Immediate receiving medium: Stream, river or lake

Distance and direction to nearest receiving body of water: N/A

Resources to protect: Streams, rivers and lakes

Estimated emergency response time: Maximum time is 90 minutes depending on location of spill (assuming truck driver is injured and cannot commence spill response procedures). Minimum time to respond to a spill on the AWAR is 15 minutes.

Spill response procedures: Contain and recover oil slick downriver as described in Section 5.3, protect shorelines using sorbent booms. Collect free-product for temporary storage. Clean-up soiled shorelines. If the response crew arrives before the complete loss of fuel from the tanker truck seal the leak if feasible, contain and recover oil spill on ground using dykes, sumps or trenches as described in Section 5.2. Also if the truck driver is not injured, he will act as a first responder and immediately initiate the spill contingency plan as defined in Section 5 using the spill kit kept in fuel trucks.

## **SECTION 8 • RESPONSE EQUIPMENT**

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### **8.1 GENERAL EQUIPMENT**

This section addresses the emergency response machinery, equipment, tools and other resources that will be made available on-site for spill counter measures.

Mobile Equipment available to Agnico Eagle that will be used for spill contingency includes:

- |                |                |
|----------------|----------------|
| • Graders      | Winch Trucks   |
| • Cranes       | Pickup Trucks  |
| • Snowmobiles  | Generator Sets |
| • Vacuum Truck | Fire Truck     |
| • Loaders      | Aluminum Boats |
| • Backhoe      | Fuel Trucks    |
| • Bulldozer    | Bobcat         |
| • Forklift     | Haul Trucks    |
| • Water Trucks | Snow Cat       |
| • Excavators   |                |

If required, additional equipment on site will be made available to assist with spill recovery.

Temporary containment systems are also available on site and include:

- Booms
- Drums
- Tanks
- Tailings Pond
- Spill absorbent material packages/pads
- Silt fencing
- Maritime Barrier

Emergency transportations that will be used under an emergency situation are:

- Aircraft (fixed wing or helicopter)
- 4-wheel drive vehicles
- Snowmobiles
- Boats
- Tundra Buggy

Communication equipment at Meadowbank and Whale Tail includes radios, telephones, faxes and other wireless communication systems that will be used in the event of an emergency situation.

Spill Response kits are strategically located where required) around the Meadowbank (Figure 7) and Whale

Tail (TBD) sites. Each department and work area is responsible for providing sufficient spill response kits in their respective work areas. The kits are kept in marked and accessible locations. The locations include all fuel storage areas, chemical storage areas and so on.

All of the mobile equipment on all sites (heavy equipment) contains an emergency spill kit.

An Environmental Emergency Trailer, which is easily accessible and mobile, is located on site at Meadowbank and contains the following items:

- Pump Elastec
- Pump accessories
- Vacuum ends
- 45 gallons top
- Tubing 2 inches diameter
- Tubing 3 or 4 inches diameter
- Diesel Fuel jerry can (place on a miniberm)
- Spill kit accessory (red box)
- Drums opener
- Wescot (to open empty drum screw)
- Empty drums
- 2 drums berm
- 4 drums berm 4x8
- Tarp 20x30
- Tarp 30x50
- Oil white spill pads
- Universal boom 5x10
- Universal boom 8x10
- ABS pipe : 10' (4")
- ABS pipe : 10' (6")
- Cell U-Sorb
- Sphagsorb
- 3 Size of Wedge wood
- Plug pattie
- Quattrex bags
- Hand shovel
- Ice braker chisel
- Sledge hammer
- Rod bar (4')

Along the AWAR there are 9 environmental emergency sea cans and at least 3 additional seacans will be installed alongside the haul road, between Whale Tail Pit and Meadowbank. These sea cans are, or will be placed, strategically placed along the roads at water crossings (Figure 8). Each environmental emergency sea can contains the following material:

- Empty drums (Sealed)

- Mini berm 36"x36" x4'
- 4 drum spill berm 4x8
- Tarp 20'x30'
- Tarp 30'x50'
- Oil white spill pads
- Universal boom 5"x10' (Chemical)
- Universal boom 8"x10' (Chemical)
- Oil only booms 5"x10' (Hydro-carbons)
- Maritime barrier (Baffle)
- ABS pipe : 10' (4")
- Cell U-Sorb
- Amerisorb peat moss
- Oil gator absorbent
- Plug pattie
- Quattrex bags
- Fork lift crate (pallets)
- Long handle round point shovel
- Chisel point crow bar 16 lbs 57"
- Ice braker chisel
- Sledge hammer 12 lbs 36"
- Rod bar (4')

If required, external resources are available in the Hamlet of Baker Lake and those contacts are found in Table 5.

Figure 7: Spill Response Equipment Location at Meadowbank

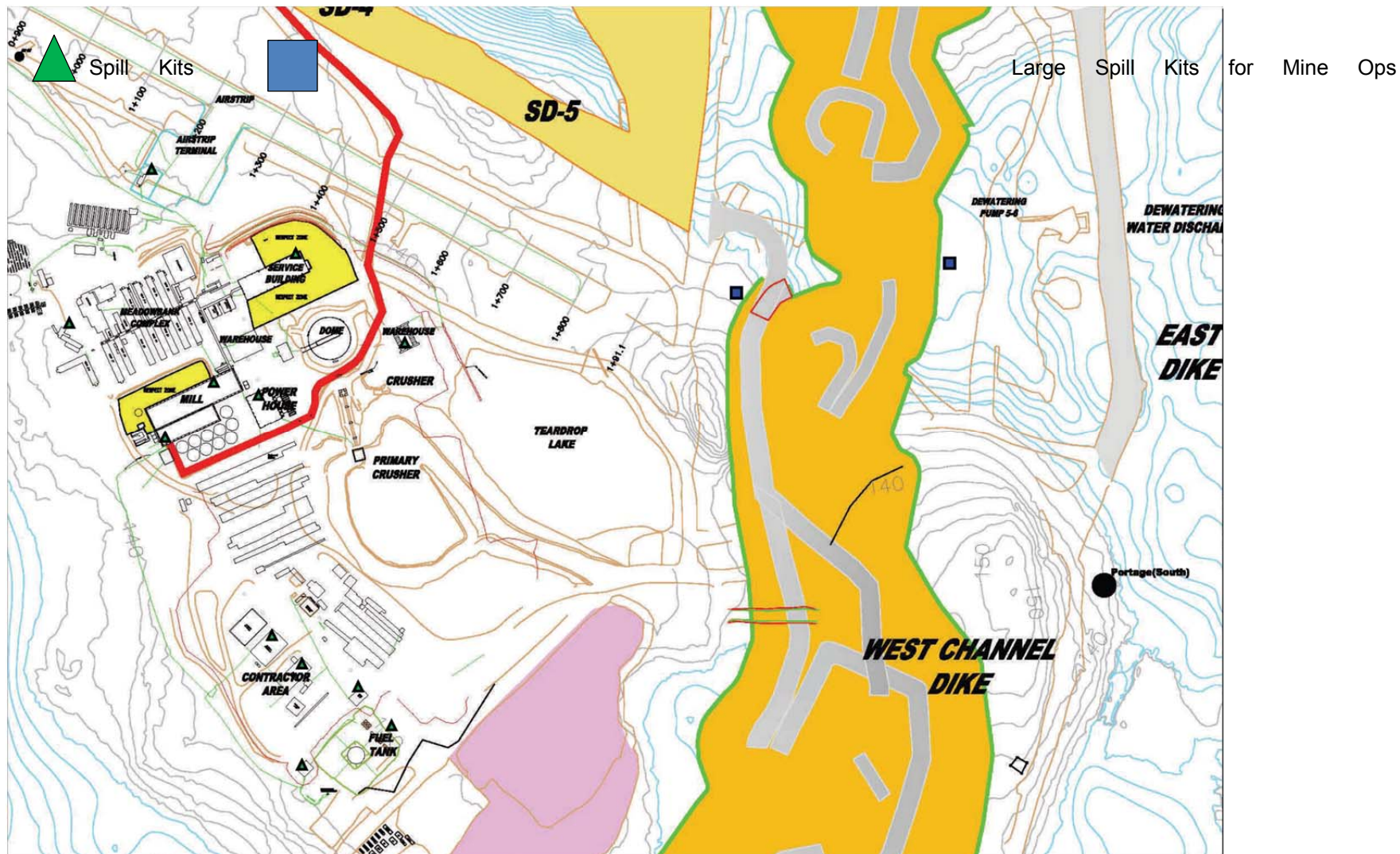
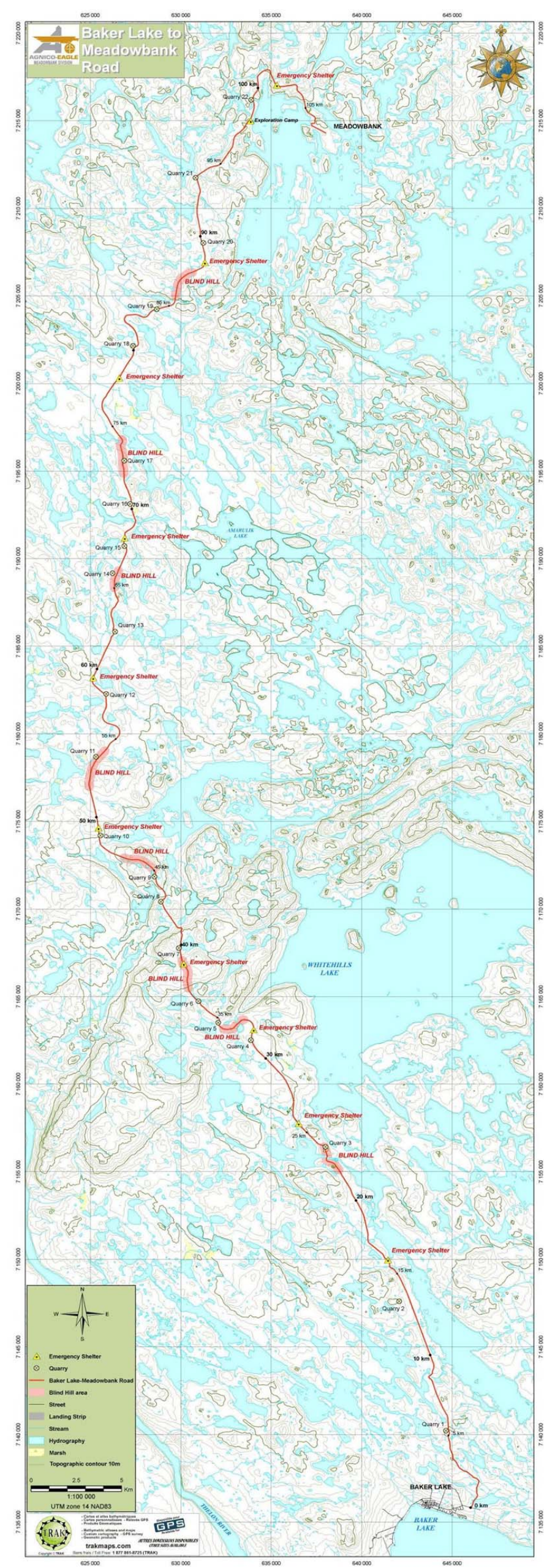




Figure 8 : Map of AWAR Including Locations of Environmental Emergency Sea cans





## **SECTION 9 • TRAINING & EMERGENCY SPILL/EXERCISE**

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### **9.1 TRAINING**

#### **9.1.1 On-site Personnel**

A designated Emergency Response Team (ERT) consisting of on-site personnel has been established at Meadowbank and another team will be established at Whale Tail. Agnico Eagle will ensure that the ERTs are trained and present for major spill response at all times. All members of the teams are trained and familiar with emergency and spill response resources, including their location and access, the SCP, and appropriate emergency spill response methodologies. The ERT has up to 40 members, each of whom train 8 hours per month.

The following training is included:

- A review of the spill response plan and responsibilities of the ERT members;
- The nature, status, and location of fuel and chemical storage facilities;
- The on-site and off-site spill response equipment and how to use it;
- Emergency contact lists;
- Desktop exercises of “worst case” scenarios; and
- The likely causes and possible effects of spills.

Every employee at Agnico Eagle receives spill and waste management training during their initial site orientation so they are able to respond to small spills and raise the alarm if a larger response is required. ERT members receive more extensive HAZMAT training and learn how to respond while wearing personal protective equipment (PPE).

The road crews between Baker Lake and Meadowbank, and Meadowbank and Whale Tail also received or will receive training regarding the actions that they have to carry out during an emergency or major spill on the road. You can find records of different trainings that Agnico Eagle personnel have attended in Appendix K. The Environmental Department regularly attends tool-box sessions to provide information on spill response, spill prevention and spill reporting procedures.

## **SECTION 10 • LIST OF ACRONYMS**

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AANDC	Aboriginal Affairs and Northern Development Canada
Agnico Eagle	Agnico Eagle Mines Limited
ANFO	Ammonium Nitrate Fuel Oil
AWAR	All-Weather Access Road
CCME	Canadian Council of Ministers of the Environment
DFO	Fisheries and Oceans Canada
EMS	Environmental Management System
ERP	Emergency Response Plan
ERT	Emergency Response Team
ERTC	Emergency Response Team Coordinator
GN	Government of Nunavut
HCN	Hydrogen Cyanide
HMMP	Hazardous Materials Management Plan
INAC	Indian and Northern Affairs Canada
LEL	Lower Explosion Limit
MSDS	Materials Safety Data Sheets
NIOSH	National Institute for Occupational Safety and Health
OHSP	Occupational Health & Safety Plan
PCB	Polychlorinated Biphenyls
PPE	Personal Protective Equipment
SCP	Spill Contingency Plan
TBD	To Be Determined
TDG	Transportation of Dangerous Goods
WHMIS	Workplace Hazardous Materials

## **Appendix A**

### **Environmental Department weekly inspection template**

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**Please refer to the approved Meadowbank Spill Contingency Plan Version 4 (November 2013)**

## **Appendix B**

### **Shipboard Oil Pollution Emergency Plan**

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**Please refer to the approved Meadowbank Spill Contingency Plan Version 4 (November 2013)**

**Appendix C**

**Shipping Company certificate of entry and acceptance boats**

**Communication protocol**

**Safety management system for entry into confined water**

**Safety management system for monthly safety meeting**

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**Please refer to the approved Meadowbank Spill Contingency Plan Version 4 (November 2013)**

## **Appendix D**

### **NWT/NU Spill Report Form**

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**Please refer to the approved Meadowbank Spill Contingency Plan Version 4 (November 2013)**

## **Appendix E**

### **General Response Procedures for Spilled Chemical Substances**

#### **Explosives**

##### **E.1 Ammonium Nitrate**

##### **E.2 Ammonium Nitrate Fuel Oil (ANFO)**

**Please also refer to the Meadowbank Ammonia Management Plan which has been updated to include the Whale Tail Pit operations.**

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### **E.1 Ammonium Nitrate**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank and Whale Tail sites.

The first step against prevention of potential spills and association hazards is the application of proper storage procedures for bulk Ammonium Nitrate, including the following:

- Good housekeeping of the storage facility will prevent spilling and or contamination of materials;
- Ammonium nitrate should be stored away from combustible materials and fuels, as well as other blasting accessories (i.e. boosters, delays, detonating cords and detonators);
- The storage facility should be well ventilated;
- Proper signage restricting the use/exposure of ammonium nitrate to ignition sources should be posted (e.g. no hot work, smoking or vehicle maintenance); and
- The storage facility should be locked at all times with only authorized personnel allowed access.

The following is a general spill response procedure for ammonium nitrate. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required. Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

#### **For an ammonium nitrate spill (solid):**

- 1) Isolate and evacuate the spill area;
- 2) Contact your Supervisor who will then contact the On-Scene Coordinator and coordinate appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 3) Put on appropriate personal protective equipment. For an ammonium nitrate spill this includes:
  - a) Gloves **as recommended by the MSDS or glove manufacturer;**
  - b) Protective eyeglasses or chemical safety goggles or face shield **as recommended by the MSDS;**
  - c) Lab coat, coveralls or Tyvek<sup>TM</sup> coveralls **as recommended by the MSDS; and**
  - d) Half mask air-purifying respirator with cartridges and/filters **as recommended by the MSDS or respirator manufacturer;**
- 4) Ventilate (open windows/doors to outdoors) closed spaces before entering;



- 5) Remove all sources of heat and ignition (no smoking, flares, sparks or flames in immediate area) and remove uncontaminated combustible materials and organic compounds (wood, paper, oil, etc.) from spill area;
- 6) For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using suitable absorbent materials, soil or other appropriate barrier;
- 7) Vacuum or sweep the spill residue using non-metal, non-sparking tools and place the residue in a labelled, plastic, container (plastic pail with lid or double heavy duty plastic bags) for re-use or off-site disposal at a licensed disposal facility;

*Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and **clearly label the container per WHMIS Guidelines**.*

*Note: Minimize dust generation during the operation.*

- 8) Remove and bag personal protective equipment for cleaning and disposal at a licensed facility. Thoroughly wash potential skin contact locations after handling.

## **E.2 Ammonium Nitrate Fuel Oil (ANFO)**

Currently no ANFO is stored at the Meadowbank or Whale Tail sites. ANFO is fabricated on demand using ammonium nitrate and fuel oil. In the event that ANFO would be stored at the sites, Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project. Proper handling and disposal of ANFO is an important first step in mitigating against spills and associated hazards.

The proper storage procedures are as follows:

- ANFO should only be used under the supervision of authorized trained personnel;
- ANFO should be kept away from heat, sparks, and flames, as well as initiating explosives, oxidizing agents, combustibles, and other sources of heat;
- Containers should be protected from physical damage and in dry, well ventilated conditions;
- Transportation to the Mine site will be in accordance with Section 14 of the *Mines Act* and Regulations and the *Transportation of Dangerous Goods Act*. Transport vehicles will be in sound mechanical condition and equipped with proper safety equipment. Loaded vehicles will not be left unattended and only authorized personnel will be responsible for the security of the explosives under their control; and
- Explosives that have been identified as deteriorated or damaged will need to be disposed of or destroyed. The appropriate method of disposal or destruction and subsequent course of action will be determined by authorized personnel or the explosive supplier.

The following is a general spill response procedure for ammonium nitrate fuel oil – ANFO. The following procedure does not apply to emulsions or other explosives. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required. Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

### **For an ANFO spill (solid):**

- 1) Isolate and evacuate the spill area;
- 2) Immediately extinguish any open flames and remove ignition sources (no smoking, flares, sparks in immediate area) IF SAFE TO DO SO. **Fires involving large quantities of ANFO should not be fought;**
- 3) Contact the On-Scene Coordinator who will assemble ERT members and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 4) Put on appropriate personal protective equipment. For an ANFO spill this includes:
  - a): **Gloves as recommended by the MSDS or glove manufacturer;**

- b) Protective eyeglasses or chemical safety goggles or face shield **as recommended by the MSDS**;
  - c) Lab coat, coveralls or Tyvek<sup>TM</sup> coveralls **as recommended by the MSDS**;
  - d) Shoe covers or rubber boots;
  - e) Half mask air-purifying respirator with cartridges and/filters **as recommended by the MSDS or respirator manufacturer**;
- 5) If the spill has occurred outdoors, stay upwind and avoid low lying areas. Ventilate (open windows/doors to outdoors) closed spaces before entering. Ensure adequate explosion proof ventilation for clean-up;
- 6) Remove all sources of heat and ignition (no smoking, flares, sparks or flames in immediate area) and remove uncontaminated combustible materials and organic compounds (wood, paper, oil, etc.,) from spill area;
- 7) Do not operate radio transmitters within 100 m of electric detonators;
- 8) For spill on land, protect the spill area from storm water runoff by constructing a ditch or dike using suitable absorbent materials, soil or other appropriate barrier. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
- 9) Collect, sweep or shovel spilled material and the other contaminated material/soil using non-metallic, spark-proof tools and place residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for off-site disposal at a licensed disposal facility;
- Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and **clearly label the container per WHMIS Guidelines**.*
- Note: The drums/containers/residues are to be stored in ventilated areas away from incompatible materials for eventual off-site disposal at a licensed disposal facility.*
- 10) Remove and bag personal protective equipment for cleaning or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated leather articles including shoes that cannot be decontaminated.

## **Appendix F**

### **General Response Procedures for Spilled Chemical Substances**

#### **F.1 Compressed Gases**

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### **E.1 Compressed Gases**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for Meadowbank Gold Project.

The following is a general spill response procedure for compressed gases. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

#### **For a compressed (inert and flammable) gas leak:**

- 1) IF SAFE TO DO SO and it will stop the gas leak, turn off cylinder valve;
- 2) If the leak cannot be stopped by closing the cylinder valve, and it is **an inert atmospheric gas** (e.g. nitrogen, carbon dioxide, etc.) isolate and evacuate the affected area. If the leak is a **flammable gas** and the leak is outside of a ventilated building enclosure that will contain the gas, immediately activate the fire alarm system and evacuate the area/building;
- 3) Contact the On-Scene Coordinator who will assemble spill response team members and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 4) If possible and safety permits, adjust leaking cylinder so that gas escapes rather than liquid;
- 5) If possible and safety permits, eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area) and turn off electrical equipment;
- 6) If the spilled has occurred outdoors, stay upwind and avoid low lying areas. If the spill has occurred inside a building, prevent spread of vapour throughout the building by closing doors to other rooms and hallways. If the room's air exchange system distributes air throughout the building, then it may also be necessary to have it shut-down. Allow vapours to ventilate outdoors by opening windows and doors to the exterior; and
- 7) Isolate area until gas has dispersed. On-Scene Coordinator to verify safe conditions.

## **Appendix G**

### **General Response Procedures for Spilled Chemical Substances**

#### **G.1 Flammable and Combustible Liquids**

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### **G.1 Flammable and Combustible Liquids**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project. The following is a general spill response procedure for flammable or combustible liquids, particularly petroleum hydrocarbon products. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

#### **For a spill of flammable or combustible petroleum hydrocarbon product (liquid):**

- 1) Isolate and evacuate the spill area;
- 2) Immediately extinguish any open flames and remove ignition sources (no smoking, flares, sparks in immediate area) IF SAFE TO DO SO;
- 3) Stop leak and contain spill (**see Step 9**) IF SAFE TO DO SO;
- 4) Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 5) Put on appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
  - a) Gloves **as recommended by the MSDS or glove manufacturer;**
  - b) Splash goggles or face shield;
  - c) Shoe covers or rubber boots;
  - d). Lab coat or Tyvek<sup>TM</sup> coveralls; and
  - e) Half mask air-purifying respirator with **organic vapour or combination** cartridges, or **as otherwise recommended by the MSDS or respirator manufacturer.**
- 6) If the spilled has occurred outdoors, stay upwind and avoid low lying areas. If the spill has occurred inside a building, prevent spread of vapour throughout the building by closing doors to other rooms and hallways. If the room's air exchange system distributes air throughout the building, then it may also be necessary to have it shut-down;
- 7) Ventilate (open windows/doors to outdoors) closed spaces before entering. Ensure adequate explosion-proof ventilation for clean-up. A vapour suppressing foam or water spray may be used to reduce vapours;
- 8) Remove all sources of ignition (no smoking, flares, sparks or flames in immediate area) and combustible materials (wood, paper, oil, etc.) within the spilled area;

- 9) Contain spill by using spill absorbent, spill pads or pillows, soil or snow to construct a dike that limits flow and prevents entry to sewer, waterways or onto ice. For spills to land, excavation of trenches/pits to capture spill flow may also be appropriate. If possible, compact soil or snow dikes, and place plastic tarps over the dike and at its foot to allow the product to pool on the plastic for easy recovery;

*Note: Do not use paper towels to absorb spill as this increases the rate of evaporation and vapour concentration in the air.*

*Note: Do not flush with water into drainage areas or ditches as this will spread spill.*

*Note: Snow works well as a natural absorbent to collect and contain spilled petroleum hydrocarbons. However, its use in containing a spill will result in a water-contaminant mixture that may be more difficult to manage. It is important to scrape up the contaminated snow and ice as soon as possible.*

- 10) Carefully cover the spill area with spill absorbent, spill pads, soil or snow, starting at the outside and working inward. Do not touch or walk through spilled material;
- 11) Sweep up or shovel the residue using non-metallic, spark-proof tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags). For larger spills to land, excavate impacted absorbent material and soil, place in lined and bermed temporary storage area or directly into sealed drums/containers;

*Note: The drums/containers/residues are to be stored in ventilated areas away from incompatible materials for eventual treatment at on-site landfarm or off-site disposal at a licensed disposal facility. Electrically ground all containers and transporting equipment.*

*Note: Larger pools of product may be pumped into empty storage tanks or drums.*

- 12) If spill is indoors, mop the affected area using detergent and water. Dispose of this water to drums for eventual off-site disposal at a licensed disposal facility. Spills to land may require further excavation or remediation of contaminated soil until acceptable soil quality is achieved. The On- Scene Coordinator and/or Environmental Superintendent will assess this requirement;
- 13) For spills to water, immediately limit the area of the spill on water using absorbent pads and booms and similar materials to capture small spills on water. Deploy and slowly draw in absorbent booms to encircle and absorb the spilled product. Recover larger spills on water with floating skimmers and pumps, as required, and discharge recovered product to drums or tanks;

*Note: Petroleum hydrocarbons are generally hydrophobic, and as such, do not readily dissolve in water. They typically tend to float on the water's surface. Absorbent booms are often relied on to recover hydrocarbons that escape land containment and enter water.*

*Note: Antifreeze sinks and mixes with water. If released to water, attempt to isolate/confine the spill by damming or diverting the spill. Pump contaminated water to tanks or drums.*

- 14) Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant



hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated leather articles, (including shoes) that cannot be decontaminated.

## Appendix H

### General Response Procedures for Spilled Chemical Substances

#### Oxidizing Substances

##### H.1 Liquids

##### H.2 Solids

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## **H.1 Liquids**

Agnico Eagle commits to review, modify and approve as required and to establish this procedure as appropriate for use at the Meadowbank Gold Project. The following is a general spill response procedure for liquid oxidizer compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

### **For a liquid oxidizer spill:**

- 1) Isolate and evacuate the spill area;
- 2) Stop leak and contain spill (**see Step 8**) IF SAFE TO DO SO;
- 3) Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 4) Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
  - a) Gloves **as recommended by the MSDS or glove manufacturer**;
  - b) Splash goggles or face shield;
  - c). Shoe covers or rubber boots;
  - d) Lab coat, coveralls or Tyvek<sup>TM</sup> coveralls **as recommended by the MSDS**; and
  - e) Half mask air-purifying respirator with cartridges and/or filters **as recommended by the MSDS or respirator manufacturer**.
- 5) Ventilate closed spaces before entering. Ensure adequate explosion-proof ventilation for clean-up;
- 6) Remove and/or moisten with water any combustible material (wood, paper, oil, etc.) affected by the spill;
- 7) Use water spray to reduce vapours or divert vapour cloud drift, if required;
- 8) Contain spill by using non-combustible spill absorbent, soil or snow to construct a dike that limits flow and prevents entry to sewer, waterways or onto ice. For spills to land, excavation of trenches/pits to capture spill flow may also be appropriate;

*Note: Flushing area with flooding quantities of water may also be appropriate assuming this does not make clean up and waste management more difficult– **refer to the MSDS**.*

- 9) Carefully cover the spill area with spill absorbent, soil or snow, starting at the outside and working inward. Use non-combustible absorbent. Do not touch or walk through spilled material.
- 10) Sweep up or shovel the spill residue using non-metal, non-sparking tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for off- site disposal at a licensed disposal facility;
- 11) For indoor spills, mop the affected area using detergent and water. Flushing area with flooding quantities of water may also be appropriate – **refer to the MSDS**. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate. Spills to land may require further excavation or remediation of contaminated soil until acceptable soil quality is achieved. The On- Scene Coordinator and/or Environmental Superintendent will assess this requirement; and
- 12) Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

## **H.2 Solids**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project.

The following is a general spill response procedure for solid oxidizer compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

### **For a solid oxidizer spill:**

- 1) Isolate and evacuate the spill area;
- 2) Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 3) Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
  - a) Gloves **as recommended by the MSDS or glove manufacturer**;
  - b) Safety glasses or goggles;
  - c) Lab coat; and
  - d) Half mask air-purifying respirator with **N95 or greater protection** particulate filter or **as recommended by the MSDS or respirator manufacturer**.
- 4) Remove all sources of heat and ignition (no smoking, flares, sparks or flames in immediate area) and remove uncontaminated combustible materials and organic compounds (wood, paper, oil, etc.,) from spill area;
- 5) For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using suitable non-combustible absorbent materials, soil or other appropriate barrier. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
- 6) Vacuum, sweep or shovel the spill residue using non-metal, non-sparking tools and place the residue into a labelled, plastic, container (plastic pail with lid or double heavy duty plastic bags) for re- use or off-site disposal at a licensed disposal facility;

*Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and **clearly label the container per WHMIS Guidelines**.*

*Note: Minimize dust generation.*

- 7) If there is still oxidizer residue left in the spill area, neutralize with appropriate agent **as recommended by the MSDS**, or for spills to land continue to excavate until no visible spilled solid remains. Use non-combustible spill absorbent or soil to absorb the neutralized residue. Place in suitable drums/containers for disposal to a licensed facility;
- 8) For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate; and
- 9) Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

## **Appendix I**

### **General Response Procedures for Spilled Chemical Substances**

#### **Poisonous and Toxic Substances**

##### **I.1 Sodium Cyanide**

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## **1.1 Sodium Cyanide**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project. The following is a general spill response procedure for solid Sodium Cyanide.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

### **For a Sodium Cyanide (solid) spill:**

- 1) Isolate and evacuate the spill area;
- 2) Contact the On-Scene Coordinator who will assemble ERT members and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 3) Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
  - a) Impermeable Gloves **as recommended by the MSDS or glove manufacturer;**
  - b) TyChem; and
  - c) SCBA – Self Contained Breathing Apparatus
  - d) Rubber Boots

*Note: For worker safety, maintain readily accessible supply of cyanide response kits on site.*

- 4) Ventilate area of spill or leak;
- 5) Avoid exposure to acids, water or weak alkalis which can react to form toxic hydrogen cyanide (HCN) gas.
- 6) Contain spill to prevent release to sewer, waterway or onto ice. For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using absorbent materials, soil or other appropriate barrier. If raining, cover spill area with tarp or plastic to minimize contact with water and prevent subsequent runoff. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
- 7) Shovel the spilled material into labelled drums, containers or plastic bags for re-use or off-site disposal at a licensed disposal facility.

*Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and **clearly label the container per WHMIS Guidelines.***

*Note: Minimize dust generation.*

- 8) If there is still spilled sodium cyanide residue left in the spill area, neutralize with appropriate agent **as recommended by the MSDS** (sodium or calcium hypochlorite solution), or for spills to land continue to



excavate until no visible spilled solid remains. Use suitable spill absorbent or soil to absorb the neutralized residue. Place in suitable drums/containers for disposal to a licensed facility. Collect material and place in a closed container for recovery or disposal;

**IMPORTANT: *It is strictly prohibited to add any chemicals or neutralizing solutions to a Sodium Cyanide Spill near a drainage system, or near or in a water body.***

- 9) For indoor spills, mop the affected area using detergent and water. Dispose of this water to waste drums/containers for disposal to a licensed facility; and
- 10) Remove and bag personal protective equipment for disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

## **Appendix J**

### **General Response Procedures for Spilled Chemical Substances**

#### **Corrosive Substances**

**J.1 Acids, Liquids**

**J.2 Acids, Solids**

**J.3 Bases/Alkali, Liquids**

**J.4 Bases/Alkali, Solids**

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## **Response to Spilled Chemicals**

***IMPORTANT: It is strictly prohibited to add any chemicals or neutralizing solutions to a Spilled Chemicals near a drainage system, or near or in a water body.***

### **J.1 Acids, Liquids**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project.

The following is a general spill response procedure for liquid acid compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

#### **For a liquid acid spill:**

- 1) Isolate & evacuate the spill area;
- 2) Stop leak and contain spill (**see Step 8 below**) IF SAFE TO DO SO;
- 3) Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 4) Put on appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
  - a) Gloves **as recommended by the MSDS or glove manufacturer**;
  - b) Splash goggles or face shield;
  - c) Shoe covers or rubber boots;
  - d) Lab coat or Tyvek<sup>TM</sup> coveralls; and
  - e) Half mask air-purifying respirator with **acid gas or combination** cartridges, or **as otherwise recommended by the MSDS or respirator manufacturer**.
- 5) If the spill has occurred outdoors, stay upwind and stay out of low areas. If the spill has occurred inside a building, prevent spread of vapour throughout the building by closing doors to other rooms and hallways. If the room's air exchange system distributes air throughout the building, then it may also be necessary to have it shut-down;

- 6) Ventilate (open windows/doors to outdoors) closed spaces before entering;
- 7) Remove all sources of ignition (no smoking, flares, sparks or flames in immediate area);
- 8) Contain spill by using spill absorbent, spill pads or pillows, or dry soil to construct a dike that limits flow and prevents entry to sewer, waterways or onto ice. For spills to land, excavation of trenches/pits to capture spill flow may also be appropriate. Ideally, use spill absorbent that contains a mild neutralizing agent **as recommended by the MSDS**;

*Note: Many acids, particularly concentrated acids react violently in the presence of water. Do not flush spill area with water unless the **MSDS** indicates acceptable.*

*Note: Nitric Acid reacts violently and explosively with organic chemicals and organic material such as wood, cotton and paper; therefore, do not use organic absorbent material on Nitric acid.*

*Note: Hydrofluoric acid will fume during neutralization. Provide adequate ventilation and approach from upwind. Neutralize carefully with sodium bicarbonate, soda ash or lime. Use water spray to disperse the gas/vapour if required. Remove all sources of ignition.*

- 9) Carefully cover the spill area with spill absorbent, spill pads or dry soil, starting at the outside and working inward. If practical, neutralize spill using **MSDS-recommended** or commercially available neutralizers. Use pH indicator paper to determine if spill is neutralized (pH 7);

*Note: Use caution as neutralization reactions generate heat.*

- 10) Sweep or shovel the neutralized spill residue using non-metal, non-sparking tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for off-site disposal at a licensed disposal facility;
- 11) Check the pH of the spill area. If it is less than pH 6, then further neutralize with a dilute solution of a suitable reagent **as identified on the MSDS** or for spill to land continue to excavate contaminated soil;
- 12) For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate;
- 13) Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated; and
- 14) After the spill has been cleaned up, the area should be free of vapours. However, if personnel note odours or irritation, isolate the spill area; re-clean the area as per **Steps 11 and 12** or wait at least **1 hour** before re-entering or until considered safe by the On-Scene Coordinator or Environmental Superintendent.

## **J.2 Acids, Solids**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use on the Meadowbank Gold Project.

The following is a general spill response procedure for solid acid compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

### **For a solid acid spill:**

- 1) Isolate and evacuate the spill area;
- 2) Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 3) Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
  - a) Gloves **as recommended by the MSDS or glove manufacturer**;
  - b) Safety glasses or goggles;
  - c) Lab coat; and
  - d) Half mask air-purifying respirator with **N95 or greater protection** particulate filter, or **as otherwise recommended by the MSDS or respirator manufacturer**.
- 4) Contain spill to prevent release to sewer, waterway or onto ice. For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using absorbent materials, dry soil or other appropriate barrier. If raining, cover spill area with tarp or plastic to minimize contact with water and prevent reaction and/or subsequent runoff. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
- 5) If necessary to minimize dust production, slightly moisten the solid. Use water, or if the material is water reactive, another inert liquid **as recommended by the MSDS**;
- 6) Sweep up or shovel the residue using non-metallic, spark-proof tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for reuse or off-site disposal at a licensed disposal facility;

*Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and **clearly label the container per WHMIS Guidelines**.*

- 7) Remaining solid acid residue may be neutralized using a dilute solution of appropriate agent **as recommended by the MSDS** (e.g. sodium bicarbonate - baking soda), or for spills to land continue to excavate until no visible spilled solid remains. Check the pH of the spill area; the final pH should be between pH 6 and 10. Use spill absorbent, spill pads or dry soil to absorb the neutralized residue;

*Note: Use caution as neutralization reactions generate heat.*

- 8) For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate; and
- 9) Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

### **J.3 Bases/Alkali, Liquids**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank exploration camp.

The following is a general spill response procedure for liquid alkali or base compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

#### **For a liquid alkali or base spill:**

- 1) Isolate & evacuate the spill area;
  - 2) Stop leak and contain spill (**see Step 8**) IF SAFE TO DO SO;
  - 3) Contact the On-Scene Coordinator who will assemble ERT members and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
  - 4) Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
    - a) Gloves **as recommended by the MSDS or glove manufacturer**;
    - b) Splash goggles or face shield;
    - c) Shoe covers or rubber boots;
    - d) Lab coat or Tyvek<sup>TM</sup> coveralls; and
    - e) Half mask air-purifying respirator with cartridges/filters **as recommended by the MSDS or respirator manufacturer**.
  - 5) If the spill has occurred outdoors, stay upwind and stay out of low areas. If the spill has occurred inside a building, prevent spread of vapour throughout the building by closing doors to other rooms and hallways. If the room's air exchange system distributes air throughout the building, then it may also be necessary to have it shut-down;
  - 6) Ventilate (open/windows to outdoors) closed spaces before entering;
  - 7) Remove all sources of ignition (no smoking, flares, sparks or flames in immediate area) and combustible materials (wood, paper, oil, etc.);
  - 8) Contain spill by using spill absorbent, spill pads or pillows, or dry soil to construct a dike that limits flow and
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prevents entry to sewer, waterways or onto ice. For spills to land, excavation of trenches/pits to capture spill flow may also be appropriate. Ideally, use spill absorbent that contains a mild neutralizing agent **as recommended by MSDS**;

*Note: Use caution as neutralization reactions generate heat.*

- 9) Carefully cover the spill area with spill absorbent, spill pads or dry soil, starting at the outside and working inward. If practical, neutralize spill using MSDS-recommended or commercially available neutralizers. Use pH indicator paper to determine if spill is neutralized (pH 7);

*Note: Use caution as neutralization reactions generate heat.*

- 10) Sweep or shovel the neutralized spill residue using non-metal, non-sparking tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for off-site disposal at a licensed disposal facility;
- 11) Check the pH of the spill area. If it is greater than pH 10, then further neutralize with a dilute solution of a suitable reagent **as identified on the MSDS**, or for spill to land continue to excavate contaminated soil;
- 12) For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate;
- 13) Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated; and
- 14) After the spill has been cleaned up, the area should be free of vapours. However, if personnel note odours or irritation, isolate the spill area; re-clean as per **Steps 11 and 12** or wait at least **1 hour** before re-entering or until it is considered to be safe by the On-Scene Coordinator or Environmental Superintendent.



#### **J.4 Bases/Alkali, Solids**

Agnico Eagle commits to review, modify and approve as required to establish this procedure as appropriate for use at the Meadowbank Gold Project.

The following is a general spill response procedure for solid alkali or base compounds. Consult the MSDS for the specific spilled compound to determine whether deviations from the general guidance are required.

Agnico Eagle commits to review and test, and if necessary, modify and update this spill response procedure on an annual basis.

#### **For a solid alkali or base spill:**

- 1) Isolate and evacuate the spill area;
- 2) Contact the On-Scene Coordinator who will assemble ERT members if required and the appropriate spill response materials outside the spill area. **Obtain and read the MSDS** for the substance to determine the chemical-specific hazards and to identify any special precautions that must be taken;
- 3) Put on the appropriate personal protective equipment. Depending on the scale of the spill and properties of the spilled substance, this can include:
  - a) Gloves **as recommended by the MSDS or glove manufacturer;**
  - b) Safety glasses or goggles;
  - c) Lab coat; and
  - d) Half mask air-purifying respirator with **N95 or greater protection** particulate filter or **as recommended by the MSDS or respirator manufacturer.**
- 4) Contain spill to prevent release to sewer, waterway or onto ice. For spills to land, protect the spill area from storm water runoff by constructing a ditch or dike using absorbent materials, dry soil or other appropriate barrier. If raining, cover spill area with tarp or plastic to minimize contact with water and prevent reaction and/or subsequent runoff. For spill to water, utilize damming, and/or water diversion to minimize the spread of contamination;
- 5) If necessary to minimize dust production, slightly moisten the solid. Use water, or if the material is water reactive, another inert liquid **as recommended by the MSDS;**  
  
*Note: Do not use water to flush bases in powdered form, such as calcium oxide (lime), as this material is not very soluble.*
- 6) Sweep or shovel the residue using non-metallic, spark-proof tools and place the residue into a labelled, plastic, waste container (plastic pail with lid or double heavy duty plastic bags) for offsite disposal at a licensed disposal facility;

*Note: Recovered solid, if generally free from impurities, may be suitable for its intended use. In this case, place solid in suitable container with lid, and **clearly label the container per WHMIS Guidelines**.*

- 7) Remaining solid alkali or base residue may be neutralized using a dilute solution of appropriate acid. Check the pH of the spill area; the final pH should be between pH 6 and 10. Use spill absorbent, spill pads or dry soil to absorb the neutralized residue;
- 8) For indoor spills, mop the affected area using detergent and water. Dispose of this water to the sanitary sewer, process stream or waste drums as appropriate; and
- 9) Remove and bag personal protective equipment for cleaning, informing laundry personnel of contaminant hazards, or disposal at a licensed disposal facility. Thoroughly wash with soap potential skin contact locations after handling. Properly dispose of contaminated clothing that cannot be decontaminated.

## **Appendix K**

### **Agnico Eagle Spill Response Training Records**

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**Please refer to the approved Meadowbank Spill Contingency Plan Version 4 (November 2013)**

## **Appendix L**

**Dyno Nobel Emergency Response Plan**

**Please refer to the approved Meadowbank Spill Contingency Plan Version 4 (November 2013)**

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## **Appendix M**

### **MBK-ENV-0016 Spill Reporting Procedure**

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**Please refer to the approved Meadowbank Spill Contingency Plan Version 4 (November 2013)**