SPILL CONTINGENCY PLAN

PREPARED FOR THE NUNAVUT WATER BOARD

WATER LICENCE NWB1ULU0008 ISSUED MARCH 23, 2004

WOLFDEN RESOURCES INC.

ULU EXPLORATION PROJECT

NUNAVUT

Revised February 2006

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RECORD OF REVISIONS - COPY

SECTION	DESCRIPTION	DATE OF ENTRY	PAGE NO.

NOTE: After completing the revision entries and replacing the appropriate sections, the Record of Revisions should be signed by the user.

1.0 GENERAL

1.1 Preamble

This Spill Contingency Plan has been compiled with respect to the requirements within Water Licence NWB1ULU0008, Part E, Item 1 which was reassigned to Wolfden Resources Inc. from Echo Bay Mines Inc. on March 23, 2004. This Plan is Wolfden's first submission under the Licence following it's purchase of the Ulu Project from Kinross Gold Corporation in February 2004. The previous requirement for a Spill Contingency Plan was waived upon Echo Bay Mines Ltd's suspension of activities at the site. An annual review of the Plan takes place and revisions are usually submitted as necessary with the annual report.

The Ulu Exploration Project Spill Contingency Plan, upon approval by the Board, is to be distributed to all appropriate contacts on the distribution list (Sec. 1.3) and will be used in addition to the Ulu Project Emergency Procedures Policy Manual upon resuming activities at the site.

The Guidelines For Spill Contingency Planning, Northwest Territories Water Board, 1987", have been utilized as the guide to the requirements of the manual as per Item 1, Part E. The Plan has been expanded beyond these guidelines where appropriate and as described in Part E.

1.2 Contact

Additional copies of this plan may be obtained by writing to:

Wolfden Resources Inc.
309 Court Street South
Thunder Bay, Ontario
P7J 1H1
Attn: Mr. Ewan Downie, President

or at:

Tel: (807) 346-1668
Fax: (807) 345-0284
E-mail: wolfden@baynet.net

As President, Mr. Ewan Downie is ultimately responsible for the Ulu exploration project.

The on-site manager of the project is David B. Stevenson, Project Manager. His contact information is as follows:

Wolfden Resources Inc.
309 Court Street South
Thunder Bay, Ontario
P7J 1H1

Tel: (807) 346-1668
Fax: (807) 345-0284
E-mail: dave.stevenson@wolfdenresources.com

or in Ulu at:

Tel: (604) 759-0605
Fax: (604) 759-0601

If Mr. Stevenson is not on site the alternate contact is Wayne Kirkham or Kirk Keller, Building and Maintenance Supervisor. They can be contacted in Ulu at:

Tel: (604) 759-0602
Fax: (604) 759-0601

1.3 Distribution List

Affiliation	Position	Name	Copy #
Wolfden Resources Inc.	President	Ewan Downie	1
Wolfden Resources Inc.	Chief Operating Officer	John Begeman	2
Wolfden Resources Inc.	Project Manager	David Stevenson	3
Wolfden Resources Inc.	Senior Geologist	TBA	4
Wolfden Resources Inc.	Senior Engineer	TBA	5
Wolfden Resources Inc.	Building and Maint. Supervisor	Wayne Kirkham/ Kirk Keller	6
Wolfden Resources Inc.	Environmental Coordinator	John Cook	7
DIAND	Water Resources Manager	David Milburn	8
Environment Canada	Environmental Protection	Dave Tilden	9
Nunavut Water Board	Executive Director	Philippe di Pizzo	10
Inactive			11

1.4 Purpose

This Spill Contingency Plan is designed to provide the necessary background information and plans of action in the event of a failure at the facility or an incident within the Ulu Exploration Project resulting in a spill of fluids (fuel, oil, sewage line) or of explosives. It is intended to outline the means for responding to failures and material spills within these systems in a way that will minimize potential health hazards, environmental damage and clean up costs.

The objectives of the Plan are to:

- Define the reporting procedures and communication network to be used in the event of a system failure or material spill.
- Define procedures for the safe and effective containment and cleanup/disposal of a system failure or material spill.

- Define specific individuals and their responsibilities.

This site plan is limited to the Ulu Exploration Project and is not intended to cover, but may assist, the response action plans for winter road transportation between Ulu and High Lake.

1.5 Policy

Environmental Policy

The Board of Directors of Wolfden has established a corporate environmental policy that guides the actions of the firm and is followed and promoted by employees and contractors hired by the firm. This policy is considered to be a part of the overall corporate governance policy. It will be regularly monitored for compliance with the appropriate performance review to ensure effective implementation.

Wolfden is fully committed to sustainable development and will ensure that all phases of its projects will follow this approach to resource development. In the context of the Ulu Project, Wolfden will:

- Ensure that responsible and effective environmental management planning is carried out for all aspects of the Project.
- Ensure that Inuit traditional knowledge is incorporated into environmental management plans for the Ulu Project.
- Ensure that an integrated approach is followed through all phases of development across all aspects of the organization.
- Monitor all activities through all phases of development of the Project for environmental compliance and management programs with a commitment to follow up in a timely and highly effective manner.
- Continually improve in regards to environmental performance as a cornerstone of the corporate environmental management plan.
- Develop, design and operate facilities that are based upon the efficient use of energy, resources and materials.
- Identify, assess and manage environmental risks.
- Develop, maintain and test emergency preparedness plans to ensure protection of the environment, workers and northern communities.
- Require contractors and consultants to comply with corporate environmental requirements and to monitor their environmental

performance.

- Ensure there is adequate environmental training for all staff and contractors and to encourage dialogue and understanding of environmental and community concerns through all phases of the Project.

- Ensure that closure and reclamation planning is integrated into mine feasibility planning and that there are adequate resources available to deal with closure at all phases of the Project.

2.0 REPORTING PROCEDURES

2.1 Initial Reporting/Action

Upon encountering a failure within a disposal system (sewage or mine sump) or a petroleum/chemical spill, every Wolfden employee/contractor is responsible for **immediately reporting** the situation to their supervisor, or if unavailable, report directly to the Project Manager. A telephone listing of department management is included in Appendix I. A copy of the Material Safety Data Sheets (MSDS) are available in the mine shop near the entrance to the arctic corridor (hallway). The MSDS is reviewed and updated on a regular basis.

An assessment of the spill or potential spill should be made, regarding identification of material, risk to personnel safety and the environment, cessation, control and containment. If you are **SURE it is SAFE** to do so, an attempt should be made to control the spill. Otherwise, after reporting the incident to a supervisor, you should **REMAIN CLEAR** and prevent others from accidentally entering the area.

2.2 Internal Reporting

Once the incident has been reported to the supervisor and an assessment has been made, the spill reporting will be handled as an incident by the Project Manager. Upon proper notification of the personnel in the "Response Team Flowsheet" (Figure 1), remedial action can commence in accordance with the corresponding response plan. The immediate reporting of the spill to the **N.W.T. Spill Line (867-920-8130) and the Water Resources Inspector in Iqaluit (867-975-4298)** will be carried out by either the Project Manager, or if unavailable, the appropriate Department Head or designate at the Ulu Mine.

2.3 External Reporting

The Project Manager (or designate), upon receiving a report, will immediately notify the Response Team.

RESPONSE TEAM FLOWSHEET
PETROLEUM/CHEMICAL SPILL PROCEDURE - ULU

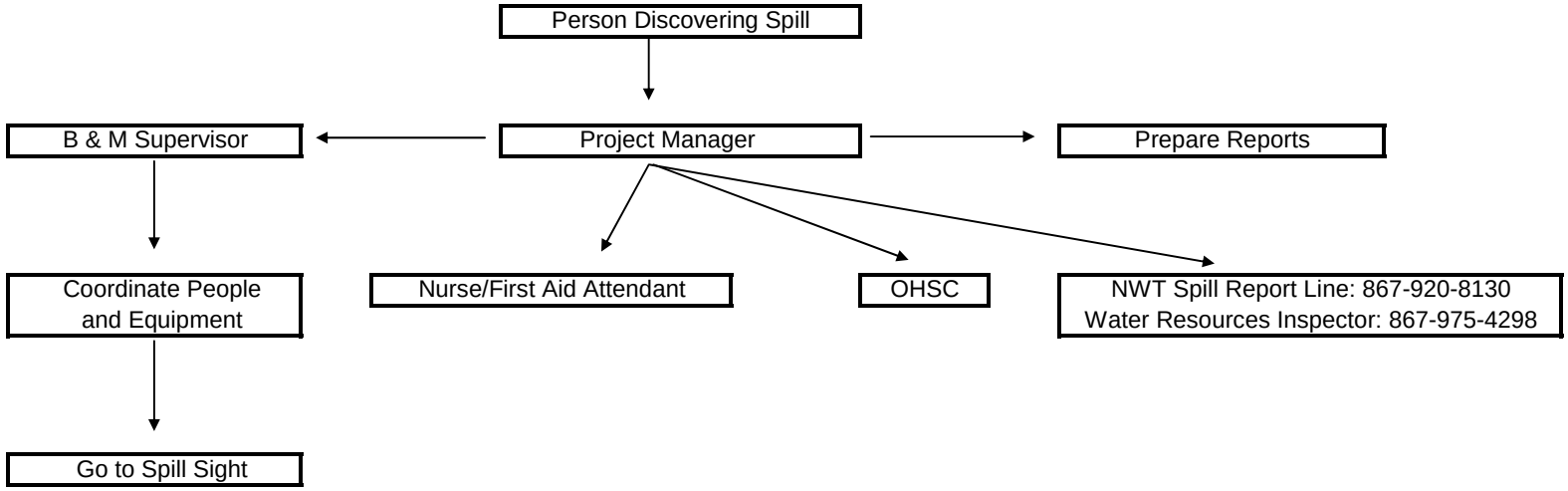


Figure 1

The Response Team shall then:

- Proceed to the failure/spill location and assess the situation;
- **DO NOT TAKE ANY UNNECESSARY RISKS;**
- make arrangements for first-aid and removal of injured personnel;
- co-ordinate equipment support and mobilize to location;
- liaison with Emergency Response personnel regarding containment, clean up and disposal procedures.
- when an unauthorized discharge of waste occurs or *where there is a reasonable likelihood* of a spill, **REGARDLESS OF QUANTITY**, fill out as complete as possible, a formal Spill Report Form (Figure 2 and Appendix I) and contact the **24 HOUR SPILL REPORT LINE immediately at (867) 920-8130 and the WATER RESOURCES INSPECTOR IN IQALUIT at (867) 975-4298**, giving notification of the spill.
- A copy of the Material Safety Data Sheets (MSDS) are available in the mine shop near the entrance to the arctic corridor(hallway). The MSDS is reviewed and updated on a regular basis.
- retain the original and deliver one copy to:

  President – Ewan Downie
  Chief Operating Officer – John Begeman
  Project Manager – David Stevenson
  Environmental Coordinator – John Cook

- The Environmental Coordinator or designate shall complete a **Detailed Spill Report** and submit to an Inspector no later than 30 days after the initial report of the spill. Submit to:

  Water Resources Officer
  DIAND, Nunavut District, NU
  Baffin Region
  P.O. Box 100
  Iqaluit, NU
  X0A 0H0

Several Government departments are available with expert advice to assist in decision making where there are environmental concerns. A telephone listing of these departments is also included in the Appendix I.

Where there is a concern for the general health and safety of the public, every effort should be made to contact local communities and hunters and trappers associations. See the Appendix I for current contacts and phone numbers.

Figure 2. Spill Report Form

Northwest Territories

N.W.T. SPILL REPORT (Oil, Gas, Hazardous Chemicals or other Materials)

ᓄᓇᕗᑦ ᑯᐃᐊᒥ ᐅᓂᒃᑳᖅ (ᐅᖃᓕᒫᔪᓂᑦ, ᓴᓇᓂ, ᐊᑦᑕᐃᓇᖅᑐᑦ ᐃᓕᓴᐃᓂᑦ ᐅᑎᕐᕕᐊᓂᑦ)

24-Hour Report Line
24-ᓂᑦ ᐃᑲᖏᓂᑦ ᐅᓂᒃᑳᖏᐃᐅᔪᓐᓇᖅᑐᖅ ᐅᖏᓪᓗᓂ
Phone/ᐅᖏᓪᓗᓂ (867) 920-8130
Fax/ᓱᑲᑐᒃᑯᑦ (867) 873-6924

A Report date and time ᐅᑎᖅ ᓯᕗᓪᓚᕆᖏᑦ ᖃᓄᐃᓕᖅᑐᓗ ᐅᓂᒃᑳᑎᑎᓕᐅᑦ	**B** Date and time of spill (if known) ᐅᑎᓗᒃ ᑯᐃᑎᑦᓗ ᖃᓄᐃᓕᖅᑐᑦᓗ (ᖃᐅᔨᒪᓕᐅᔪᑦ)	**C** ☐ Original report ᓱᓕᓐᓂᖅᓯᒪᔭᖅ ☐ Update no. ___ ᐅᓂᒃᑳᑎᑎᓂᕐᒥᔪᖅ ᐃᓕᐅᑦ __	Spill number ᑯᐃᔪᑦ ᐃᓕᐅᑦ

D Location and map coordinates (if known) and direction (if moving)
ᓇᓂ ᑯᐃᑦ ᐊᒻᒪᓗ ᓇᓇᕐᓴᐊᑦ ᐃᓕᐅᑎᕐᓂᑦ (ᖃᐅᔨᒪᓕᐅᔪᑦ) ᐊᒻᒪᓗ ᓄᒧᓕᐅᑦᓭᓕᒻᒪᓕᖅᓯᑦ (ᐃᓐᓇᕐᓂᔪᑦ)

E Party responsible for spill
Pᖅᑯᑦ ᑯᐃᑎᕐᑎᑦᑦ

F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)
Pᓱᑦ Pᓱᓪᓗᓂᑦ ᑯᐃᑦ ᖃᓄᑎᓗ ᐊᖏᓂᓂᖅᑐᑦ (ᐊᖏᓂᓕ ᐅᖓᔪᓂᓂᓪᓗᓂᑦ ᐊᔪᓐᓇᖏᔪᑦ)

G Cause of spill
Pᓱ ᑯᐃᓵᔪᑕᐅᑦ

H Is spill terminated? ᑯᐃᔪᖅ ᓄᖅᑎᑎᑕᐅᓕᒃ? ☐ yes/ Δ ☐ no/ ᑲᖅ	**I** If spill is continuing, give estimated rate ᓱᓕ ᑯᐃᓵᔪᑦ ᖃᓄᑎᒥ ᓱᖅᓴᓂᖅᓯᒪᓕᖅᑐᑦ	**J** Is further spillage possible? ᑯᐃᖅᓴᓂᐅᔾᔨᓇᖏᖅᓯᒪᔪᑦ? ☐ yes/ Δ ☐ no/ ᑲᖅ	**K** Extent of contaminated area (in square metres if possible) ᖃᓄᖅ ᐊᔭᑎᑎᓕ ᑯᐃᓕᐃᑦᓯᖅ (ᐅᓪᓗᖓᓱᒪᓗᑐ ᐊᔪᓐᓇᖏᔪᑦ)

L Factors affecting spill or recovery (weather conditions, terrain, snow cover, etc.)
Pᓱᑦ ᐱᓵᔪᑕᐅᑦ ᑯᐃᔪᒧᑦ ᐅᑎᕐᓗᑦ ᐊᖏᕐᕈᑕᐅᓂᓱᑎᑐᓗᒍ (ᓱᓕ ᖃᓄᐃᓕᖅᓄᓂᖅᓄᑦ, ᓂᓂ ᖃᓄᐃᓕᖅᓄᓂᖅᓄᑦ ᐊᐅᓚᐅᔪᓂᖅᓄᑦ, ᐊᔪᕈᓵᔾᔪᖏᓪᓗᓂᑦ)

M Containment (natural depression, dykes, etc.)
ᐅᖓᔪᓂᖃᖅᑎᑦ Pᓕᓂᓐᓇᑦ ᐃᓱᖏᓐᓂᓱᒪᓕᖅᑐᑦ (ᓂᓂᒥ ᐃᓱᖏᓐᓂᑦ, ᐊᔪᕈᓵᔾᔪᖏᓪᓗᓂᑦ)

N Action, if any, taken or proposed to contain, recover, clean up or dispose of product(s) and contaminated materials
ᖃᓄᐃᓕᓴᐅᑦ, ᖃᓄᐃᓕᓴᐅᓕᖅᑐᖅᓯᒪᔪᑦ ᐅᑎᕐᓗᑦ ᖃᓄᐃᓕᓴᐅᓕᖅᑐᑎᒍᑎᓪᓗᖅᓯᒪᔪᑦ, ᐊᑕᐅᓯᕆᑎᑕᐅᓂᒃᑯᓪᓗᒍ, ᓄᖅᑲᖅᓯᑕᐅᓂᒃᑯᓪᓗᒍ, ᓴᓇᒪᖏᖅᓯᑕᐅᑦ ᐅᑎᕐᓗᑦ ᐃᒪᑕᐅᓂᑎᑎᖅᓯᒪᔪᑦ ᑯᐃᔪᖅ (ᑯᐃᔪᑦ ᐊᑐᓵᔪᑕᐅᓕᒃ) ᑯᐃᓕᓐᓂᖅ ᑯᐃᑎᑎᓕᐅᑦ.

O Do you require assistance? ᐃᑲᔪᖅᑕᐅᓴᖃᖅᖏᑦᑐᖅᓯᒪᔪᑦ? ☐ no ᑲᖅ ☐ yes, describe: Δ - ᓇᓗᓇᐃᓴᖅᓄᑦ	**P** Possible hazards to persons, property, or environment; eg: fire, drinking water, fish or wildlife ᐊᑦᑕᓴᓇᐃᔾᔨᓇᖏᖅᓯᒪᔪᑦ ᐃᓄᒃᑎᑦ, ᐱᖓᑎᓕᐅᑦ ᐅᑎᕐᓗᑦ ᐊᑕᑎᒧᑦ ᓱᓕ - ᐃᑭᒪᓄᓂ, ᐃᒥᓐᒧᑦ ᓂᐅᖏᖅᑕᐅᓱᒧᓄᓂ, ᐃᖃᓗᓐᓂᑦ ᐅᑎᕐᓗᑦ ᓂᓪᔨᑎᓂᑦ

Q Comments and/or recommendations ᐅᖃᐅᓯᒪᔪᑦ ᑯᐃᒪᓗ ᐅᑎᕐᓗᒃᑯᑦ ᖃᓄᐃᓕᓴᐅᓕᖅᑐᖅᓯᒪᔪᑦ

FOR SPILL LINE USE ONLY
ᐊᑐᖅᑕᐅᓯᒪᔪᖅ ᑯᐃᔪᓂᑦ ᐅᖃᓕᓴᐃᔾᔨᓇᖏᑦᑐᓗᒍ

Lead Agency
ᐃᖅᓗᓇᐃᖅᑐᓂᓕᓴᐃᑦ ᑯᐃᔪᒥᐅ ᑲᒪᕐᖃᖅᑐᑦ-

Spill significance
ᑯᐃᔪᑦ ᖃᓄᐃᓕᓴᐅᓕᖅᑐᑦ-

Lead Agency contact and time
ᐃᖅᓗᓇᐃᖅᑐᓂᓕᓴᐃᑦ ᑯᐃᔪᒥᐅ ᑲᒪᕐᖃᖅᑐᑦ ᖃᐅᔨᓴᖅᑎᑎᖅᑕᐅᓂᒃᑯᓪᓗᒍ ᑯᐃᓐᓇᖅᑐᑦ ᖃᖅᑐᖅ

Is this file now closed?
ᑕᕐᓇ ᐅᓂᒃᓴᓇᐅᔪᖅ ᒪᑐᐅᑦ?

Reported by ᐅᓂᒃᑳᖅᑐᖅ	Position, Employer, Location ᖃᓄᐃᑐᒥᐅ ᐃᖅᓗᓇᐃᖅᑐᓂ, ᐃᖅᓗᓇᐃᖅᑐᖅᑎᒃ, ᓇᒥ	Telephone ᐅᖃᓕᐅᑦ
Reported to Pᓱᓕᓂ ᐅᓂᒃᑲᑕᐅᔪᖅ	Position, Employer, Location ᖃᓄᐃᑐᒥᐅ ᐃᖅᓗᓇᐃᖅᑐᓂ, ᐃᖅᓗᓇᐃᖅᑐᖅᑎᒃ, ᓇᒥ	Telephone ᐅᖃᓕᐅᑦ

NWT 1752/0593

2.4 Response Team Organization

The response team organization has been summarized in the Response Team Flow Sheet (Figure 1). Within this team there are key personnel which will respond to all spills and assist in the implementation and coordination of the respective response plans. The titles and roles of these individuals include, but are not limited to those outlined below. Due to the rotational schedule of many individuals, there is the possibility of one or more being off site at any one time. The alternate person(s) responsible for the specific role will be the designate identified below.

Chief Operating Officer (during suspended program)

Through the Company's Policies and the Emergency Procedures Manual, ensure that the Plan is properly distributed to those supervisory personnel most likely to encounter a spill or unauthorized release during normal operations.

Ensure that all personnel are adequately trained in the safe working procedures and have access to the proper personal protection for handling hazardous material spills PRIOR TO an incident occurring.

Ensure that all equipment is properly designed and maintained, and is available for an emergency situation to minimize the risk during response.

All Media Relations should be carried out by the Chief Operating Officer or his designate.

ALTERNATE; Project Manager, or other as designated from time to time.

Project Manager

Responsible for ensuring that adequate precautions are taken during normal operations in association will the Advanced Exploration Project.

Provide all necessary personnel and equipment to contain, mitigate and clean-up the spill as required. If additional supplies are required, initiate the relocation of the "Emergency Spill Response Trailer" (ESRT) to the spill location for immediate access. The ESRT is located next to the fuel tank farms at Camp 3. The alternate spill response kit is in the sea container located north of the Ulu fuel tank farm.

ALTERNATE; Building & Maintenance Supervisor, Mine Captain, Senior Engineer, Senior Geologist, or other as designated from time to time.

Safety Officer

Provide technical support and advice on personnel safety during control and clean-up operations. Ensure all safety practices are in place and that the activity is performed according to standard safety procedures.

Ensure through regular training programs that all personnel involved in the response are capable of dealing with the identified spills as provided in the contingency manual. As well, that they are fully aware of their responsibilities in preserving the health, safety and the environment with regard to equipment/ component failures and spills.

In the event of a petroleum spill, mobilize the Fire Crew to stand-by as there may also be a need for controlled burning.

ALTERNATE; Project Manager, Building & Maintenance Supervisor, Mine Captain, Senior Engineer, Senior Geologist, or other as designated from time to time.

Environmental Coordinator

Through evaluating the initial report and assessing the magnitude/potential impacts of the incident, provide direction and technical advice on the containment, clean-up and disposal procedures activated through the Plan.

Liaison with Company Management and Government Agencies.

Submit the spill report via the 24 hour Emergency Spill Line and follow-up with the formal written "Detailed Spill Report".

ALTERNATE; In the absence of environmental staff, spill reporting shall be the responsibility of the Project Manager (or alternate) responsible for initial spill discovery and response.

2.5 Response Team Role

Following consultation between the Project Manager, Building and Maintenance Supervisor and other necessary Ulu personnel; the role of the Team(s) upon arrival at a failure, petroleum or chemical spill are as follows:

a) assemble the necessary personnel and equipment required to contain the spill; The Emergency Spill Response Trailer is located next to the fuel tank farms at Camp 3 (Figure 3). The alternate spill response kit is in the sea container located east of the Ulu fuel tank farm (Figure 4).
b) proceed to the scene with the Response Team and co-ordinate the overall containment/clean up and/or repairs;

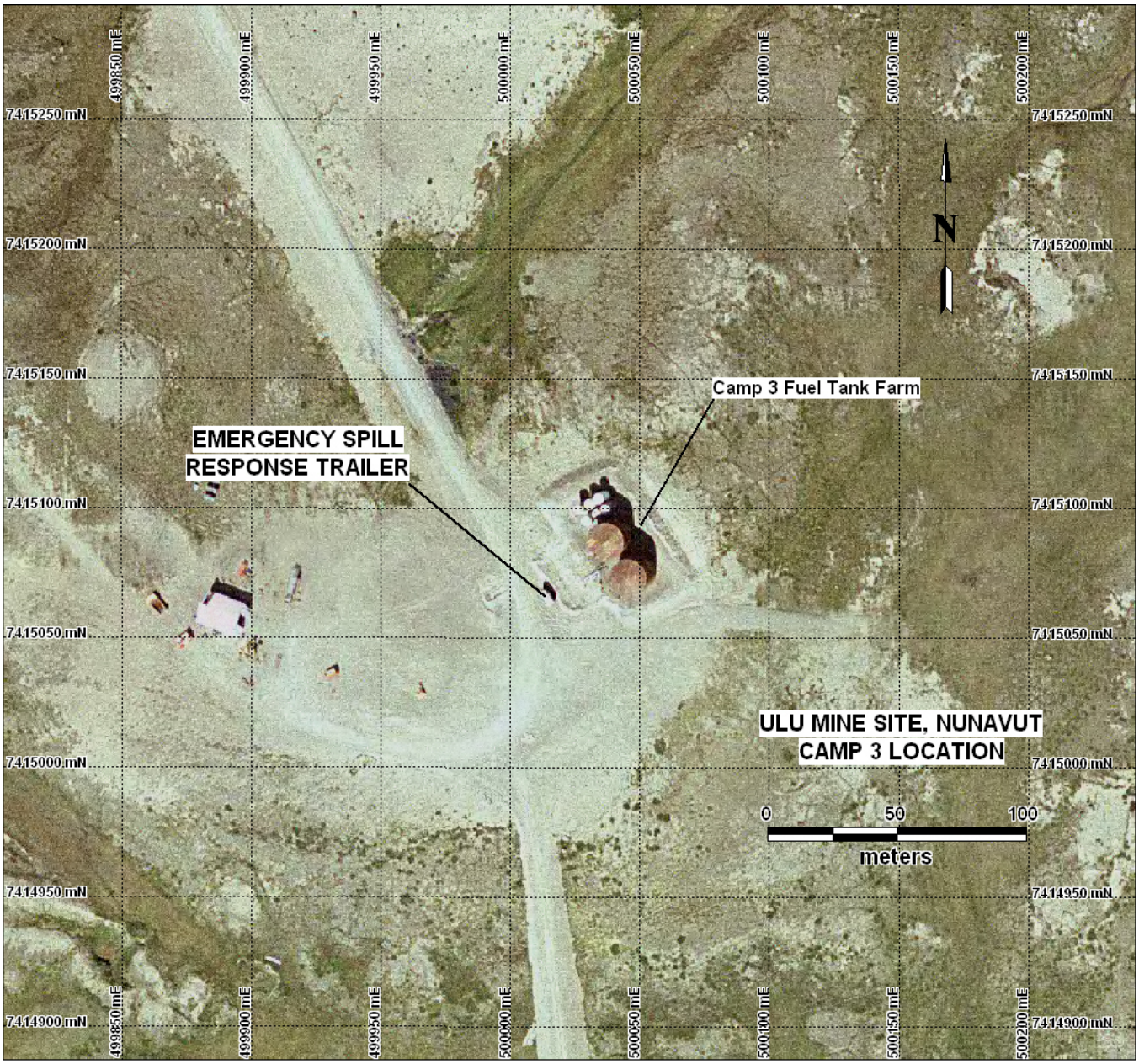


Figure 3. Emergency Spill Response Trailer Location – Camp 3

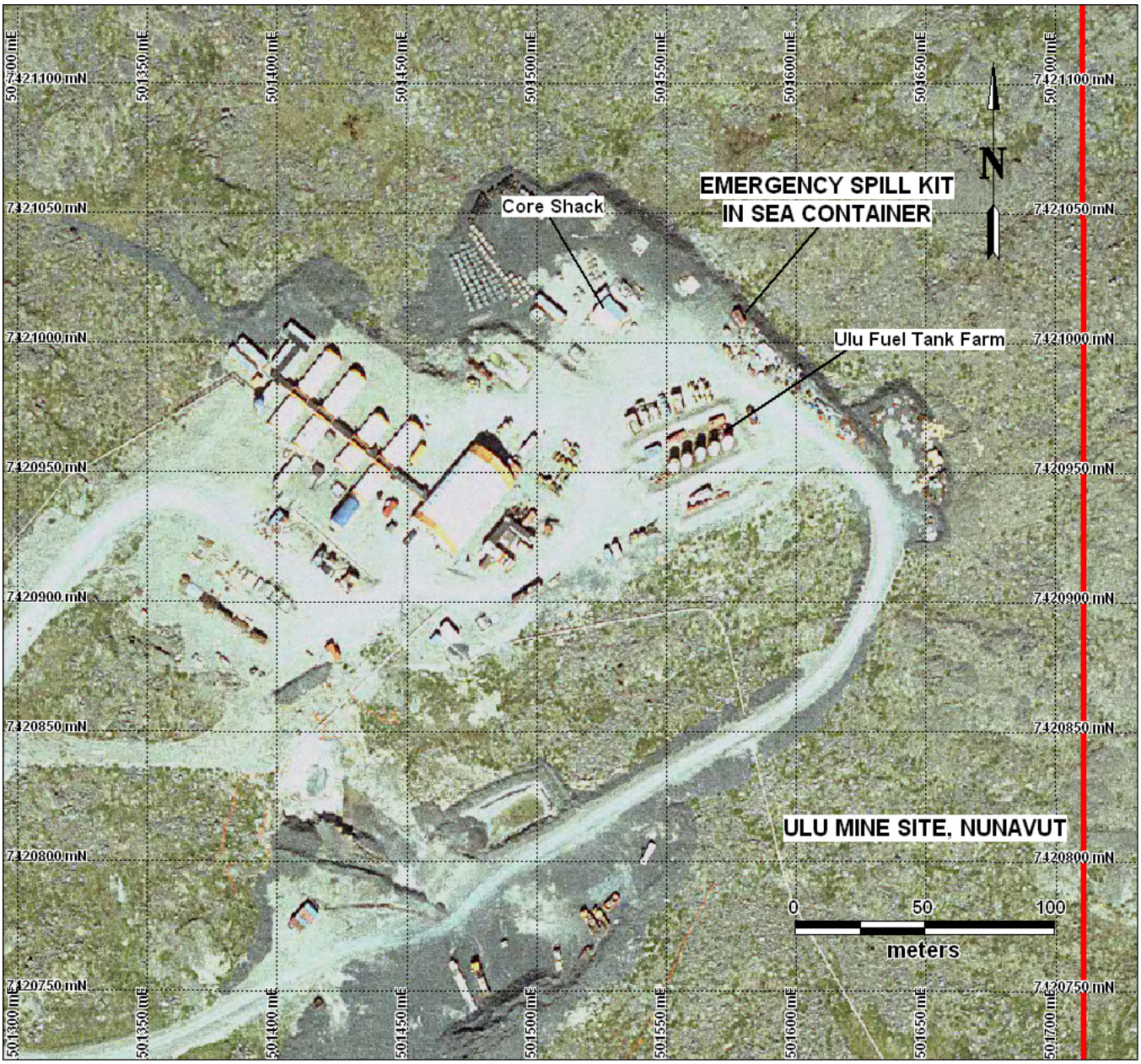


Figure 4. Emergency Spill Kit Location – Ulu Mine Site

c) assess the possibilities of any danger to life, property or equipment;
d) determine if any product is escaping;
e) take necessary action required to stop/reduce/contain any further product from escaping;
f) attempt to determine the extent of the damage and if it extends beyond an original containment area;
g) if contained within a berm (fuel/oil), pump out that which is recoverable, then remove and replace the soil within the berm (contaminated soil to be removed to the disposal site and burned);
h) if outside the berm (fuel/oil) attempt to determine whether the cause is from overflow or a damaged berm/liner. Should the cause be a damaged liner, repair or replace it;
i) determine whether it would be safe to burn off the spilled fuel or would the surrounding soil have to be removed to a disposal area and burned. Any burning requires prior approval from regulatory authorities.
j) if chemical, determine extent of spill, whether any material is still escaping and the containment necessary.
k) all contaminated materials are to be removed and disposed of according to individual response plans, or as directed by appropriate regulatory personnel.

3.0 SITE INFORMATION

3.1 General

Echo Bay Mines Ltd. purchased the Ulu site lease from BHP in 1995 with plans to develop the property into a satellite mine for additional mill feed to the Lupin mill. An underground development, diamond drilling and bulk sample program was initiated in 1996 to provide infill geological information. Echo Bay temporarily shut down the Ulu Project site in September 1997. Wolfden Resources Inc. purchased the Ulu Project in February 2004.

The Ulu Project is situated in Nunavut, with the underground exploration site at 100° 58' W longitude and 66° 54' N latitude (Figure 5). The site is located in the treeless arctic tundra where rock and glacial features dominate the landscape. Located about 12 km north of the Hood River and 150 km north of the Lupin Mine, the site is accessible year round only by aircraft. Bulk items were brought on site via winter road and during exploration activity, day to day supplies are flown to the camp. The area is characterized by severe winter climate and mild summers with an overall temperature range of -50° to +30° Celsius. Permafrost in this area typically extends to several hundred metres.

The Ulu Project site is completely self-contained with the exception of the transportation requirements for materials/supplies and workforce mobilization. There are two main location areas; the Ulu Camp which houses the residential complex consisting of Weatherhaven accommodations, kitchen and recreation

area, the ore storage pad and, Camp 3, which is comprised of a maintenance shop and fuel tank farm.

3.2 Site Components (Operations)

The site components are limited to the Project camp, maintenance shop and fuel storage. Additional components include the water supply pipeline, the sewage treatment plant and associated piping as well as the ore storage pad.

3.2.1 Mining and Ore Storage

When production mining begins, ore from underground will be brought to the surface and stored on an above ground constructed pad. This pad is designed to store approximately one years production prior to shipment to the High Lake Mine for processing within the High Lake mill. This is assuming a positive production decision at High Lake. As there may be runoff from the storage pad during the spring melt and summer precipitation events, lined catchment areas are to be in place to contain the water for testing prior to release. A lined sump is also located at the entrance to the mine workings (portal). This sump was initially constructed for recycling drill water during portal and ramp development but is available for containment and storage of excess water if encountered during exploration and development.

3.2.2 Sewage

All camp wastes (kitchen and sleeping quarters) are collected and treated with a small Rotating Biological Contractor treatment plant. Effluent is then transported via a 550 metre, insulated two inch pipeline to East Lake (Figure 6).

Future proposed plans include a small containment dyke to be constructed at East Lake to provide additional retention along with a contingency holding pond for excess ore storage pad runoff or an unexpected volume of water from the mine development.

3.2.3 Mine Water

The Ulu Project is located geographically in an area of continuous permafrost resulting in frozen ground to a depth of approximately 350 metres. Due to this feature, there is very little ground water that requires handling from the underground workings.

The day to day underground exploration and development do require some water to be supplied from surface. Recycling of water occurs throughout the development, however some water has been pumped to surface for storage at the portal sump. Accumulated water would be tested for all required constituents prior to any release of water to the East Lake drainage system.

FIGURE 5 Ulu Site Location Map

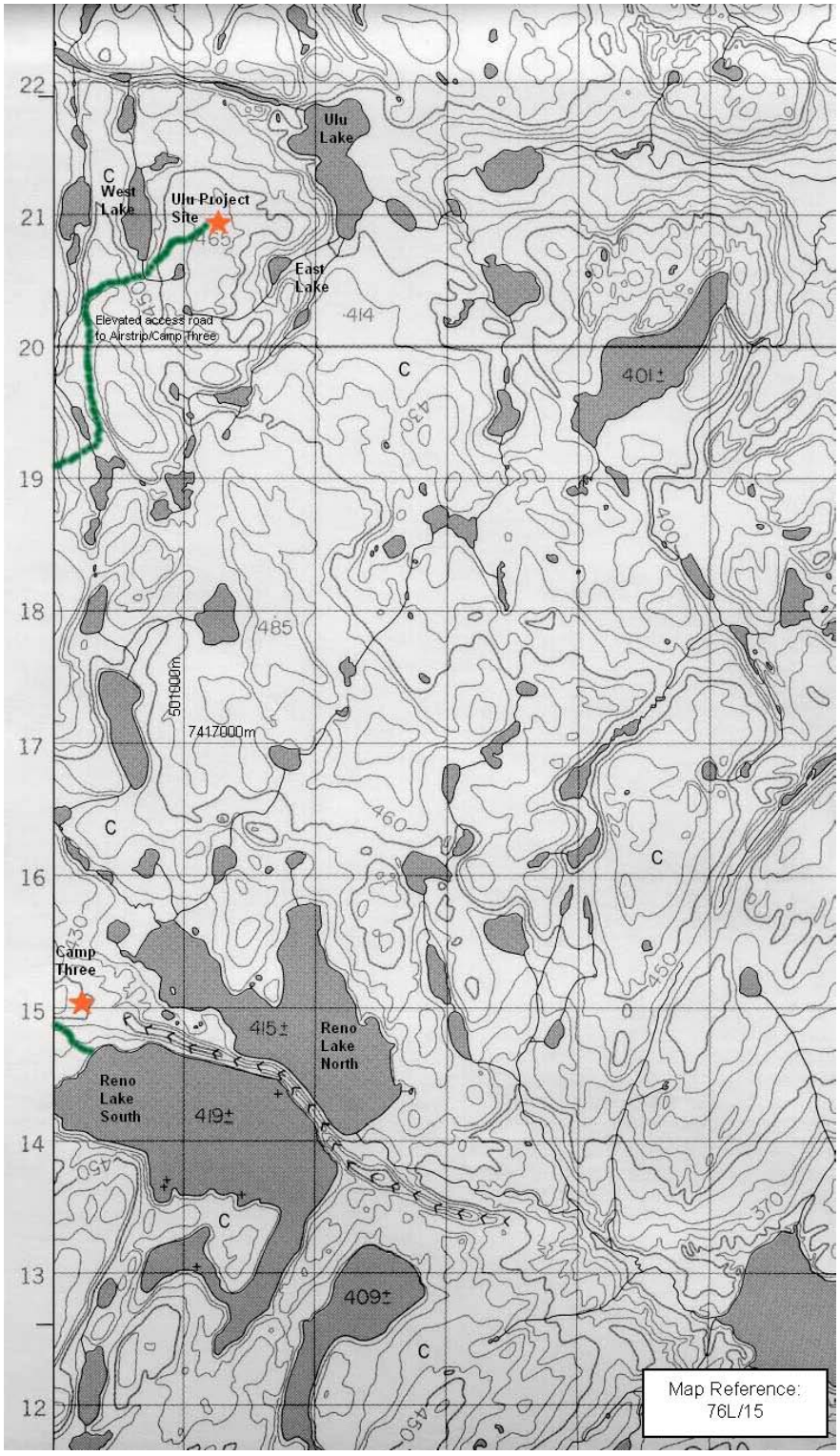
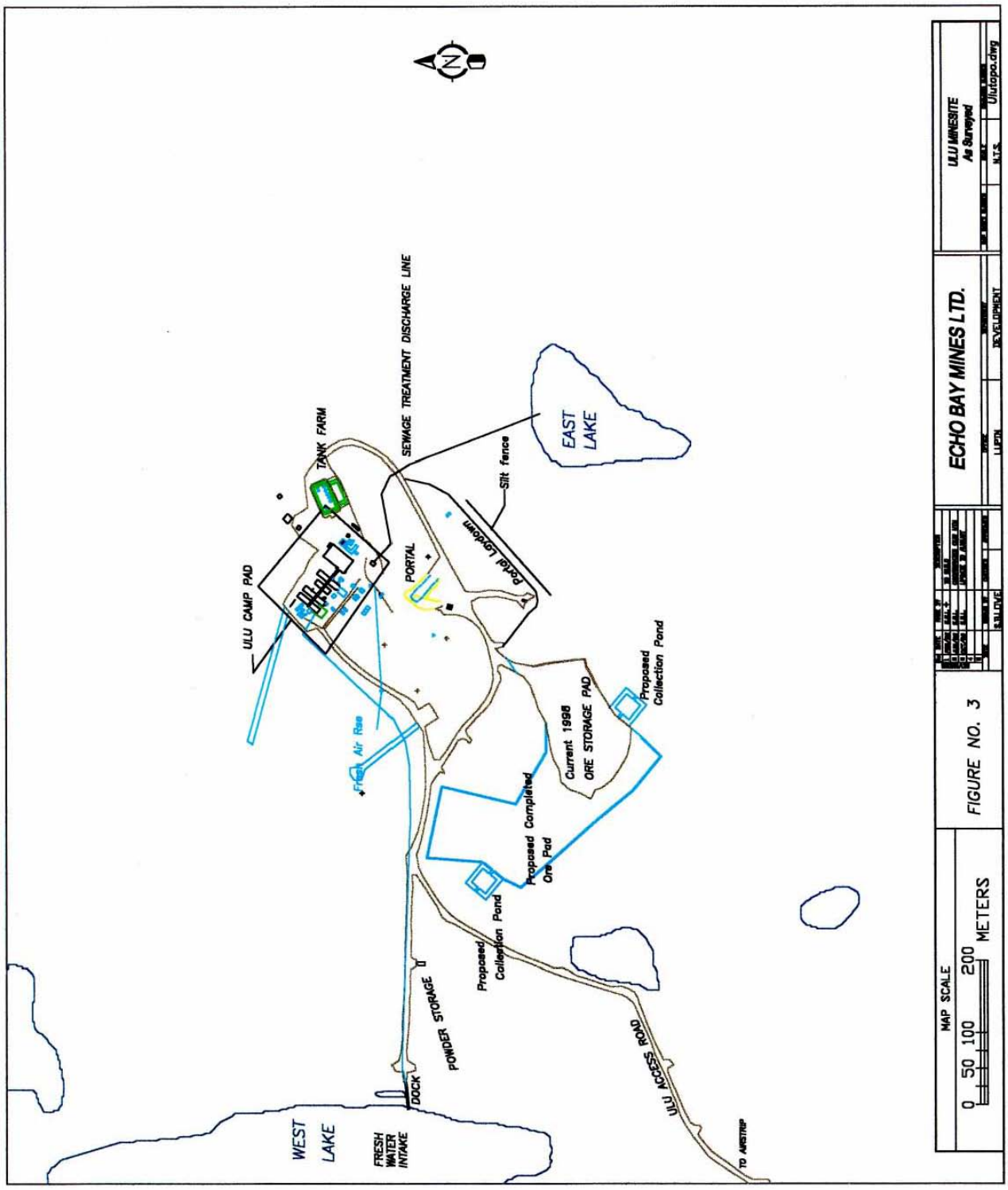


FIGURE 6 Sewage and Water Supply



3.2.4 Water Source/Supply

All camp water is obtained from a nearby lake, referred to as West Lake. Water is supplied to the camp via an insulated two inch pipeline approximately 680 metres in length and powered by a seven horsepower submersible electric pump installed on a floating dock. Two storage tanks are present at the site; a 27,000 litre tank for general water use and a 63,000 litre tank for fire water storage. Water consumption for the camp is expected to be less than 50 m3/day.

3.3 Storage Facilities (Consumable)

All consumables are transported to the site via aircraft and stored for use during the next operational year. The items of concern here are the petroleum products (diesel fuel, gasoline, lubricants) and chemicals (explosives) that are stored in above ground facilities.

These may contribute some risk with regard to the protection of water quality within the mine site area.

3.3.1 Petroleum Products

Fuel storage for the Ulu Project is operated through two individual tank farms. All bulk storage for petroleum products at the Project Site have been provided with secondary containment in the form of constructed tank farm facilities incorporating an impermeable liner and berm as well as off-loading apron. This provides protection against any spillage entering the ground and potentially contaminating the water supplies. The impoundment volume of each facility is sufficient to accommodate 110% volume of the largest single tank volume that is contained.

The tank farm at Camp 3 or main staging area, consists of two 350,000 usg tanks and six 14,000 usg tanks. At the Ulu site, fuel is stored in five 14,000 usg tanks. Both tank farms store P40 and P50 grade fuels. Fuel is stored in the remote tank farm at Camp 3 until required at the Ulu camp at which time it is transferred via tanker.

The products that are located at the site include, in order of quantity; P40 fuel, P50 fuel, Jet A, W30 lube oil, Ralube and Gasoline.

Please refer to the attached Materials Inventory for general location of all materials and storage facilities

3.3.2 Chemical Products

The major chemical product used at the Ulu Project is an explosive (Ammonium Nitrate Fuel Oil also know as ANFO). The main storage facility is located at Camp 3 with a day use storage at the Ulu Project underground access. *Note:*

During the suspension of exploration activity, all explosives have been removed from the property.

3.4 Receiving Environment

The Ulu Exploration Project is located in the treeless arctic tundra of Nunavut The site is located on a glacially modified bedrock outcrop. The terrain is rugged, consisting of exposed bedrock, usually modified by frost action in to blocky, angular boulders, relocated bedrock boulders and occasional glacial erratics. The dominant plant species in these areas was found to be dwarf birch, labrador tea and heather. Two lakes of significance flank the Ulu Project site locally known as West Lake and Ulu Lake. A smaller, shallow body of water referred to as East Lake is immediately adjacent to the site. Sedge tundra occurs along the shorelines of lakes in the vicinity. Drainage from the lakes in the Ulu area follow a flow pattern to Ulu Lake through to Ulu Creek, then into the Frayed Knots River which eventually flows into the Hood River.

Located approximately 7km to the southwest and approximately 5km north of the Hood River is the Ulu Camp 3, which is used for fuel storage and additional heavy equipment. The terrain is not nearly as rugged and hosts smoother topographical glacial features including several eskers and rolling moraines. Considerable more till cover is present and the vegetation cover is respectively more diverse.

Due to the isolated location of the exploration project along with the air only access (with the exception of the winter road haul season), the potential impacts to public access areas are minimal.

Environmentally sensitive areas, in addition to the surrounding tundra include; the East Lake drainage area which will collect all site drainage from the camp including the camp sewage treatment plant effluent, mine portal (sump discharge if needed) and the ore storage pad; West Lake and its close proximity to the access road and Reno Lakes with their relationship to Camp 3 and its fuel and explosives storage. All drainage within the Ulu Project area is within the Hood River watershed. Boulder filled channels at the outlets of the lakes provide for mainly subsurface drainage to the Hood River system after spring freshette.

The larger lakes in the Ulu Project study area are regarded as having fish habitat to some extent. No aquatic biological inventories were carried out at East Lake due to its small size and isolated position which precluded the existence of fish. Potential sources of contaminants in these areas include general runoff from the site facilities (which may include petroleum products, ammonium nitrate explosives) and dust generation from vehicle traffic on nearby roads. Potential vehicle incidents along the access road between the main camp and Camp 3 also need to be considered as a source of contaminants.

4.0 OPERATIONS SYSTEM – COMPONENT MALFUNCTION PREVENTION

As a regular daily inspection, the following checks are carried out by the Project Manager or designate:

Sewage Line

- Visual inspection of the package sewage treatment plant.
- Visual inspection of the pipeline and heat trace checks at locations along the pipeline.
- Visual inspection of the pump (lift) station at the main camp.

Minewater Sump

- A daily visual inspection shall be conducted of the lined sump and its pipe line to ensure its capacity and integrity. This sump is located outside of the portal and collects/recycles water pumped from underground during drilling activities.

Freshwater Pump and Distribution

- Building heater check; ambient room temperature.
- In-line heater check; discharge water temperature.
- Pump temperature.
- Doors and general condition.

Fuel Storage Facilities

- Visual inspection of the bulk fuel storage facilities at both the main camp and at Camp 3. General condition of the two sites along with fuel transfer record keeping are essential. Fuel lines, valves and transfer aprons are to be checked on a weekly basis. Status of fuel transport vehicles are to be included in the inspections.

5.0 SYSTEM MALFUNCTION – RESPONSE INFORMATION

The Sewage system, the mine water line and sump and the fuel storage facilities are the main components of concern with regard to ongoing activities and in discussing failures and system malfunctions.

5.1 Sewage System

The sewage system is operated at the main camp and consists of a modular Rotating Biological Contactor with effluent discharge to the East Lake basin. The

system is checked on a regular basis, however, should a failure occur all overflow/releases would report directly to East Lake basin. Problems with the collection system and piping would be a little more widespread as the camp area has been maintained quite level with a few small depressions and appropriate grading for miscellaneous collection.

Release from East Lake occurs naturally and flows toward Ulu Lake. The majority of flow after spring melt is considered to take place among the boulders in the ouflow channel and below surface. Tentative plans during final construction include the addition of a containment berm to provide an additional barrier prior to reaching Ulu Lake.

If a failure should result along the heat traced two (2) inch pipeline between the camp and East Lake, a shutdown of the system would be required and repairs undertaken.

- for the short term, the sewage effluent may be re-routed to the sump located at the portal. The effluent in the sump, if mixed with mine water would be analysed prior to discharge to the environment, and only upon NWB approval.

Appropriate response team action would have repairs completed to the satisfaction of the supervisor in charge and effluent returning directly to East Lake.

5.2 Mine Water

5.2.1 Uncontrolled Release

In the event of a line break or malfunction along the mine dewatering line the Building & Maintenance Supervisor would initiate a lock out of the pumping system and employ the appropriate Reporting/Response team action.

As the mine dewatering line is located down gradient of the sump, any water remaining in the line would back flow into the mine workings. Likewise, any failure of the line prior to the sump would result in the water simply returning to the mine. With the sump located just outside of the portal, any failure, breach or overflow of the containment berms would result in the contents flowing downhill towards the portal. In the event of a winter failure, there may be the possibility that snow accumulation and buildup from clearing practices impedes the flow of water and it occurs away from the portal, then immediate action to reduce and minimize impacts to water resources in the area are required. Re-establishment of the containment or pipeline integrity is a priority.

Ground Contamination - Any mine water that has escaped from the pipeline and deposited on the surrounding ground would be contained if possible.

removed and disposed of within the mine portal (or in an alternate sump when construction has been completed - Ore Storage Pad). Contaminated snow should also be removed to the portal location to allow collection of runoff in the spring.

Water Contamination - Any mine water that has escaped from the system will travel down gradient from the site pad and collect in the East Lake basin, where sampling can determine extent of contamination.

5.3 Petroleum and Chemical Products - Response Information

5.3.1 General

The petroleum and chemical products used at the Ulu Exploration Project, that exist in significant amounts to be concerned with in this Plan, are summarized in Table 1 located within the Appendix I. This table indicates the petroleum/chemical product name, storage location and normal storage container packaging or storage volume utilized.

There are two standard operational procedures where possible spill scenarios may be encountered involving petroleum/chemical products. These are during:

1) receiving/offloading procedures whereby fuel is pumped from tanker trucks to site storage facilities and chemical supplies are removed from transport trucks to their respective storage locations.

2) normal daily operations whereby fuel is pumped from the main tank farm at Camp 3 to the vehicle which refuels the Ulu Camp satellite tanks and when explosives are transported from the storage facilities at Camp 3 to the day storage area at the Ulu Camp.

The measures outlined in the response plans intend to minimize the potential impact to water and land following a petroleum/chemical spill. Keeping in mind that the immediate action is to preserve health and limit environmental damage, the plans deal with the procedures/methods of spill containment, termination, remedial measures and clean-up of spills related to those products used at the mine.

5.3.2 Spill Containment, Recovery and Disposal

The potential exists for spills of both petroleum products and chemical (ammonium nitrate) used at the Ulu Exploration Project. A spill may be in the form of a liquid as in petroleum products, or in the form of a solid as in the ANFO which could be used on a regular basis in the event the existing ramp is extended.

The spill of either form may occur in one or a combination of the following areas; on land, snow, ice or in the water. Various proven practical methods of containment and recovery are well documented for use in northern climates and are summarized below. For additional technical information, one should consult the Environment Canada Report EPS 9/SP/2, December, 1986.

The first initial response is to prevent any direct health risk to response personnel. Persons not directly associated with the clean-up operations are to be directed to leave the immediate area. The area will be isolated and limited to traffic as directed by the response team personnel.

Containment

On Land

Petroleum products spilling onto frozen snow covered ground may be contained by the construction of **snow dykes**. For fast initial containment of smaller spills the dykes can be built manually with shovels. Larger spills may require the use of heavy equipment such as graders and bulldozers.

The impermeability of dykes may be ensured by lining with a polyethylene plastic liner, plastic tarpaulin or similar synthetic material. Alternatively, in freezing temperatures, water may be sprayed or poured over the dykes to further enhance the barrier to the spilled material. This method assumes that water is available or may be accessible from the spill site or camp. Synthetically lined dykes are more effective than just snow or snow and ice-lined dykes.

During warmer months, containment dykes may be constructed from **sand or gravel** if these materials are available in an unfrozen form. Again, for smaller spills, the dykes can be fashioned manually with shovels where for larger spills, trucks or other heavy equipment (frontend loaders) will normally be required to transport and handle sand and gravel.

Trenching or ditching can be used as a method for containing and/or intercepting the flow of liquid spills on land. Ice, snow, loose sand, gravel and surface layers of organic material can usually be scraped or dug away until the underlying frozen substrate is reached. This can be effective in re-directing flow or simple containment prior to pumping or absorbing the spilled material. Trenching in solid frozen ground or rocky substrate is normally neither practical nor possible.

The spillage of solid materials on land is much simpler to contain and recover. During the winter months, spilled material is generally self-contained due to its nature. Some precaution with regard to wind-blown dispersion may be required with lighter materials (ANFO). In these cases, a **layer of snow** placed on top of the spilled material will suffice until removal to appropriate disposal is arranged.

In summer months, minor containment berms will be required when there is moisture present or precipitation is occurring or is likely to occur.

On Snow

Containment on snow is readily achieved and is very effective due to its absorbent quality. Liquid spills (petroleum) will become immobile within the snow pack and easily removed for transport for recovery or disposal. Use the snow to its advantage in construction of snow dykes/dams. Whenever possible, the snow pack should be left in place to avoid contaminating the underlying substrate.

On Ice

Spills that occur on ice, from either direct spillage or migration to the ice, are greatly affected by the strength of the ice. If the spill does not penetrate the ice, and the ice is safe to work on, then the methods of containment are similar to that on land. Where the spill has penetrated the ice, the situation should be handled similar to that on open water. If, as in petroleum spills, the material floats, then every effort should focus on the recovery of the material using pumping/suction methods, and absorbents.

On Open Water

A spill occurring on or into open water is very difficult to contain and every effort should be made to prevent the material from entering the water. If in the case of petroleum products, the material floats, then immediate deployment of surface booms should take place to control the spread of material. Pumping is the method of choice for removal of contained material.

Recovery

Spilled petroleum products contained within a dyked or trenched area should be recovered by pumping into a standby tanker, portable storage tank or drums dependent on volume involved, or use of an independent vacuum truck. Pump and suction hoses should be screened to prevent snow, ice or debris from clogging the line or pump.

Any remaining material may be absorbed by use of a variety of natural and commercially available products. Synthetic products such as 3M Brand, Conweb and others are easier to use and more efficient than natural products.

The availability of shovels, rakes and pitchforks are invaluable in any spill clean-up and recovery operation. The use of heavy equipment for larger spill situations such as front-end loaders and haul trucks, make the removal of material easier. It also ensures that all materials, including absorbent sand, snow etc. have been removed from the site.

Disposal

Petroleum products such as fuel or oil that has been recovered by pumping into portable tanks, drums or a standby tanker can often be reclaimed and reused. Water and debris can be separated from the pure fuel by gravimetric means in a tank. In this manner disposal can be minimized and financial losses reduced.

In-situ combustion may be used as a final means of disposal after every effort has been made to remove the spilled fuel/oil etc. **Approval for burning of petroleum products must be obtained prior to combustion.** Burning should never be carried out on land where combustible organics are present and the oil has migrated into the soil. Removal is the method of choice in this case.

The most efficient means of igniting diesel oil for in-situ combustion is with a large size portable propane torch. Other highly flammable products such as gasoline or alcohol, or combustible products, such as wood may also be used to promote ignition of the spilled product. Spilled oil should be ignited where it has pooled naturally or been contained by dykes, trenches or depressions. Oil which has collected in slots in river ice may also be disposed of by in-situ combustion if sufficient holes are drilled in the ice. Once holes are drilled, the oil which collects in the holes may be ignited.

Liquid oil wastes (which cannot be reclaimed), oil contaminated snow and debris and oil residues left after in-situ combustion will be picked up and disposed of at a land disposal site approved by government authorities. Currently, hydrocarbon contaminated materials are removed to either the incinerator or the burn area of the site landfill for ignition. Disposal at local municipal dumps may be an alternative, if required, in this case GNWT would be consulted.

Spilled chemical products should be recovered and reused wherever possible. All materials unable to be used are currently collected and incinerated.

5.3.3 Other Concerns

Fire

In the event that the accident/incident is in combination with a fire, extinguishing the fire may be required prior to initiating efforts to stop the spillage.

In order to control the resulting runoff (in cases where water is used), and the subsequent spreading of the spilled material, any indication of slope away from the area of the spill should be dyked for containment.

Petroleum and chemical fires have the potential to generate toxic fumes under poor combustion conditions. Approaching and dealing with any fire from upwind is recommended as well as caution with regard to breathing the vapours

generated from the fire. Ulu personnel have access to the proper Personal Protective Equipment.

In the case where ANFO is the material involved the following action should be taken;

1) rope off the area and control entry
2) evacuate the area and do not attempt to fight the fire
3) the ANFO, or any resulting solution (fire in winter on snow or ice) must not be allowed access to bodies of water, especially flowing streams/rivers
4) fires involving small quantities of ANFO may be fought using water, however if the fire is not a hazard to persons or the surrounding environment, it is generally acceptable to allow the material to burn off, then initiate clean-up measures.

Camp 3 Fuel Tank Farm

In the event of any emergency at the tank farms relating to fire, flooding, spills, etc; any electrical power in the area shall be shut off as quickly as possible to minimize further damage. The "Emergency Spill Response Trailer" is located immediately adjacent to the Camp 3 fuel tank farm (Figure 3).

6.0 SPILL RESPONSE RESOURCES

A wide variety of spill control/recovery equipment and materials exists at the site for dealing with emergency spills of petroleum products and chemicals. Heavy construction equipment is also available for use on demand.

6.1 Response Equipment

All equipment is stored in such a manner as to be readily available on short notice. The Project Manager would immediately respond to a reported spill site by notifying his on duty equipment operators to move equipment and material necessary to provide control and cleanup measures at the reported spill. Additional operations personnel are available through the mine department if the need arises.

The equipment to be used would consist of a Cat 966D Loader, 2 CAT 769 Heavy Hauler Trucks, a D8N Dozer and a CAT 14G Grader. A current list of equipment at the Ulu Project Site is available in Appendix I.

Emergency spill containment and recovery materials and supplies are available for immediate mobilization at any time. These materials are in the designated sea container labeled Emergency Spill Kit located immediately east of the core shack at the Ulu mine site (Figure 4) as well as the "Emergency Spill Response Trailer" located next to the fuel tank farm at Camp 3 (Figure 3). These kits contain a

supply of absorbent pads, floor-dry absorbent, pumps, hoses, couplings and miscellaneous parts for recovery equipment. These kits are designed for a minimum spill capacity of 190 liters.

6.2 Response Team

Authorization for deployment of personnel, containment, clean-up and recovery equipment are as per the Figure 1 "Response Team Flowsheet" organizational chart.

The designate/next-in-line authority shall be contacted if management is off site and unavailable.

A telephone listing of Ulu Exploration Project contact personnel is included in Appendix I.

6.3 Training and Exercises

All response team staff will maintain familiarity with the continually updated Spill Contingency Plan by scheduling periodic reviews. For the Department heads, this is completed in conjunction with the review of the site's Emergency Procedures Manual.

All personnel dealing with equipment that would be involved in cleaning up any spills related to the Spill Contingency Plan have extensive experience as heavy equipment operators and, therefore, further training in this area is not seen to be applicable. The daily work routine followed by the surface heavy equipment operators, involves much of the same type of work as would be required when dealing with a dyke failure or a minewater line break. Roadway construction (materials hauling, grading) and snow removal/clearing are all part of day to day activities.

Training with regard to hazardous materials handling will be carried out as required and in conjunction with Transportation of Dangerous Goods Regulations.

WHMIS (Workplace Hazardous Material Information System) training is provided to all new employees as well as in the form of annual refresher courses for current employees. Core WHMIS along with job specific training is covered in these programs. Information through WHMIS is available at each department for "specifics" of that department. As well, master stations are in place which carry the MSDS's for the entire site.

Environmental Awareness Program sessions are held in conjunction with safety sessions which deal with employee environmental responsibility and spill

reporting. Initial orientation prior to beginning employment also includes the importance of environmental awareness.

The question of a simulation exercise should be scrutinized because it is our belief that during a simulated exercise, there could be damage caused to the fragile tundra which may result in extensive long term effects. There may be a need in the future for pumping/transfer of sump water to other holding areas or to the environment which could be done in conjunction with training exercises. Currently, pumping is not required nor seen to be an issue in the near future.

7.0 COMPONENT AND PETROLEUM/CHEMICAL PRODUCT – DETAILED RESPONSE PLANS

The following section contains the response plans for the major system components of the mine site and petroleum/chemical products stored and used at the Ulu Project. Additional details related to Ulu's sewage disposal facility can be found in the report titled "Ulu Advanced Exploration Project - Sewage Treatment and Solid Waste Disposal Facilities Operation and Maintenance Plan".

System Components

a) Sewage Disposal Facility
b) Mine Water and Sump

Petroleum/Chemical Products

c) Diesel Fuel
d) Gasoline and Aviation Fuel
e) Lubricating and Hydraulic Oils
f) Ethylene Glycol Antifreeze
g) Anfo Explosives

In the event of a **SEWAGE SYSTEM FAILURE (TREATMENT FACILITY/PIPING)** the following action plan is to be initiated.

24 HOUR SPILL REPORT LINE (867) 920-8130

WATER RESOURCES INSPECTOR (867) 975-4298

INITIAL SPILL RESPONSE

- Notify the Project Manager or designate immediately via radio, phone or in person and initiate the response team. **Spill reported via 24 hour emergency spill line**, above;
- If necessary, direct the initiation of shut down procedures for the pumping system in order to **STOP** the flow of sewage through to the environment (East Lake);
- If the failure is piping related, the sewage discharge will be shut down. Provisions, if in place may provide an alternative/temporary disposal to the mine portal sump for storage.
- A detailed spill report shall be submitted as per Section 2.3

HAZARDS

- the sewage stream from the site contains grey water from all sources (mill and mine drys, all accommodation shower facilities, kitchen and all washroom facilities on site.
- there are no chemicals used in the process;
- due to the nature of the source, health risks are associated with bacterial infections and disease that may be transmitted through exposure.

ACTION FOR FIRE

- Non-flammable
- use CO_2, dry chemical, foam or water spray (fog), although water may spread the contaminant;
- use water to cool other flammable materials;

RECOVERY

- **Ground contamination**; any sewage material that has escaped from the pipeline or containment areas onto surrounding tundra shall be removed, where possible and disposed of within the designated area for burial of sewage sludge;
- If required, esker material and/or crushed wasted rock shall be used to fill any depressions left after excavation of the spill material.
- Solutions, where contained shall be pumped back into the sewage treatment system or sampled and released if suitable;

- **Water contamination**; these areas are difficult to mitigate as movement of contaminated material (and water) may continue long after the initial incident;

- local authorities should be contacted regarding advice for cleanup or additional work to be carried out. DIAND Water Resources or Env. Can. Dept. of Fisheries and Oceans.

DISPOSAL

- contaminated materials are to be disposed of within the designated sewage sludge disposal area.

PROPERTIES

- the exploration site sewage system contains a mixture of camp waters which include camp drys, accommodation washroom facilities and the kitchen.
- water accounts for greater than 90% of the component which is used during day to day activities; the remainder is organic solids which are treated within the package facility.

ENVIRONMENTAL CONCERNS

- solution only mildly toxic to fish and other aquatic organisms due to the low dissolved oxygen that may occur due to biological loading;
- effluents could contain minor amounts of nutrients (nitrogen and phosphate components) that may promote plant growth in downstream water bodies.

CONTAINERS

- N/A

SUPPLIER

- N/A

SPILL CONTINGENCY PLAN	SECTION: ACTION PLANS
Ulu Exploration Project	SUBJECT: MINE WATER LINE AND SUMP FAILURE

In the event of a **MINE WATER PIPELINE or SUMP FAILURE** the following action plan is to be initiated.

24 HOUR SPILL REPORT LINE (867) 920-8130

WATER RESOURCES INSPECTOR (867) 975-4298

INITIAL SPILL RESPONSE

- Notify the Project Manager or designate immediately via radio, phone or in person and initiate the response team. **Spill reported via 24 hour emergency spill line**, above;
- The Mine Shift boss is to be notified regarding the potential need for disruption to the pumping system;
- If necessary, direct the initiation of shut down procedures for the pumping system in order to **STOP** the flow of mine water the sump;
- If the failure is piping related, the mine water pumping will be discontinued and recirculated within the mine underground sumps until corrections have been made.
- A detailed spill report shall be submitted as per Section 2.3

HAZARDS

- the mine water stream from underground contains water from all mining activities and a small amount of infiltration water.
- the only additive used is calcium chloride, added for drilling in the upper permafrost areas of the mine;
- due to the nature of activities underground (explosives use), there is ammonia contained in the water from dissolution at active mining areas. This ammonia is relatively stable in the water however it may be released as a gas if it comes in contact with cement, which raises the pH above 9.

ACTION FOR FIRE

- Non-flammable
- use CO_2, dry chemical, foam or water spray (fog), although water may spread the contaminant;
- use water to cool other flammable materials;

RECOVERY

- **Ground contamination**; any mine water that has escaped from the pipeline onto surrounding tundra shall be removed (pumped), where possible, and returned to the mine portal sump.
- If required, esker material and/or crushed wasted rock shall be used to fill any depressions left after excavation of the spill material.

- **Water contamination**; these areas are difficult to mitigate as movement of contaminated material (and water) may continue long after the initial incident;
- local authorities should be contacted regarding advice for cleanup or additional work to be carried out. DIAND Water Resources or Env. Can. Dept. of Fisheries and Oceans.

DISPOSAL

- contaminated materials are to be returned to the portal area or portal sump. Any leaching of contaminants will report back to the mine working via the portal.

PROPERTIES

- the mine site mine water contains a mixture of many naturally occurring elements from the ground being developed. As a result, various metals are present along with naturally occurring chloride from historic water giving the water a high conductivity from the dissolved solids. The pH is generally neutral at 7-7.5.

ENVIRONMENTAL CONCERNS

- solution may be toxic to fish and other aquatic organisms due to the low dissolved oxygen that may occur, ammonia present from underground operations and considerable dissolve solids present;

- effluents could contain minor amounts of nutrients (nitrogen components) that may promote plant growth in downstream water bodies. Ammonia is present from residual blasting agents.

CONTAINERS

- N/A

SUPPLIER

- N/A

SPILL CONTINGENCY PLAN	SECTION: ACTION PLANS
Ulu Exploration Project	SUBJECT: DIESEL FUEL

In the event of a **DIESEL FUEL** spill or where there is reasonable likelihood of a spill occurring, the following action plan is to be initiated.

24 HOUR SPILL REPORT LINE (867) 920-8130 INITIAL SPILL RESPONSE

WATER RESOURCES INSPECTOR (867) 975-4298

- Notify the Project Manager or designate immediately via radio, phone or in person and initiate the response team. **Spill reported via 24 hour emergency spill line**, above;
- **STOP** the flow of diesel fuel if possible;
- ELIMINATE open flame ignition sources;
- CONTAIN flow of oil by dyking, barricading or blocking flow by any means available. Use earthmoving equipment if nearby;
- if flow has reached flowing natural stream, mobilize team to deploy river boom, skimmer and sorbent booms.
- A detailed spill report shall be submitted as per Section 2.3

HAZARDS

- low toxicity by ingestion, mildly irritating to eyes
- combustible, low fire hazard;
- avoid contact with oxidizing materials

ACTION FOR FIRE

- use CO_2, dry chemical, foam or water spray (fog), although water may spread the fire;
- use fog streams to protect rescue team and trapped people;
- use water to cool surface of tanks;
- divert the diesel fuel to an open area and let it burn off under control;
- if the fire is put out before all diesel fuel is consumed, beware of re-ignition;
- where diesel fuel is running downhill, try to contain it as quickly as possible;
- rubber tires are almost impossible to extinguish after involvement with a fire. Have vehicles with burning tires removed from the danger area.

RECOVERY

- Recovered soils from contaminated fuel can be soaked up by sand and peat moss or snow if available, or by synthetic sorbents such as 3M Brand, Graboil or Conwed;
- if necessary, contaminated soil should be excavated;
- diesel fuel entering the ground can be recovered by digging sumps or trenches;
- diesel fuel on a water surface should be recovered by skimmers and sorbent booms (See Section on Recovery of Oil Spills).

DISPOSAL

- incineration under controlled conditions; obtain prior approval.
- burial at an approved site.

PROPERTIES

- chemical composition: mixture of hydrocarbons in the range C_9 to C_{18};
- clear to yellow, bright oily liquid with hydrocarbon odour;
- not soluble, floats on water.

ENVIRONMENTAL CONCERNS

- moderately toxic to fish and other aquatic organisms;
- harmful to waterfowl;
- may create unsightly film on water.

CONTAINERS

- transported by tanker truck and transferred to various storage tanks in the tank farm. See inventory in Appendix I.

SUPPLIER

- As per annual tendering. (eg: Petro-Canada)
- SEE MSDS, LOCATED IN THE SHOP, FOR ADDITIONAL INFORMATION

SPILL CONTINGENCY PLAN	SECTION: ACTION PLANS
Ulu Exploration Project	SUBJECT: GASOLINE/AVIATION FUEL

In the event of a **GASOLINE OR AVIATION FUEL** spill or where there is reasonable likelihood of a spill occurring, the following action plan is to be initiated.

24 HOUR SPILL REPORT LINE (867) 920-8130 INITIAL SPILL RESPONSE

WATER RESOURCES INSPECTOR (867) 975-4298

- Notify the Project Manager or designate immediately via radio, phone or in person and initiate the response team. **Spill reported via 24 hour emergency spill line**, above;
- **STOP** the flow of gasoline or aviation fuel if possible;
- ELIMINATE all possible sources of IGNITION, eg. extinguish cigarettes, shut off motors (from a remote location if surrounded by vapours);
- EVACUATE personnel from danger area;
- CAREFULLY CONSIDER the hazards and merits of trying to contain the spill. Contain only if safe to do so, and obvious benefit of containment is apparent (ie. contain if flowing towards a creek or water body). Otherwise leave gasoline to spread and evaporate. Do not attempt to contain a gasoline spill on water. Allow it to spread and evaporate;
- if spilled in an enclosed area, VENTILATE vapours.
- A detailed spill report shall be submitted as per Section 2.3

HAZARDS

- **EXTREME FIRE HAZARD** (Jet A, MODERATE), highly flammable;
- forms explosive mixture with air; is heavier than air and can migrate considerable distances to sources of ignition and flashback;
- easily ignited by flame or spark;
- avoid contact with oxidizing materials (eg. Lead Nitrate, acids);
- moderately toxic by ingestion, highly toxic if aspirated.
- Note: Jet B contains a small amount of Benzene which is a suspect human carcinogen.

ACTION FOR FIRE

- use CO_2, dry chemical, foam or water spray (fog), although water may spread the fire;
- use jet streams to wash away burning gasoline;
- use fog streams to protect rescue team and trapped people;
- use water to cool surface of tanks;
- divert the gasoline to an open area and let it burn off under control;
- if the fire is put out before all gasoline is consumed, beware of re-ignition;
- where gasoline is running downhill, try to contain it at the bottom prior to reaching lakes or streams;
- rubber tires are almost impossible to extinguish after involvement with a fire. Have vehicles with burning tires removed from the danger area.

RECOVERY

- unburned gasoline can be soaked up by sand and peat moss and snow when available, or by synthetic sorbents such as 3M Brand, Graboil or Conwed;

- if necessary, contaminated soil should be excavated;
- gasoline entering the ground can be recovered by digging sumps or trenches.

DISPOSAL

- evaporation;
- incineration under controlled conditions; obtain prior approval.
- burial at an approved site.

PROPERTIES

- chemical composition: mixture of hydrocarbons; Gasoline C4-C12, Jet B C6-C14 and Jet A C9-C16
- light green, clear, amber coloured liquids;
- volatile;
- not soluble, floats on water

ENVIRONMENTAL CONCERNS

- moderately toxic to fish and other aquatic organisms;
- may create unsightly film on water.

CONTAINERS

- Gasoline is transported by tanker trucks and pumped into a storage tank in the satellite tank farm. Drum shipping and storage of various grade fuels is in limited quantities.

SUPPLIERS

- As per annual tendering. (eg. Petro-Canada)
- SEE MSDS, LOCATED IN THE SHOP, FOR ADDITIONAL INFORMATION

SPILL CONTINGENCY PLAN	SECTION: ACTION PLANS
Ulu Exploration Project	SUBJECT: LUBRICATING/HYDRAULIC OILS

In the event of a **LUBRICATING OIL OR HYDRAULIC OIL** spill or where there is reasonable likelihood of a spill occurring, the following action plan is to be initiated.

24 HOUR SPILL REPORT LINE (867) 920-8130 INITIAL SPILL RESPONSE

WATER RESOURCES INSPECTOR (867) 975-4298

- Notify the Project Manager or designate immediately via radio, phone or in person and initiate the response team. **Spill reported via 24 hour emergency spill line**, above;
- **STOP** the flow of oil if possible;
- ELIMINATE open flame ignition sources;
- CONTAIN flow of oil by dyking, barricading or blocking flow by any means available. Use earthmoving equipment if nearby;
- A detailed spill report shall be submitted as per Section 2.3

HAZARDS

- low toxicity by ingestion, mildly irritating to eyes
- combustible, low fire hazard;
- avoid contact with oxidizing materials (eg. Lead Nitrate, acids).

ACTION FOR FIRE

- use CO_2, dry chemical, foam or water spray (fog), although water may spread the fire;
- use fog streams to protect rescue team and trapped people;
- use water to cool surface fire exposed containers;
- divert the oil to an open area and let it burn off under control;
- if the fire is put out before all oil is consumed, beware of re-ignition;
- rubber tires are almost impossible to extinguish after involvement with a fire. Have vehicles with burning tires removed from the danger area.

RECOVERY

- after containment, recover as much oil as possible by pumping into drums;
- residual oil may be burned in-situ, upon approval;
- remaining unburned oil can be soaked up by sand, peat moss and snow when available, or by synthetic sorbents such as 3M Brand, Graboil or Conwed;
- if necessary, contaminated soil should be excavated;
- oil on a water surface should be recovered by skimmers and sorbent booms.

DISPOSAL

- incineration under controlled conditions, prior approval required;
- burial at an approved site.
- ship to licensed waste reclaiming facility

PROPERTIES

- chemical composition: mixture of hydrocarbons and conventional industrial oil additives; C20-C66
- generally viscous liquids, light to dark amber colours;
- not soluble, floats on water.

ENVIRONMENTAL CONCERNS

- moderately toxic to fish and other aquatic organisms;
- harmful to waterfowl;
- may create unsightly film on water and shorelines.

CONTAINERS

- transported and stored in steel drums or cubes (these are self-contained units with an 8 drum capacity).

SUPPLIER

- As per annual tendering.
- SEE MSDS, LOCATED IN THE SHOP, FOR ADDITIONAL INFORMATION

SPILL CONTINGENCY PLAN	SECTION: ACTION PLANS
Ulu Exploration Project	SUBJECT:ETHYLENE GLYCOL/ANTIFREEZE

In the event of an **ANTIFREEZE (GLYCOL)** spill or where there is reasonable likelihood of a spill occurring, the following action plan is to be initiated.

24 HOUR SPILL REPORT LINE (867) 920-8130 INITIAL SPILL RESPONSE

WATER RESOURCES INSPECTOR (867) 975-4298

- Notify the Project Manager or designate immediately via radio, phone or in person and initiate the response team. **Spill reported via 24 hour emergency spill line**, above;
- **STOP** the flow of Antifreeze at source if possible;
- ELIMINATE open flame ignition sources;
- CONTAIN flow of liquid by dyking, barricading or blocking flow by any means available;
- **PREVENT** antifreeze from entering any flowing streams.
- A detailed spill report shall be submitted as per Section 2.3

HAZARDS

- inhalation of mist may cause irritation of nose, throat and headache;
- moderately toxic by ingestion, can be fatal;
- avoid contact with strong oxidizing agents
- flammable, decomposition products include carbon dioxide and/or carbon monoxide.

ACTION FOR FIRE

- use alcohol type or all purpose foam for large fires; CO_2, dry chemical or water spray (fog) for small fires. Do not force solid streams into the burning liquid.

RECOVERY

- ethylene glycol antifreeze can be soaked up by peat moss or snow when available, or by synthetic sorbents such as Hazorb;
- small spills may be washed with copious amounts of water for dilution;
- access to spilled or recovered ethylene glycol by mammals should be prevented.

DISPOSAL

- only incinerate in a furnace under controlled conditions where approved by appropriate federal, provincial and local regulations;
- burial at an approved site.

PROPERTIES

- chemical composition: 96% ethylene glycol (CH_2OHCH_2OH)
- 4% water and rust inhibitors
- clear, syrupy liquid normally contains a dye for identification in water sources;
- 100% soluble in water;
- flammable.

ENVIRONMENTAL THREAT

- low to moderate toxicity for fish and other aquatic organisms;
- attractive smell and taste to some mammals, and toxic by ingestion.

CONTAINERS

- transported and stored in steel drums or cubes (which are a self-contained unit with an 8 drum capacity).

SUPPLIER

- DOW Chemical of Canada Ltd., Van Waters & Rogers Ltd.
- SEE MSDS, LOCATED IN THE SHOP, FOR ADDITIONAL INFORMATION

SPILL CONTINGENCY PLAN	SECTION: ACTION PLANS
Ulu Exploration Project	SUBJECT: AMMONIUM NITRATE/FUEL OIL; ANFO

In the event of a **AMMONIUM NITRATE/FUEL OIL** spill or where there is reasonable likelihood of a spill occurring, the following action plan is to be initiated.

24 HOUR SPILL REPORT LINE (867) 920-8130 INITIAL SPILL RESPONSE

WATER RESOURCES INSPECTOR (867) 975-4298

- Notify the Project Manager or designate immediately via radio, phone or in person and initiate the response team. **Spill reported via 24 hour emergency spill line**, above;
- **STOP** the spill of ANFO at the source if possible;
- evacuate all non-essential personnel from the area and ensure the health and safety of those remaining;
- **ELIMINATE** all possible sources of ignition;
- **PREVENT** ANFO from contacting water;
- if ANFO does contact water, **CONTAIN** solution to as small an area as possible. Consider dyking with sand or snow to minimize travel;
- **ISOLATE** area of spill preferably by roping off affected area.
- A detailed spill report shall be submitted as per Section 2.3

HAZARDS

- may explode under confinement or high temperatures and friction;
- avoid contact with strong oxidizers (ie: Lead Nitrate)
- flammable;
- combustion products are toxic and may include hydrocarbons, oxides of carbon and nitrogen;
- low toxicity.

ACTION FOR FIRE

- for fires involving large quantities of ANFO, evacuate and **Do Not Attempt** to fight fires;
- for fires involving small quantities of ANFO, use large amounts of water to extinguish, control runoff;
- ANFO may detonate in fire, under severe impact or confinement.

RECOVERY

- spills of ANFO on dry surfaces can simply be shovelled into containers;
- spills of ANFO on wet surfaces or exposed to rain should be shovelled into waterproof containers as soon as possible to minimize the quantity of ammonium nitrate being dissolved;
- ANFO, or a resulting ammonium nitrate solution, **must not be allowed** access to any flowing stream;
- sorbents such as peat moss, Conwed or Graboil should be used to recover any oil emanating from the ANFO spill; snow may be used during the winter months

under freezing conditions.

- soil heavily contaminated with ammonium nitrate should be excavated for incineration if the affected groundwater threatens to travel to an adjacent flowing stream.

DISPOSAL

- ANFO recovered from a spill may be used in the mine;
- ammonium nitrate solutions and soil containing ammonium nitrate should be disposed of within the mill tailings system or directly in the tailings pond;
- sorbents used to recover the oil may be incinerated under controlled conditions or buried at an approved site;
- ANFO can be disposed of by detonation or incineration under knowledgeable supervision.

PROPERTIES

- comprised of 94% prilled ammonium nitrate (NH_4NO_3) and 6% No.2 fuel oil, trade name: Amex II
- small porous pellets coated with oil, may be dyed with bright colours (yellow), odour of fuel oil;
- ammonium nitrate is Very Soluble in water; the oil is not soluble and will float;
- strong oxidizing agent;
- flammable.

ENVIRONMENTAL CONCERNS

- ammonium nitrate is moderately toxic to fish and other aquatic organisms at low concentrations. Toxicity increases with increased pH and temperature of the water.
- being very water soluble, the ammonium nitrate in the anfo can readily dissolve and enter the natural surface or ground water streams.

CONTAINERS

- ANFO is transported and stored in 25 kg polyethylene bags at the main explosives magazine.

SUPPLIER

- Explosives Limited (Calgary, Alberta)
- CIL
- SEE MSDS, LOCATED IN THE SHOP, FOR ADDITIONAL INFORMATION

APPENDIX I

CONTACT LISTING

24 Hour Emergency
Nursing Station
TBA (IFA Level 3).....……Ulu Tel: (604) 759-0604
Also available by walkie-talkie

Project Manager
David Stevenson……....Ulu Tel: (604) 759-0605
Ulu Fax: (604) 759-0601
Also available by walkie-talkie
Office: (807) 346-1668
Fax: (807) 345-0284

Building and Maintenance Supervisor……..…Ulu Tel: (604) 759-0602
Wayne Kirkham/Kirk Keller Also available by walkie-talkie

Mine Captain
TBA……...TBA
Also available by walkie-talkie

Underground Shift Supervisor
TBA……...TBA
Also available by walkie-talkie

Senior Geologist
TBA……..….(604) 759-0603
Also available by walkie-talkie

Senior Engineer
TBA……TBA
Also available by walkie-talkie

Mechanical Supervisor
TBA……..….TBA
Also available by walkie-talkie

Environmental Coordinator
John Cook…….(613) 477-1280

It shall be the responsibility of the Project Manager or his designate to notify the Company President.

Revised 02/06

TELEPHONE LISTING

GOVERNMENT AGENCIES	TELEPHONE	FACSIMILE
24 HOUR SPILL REPORT LINE **GNWT – Dept. of Renewable Resources**	**(867) 920-8130**	**(867) 873-6924**
DIAND Water Resources Inspector – Iqaluit	**(867) 975-4298**	**(867) 979-6445**
NUNAVUT WATER BOARD	**(867) 360-6338**	**(867) 360-6369**

GOVERNMENT OF NUNAVUT

Department of the Environment – Iqaluit	**(867) 975-5910**	
Department of the Environment – Kugluktuk	**(867) 982-3204**	

GOVERNMENT NWT – Department of Renewable Resources

Environmental Protection Division

Mr. Ken Hall; Manager Env. Prot.	**(867) 920-6476**	**(867) 873-0221**
Mr. Harvey Gaukel; Hazmat Specialist	**(867) 873-7654**	

Wildlife Management Division

Wildlife Biologist	**(867) 920-6190**	**(867) 873-0293**

GOVERNMENT OF CANADA

Indian and Northern Affairs Canada
Land Use and Water Use

Regulatory Approvals, Water Resources	**(867) 669-2650**	**(867) 669-2716**
Land Use; Reg. Manager, Land	**(867) 669-2763**	**(867) 669-2731**
NUNAVUT District Office; Iqaluit (Water)	**(867) 979-4407**	**(867) 979-6445**
Environment Canada **Environmental Protection Branch**	**(867) 975-4644**	
Environment Canada **Emergency Response and Enforcement** **24-hour pager**	**(867) 920-5131**	
DFO **Fisheries Habitat Biologist (Iqaluit)**	**(867) 979-8007**	**(867) 979-8039**

OTHERS

Kitikmeot Inuit Association, Kugluktuk	**(867) 982-3310**	**(867) 982-3311**
Kugluktuk Hunters and Trapper Assoc.	**(867) 982-4908**	**(867) 982-4047**

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ADDITIONAL COMMUNICATIONS

High Lake

High Lake Camp can be contacted at:
Tel: (604) 759-0473

EMERGENCY CONTACTS

Dupont 905-821-5660

EMERGENCY RESPONSE CENTRE (24 HOUR)..... 1-800-387-2122

Chemtrec 1-800-424-9300

Conweb & Oil Snare Canadian Industries Ltd 780-465-0221

Alberta Oil Spill Consultants (Booms, sorbents, skimmers) 780-451-0585

TABLE 1

PETROLEUM AND CHEMICAL PRODUCTS INVENTORY
MAJOR COMPONENTS

Fuel Type	Units	No. of containers	Capacity
Diesel * P-40 P-50	 200,000 liters 50,000 liters	13	2 – 1,325,000 liter (350,000 gal) tanks 11 – 53,000 liter (14,000 gal) tanks
Jet-B	11,275 liters	55	205 liters (45 gal)
Propane	298.4 kg	8	37.3 kg (100 lbs)

* Dip test performed October 2005

TABLE 2

HEAVY EQUIPMENT INVENTORY
WOLFDEN RESOURCES INC.
ULU EXPLORATION PROJECT, NUNAVUT

Type & Number	Size & Ground Pressure	Proposed Use
2 water trucks	5 ton chassis Empty 3.07 PSI Loaded 13.25 PSI	Watering pads and roads
4 pick-up trucks	Ford F350 Empty 17.69 PSI Loaded 35.38 PSI	Supervision, moving people & moving light freight
1 Tractor & low boy		Moving equipment & freight
1 Picker truck	Five ton	Installing culverts & handling light freight
1 Bulldozers	1-Cat D8N 14.6 PSI	Piling, leveling sand & sand loading ore later
3 Rock trucks	3-Cat 769C Empty-124 PSI Loaded-356 PSI	Hauling sand & later ore
2 Graders	1-Cat 14G 26.11 PSI 1-Cat 120G	Grading roads, pads, airstrip and later winter road
1 Loader/Forklift	Cat 966D 25.18 PSI	Freight handling & loading trucks
1 Commander	Loaded 9.0 PSI	Moving freight
1 Flat bed	Ford 3 ton	Moving freight
1 Bus	48 passenger	Moving passengers & freight
1 Lube & fuel truck	5 ton chassis Empty 3.07 PSI Loaded 13.25 PSI	Fueling rolling stock
1 Backhoe	Cat 311	Miscellaneous digging
1 Rubber tired dozer	Cat 824C	Pushing sand and waste
1 Road packer	Cat	Packing roads and pads
2 Loaders	Cat 988D Cat 930	Moving & loading sand & waste
1 Forklift	JCB	Moving freight
1 Tractor	Kubota	Moving people and freight
3 Jumbo drills	Atlas Copco twin-boom Tamrock twin-boom Tamrock single-boom	Drilling underground
1 Scissor lift	Getman	High work underground
4 Scooptrams	1 Wagner 3.5 cu. yd. 1 Wagner 2.0 cu. yd. 1 Elphinstone 7.5 cu. yd. 1 Wagner 7.5 cu. yd.	Mucking underground
2 Underground trucks	1 Wagner 44 ton 1 JDT 26 ton	Moving muck from underground

TABLE 3

SPILL CONTAINMENT/RECOVERY MATERIALS

Spill containment/recovery materials at the Ulu Project are available at two locations; the sea container located north of the core shack at the mine site and the “Emergency Spill Response Trailer” at Camp 3.

The sea container has one Pigmalion Environmental Services mobile responder kit that has an absorption capacity of 190 liters. This kit includes:

6	blue socks, (3 in x 4 ft)
6	blue socks, (3 in x 12 ft)
50	pads, (17 in x 19 in)
10	pillows, small (9 in x 9 in)
3	disposal bags with ties
1	cardboard warning/spill sign
2	safety goggles, pair
2	protective gloves, pair
1	literature package (MSDS, Instructions)

The “Emergency Spill Response Trailer” contains the following inventory and has an absorption capacity in excess of 200 liters:

1	PES mobile responder kit (as above)
3	Shovels;
2	Roll Poly; 4mL, 500 ft.;
1	Crate of floordry; (50) 20kg bags;
4	Booms, 11 ft.;
1	Pump; 2" Honda;
1	Safety approved 2 gallon gas container;
2	20 ft. 2" hoses;
10	45 gallon drums (no lids) for collection of contaminated materials (several lidded 45 gallon containers are available on site if contaminated liquid is required to be transferred from the non-lidded containers);
1	100 ft. rope;
2	Fire extinguishers;
1	4 lb sledge;
1	Box, dust masks

In addition to the above, Wolfden’s High Lake camp maintains a supply of the smaller items such as floordry, absorbent pads, shovels, dust masks and are available if required.

REFERENCES

- Contingency Plan, Ulu Exploration Project, Nunavut, Echo Bay Mines Ltd., October 2001

- Guidelines For Spill Contingency Planning Northwest Territories Water Board, 1987

- Contingency Planning And Spill Reporting In The NWT A Guide To The New Regulations; unauthorized, GNWT

- Guidelines For The Preparation of Hazardous Material Spill Contingency Plans; Environmental Protection, W&N Region, Report No. CP(EP) ENR90-91-4 March 1990

- Oil And Toxic Material Spill Contingency Plan Echo Bay Mines Ltd., 1984, updated annually

- Contingency Plan; Echo Bay Mines Ltd. December, 2000; Revised - Awaiting approval

- Polaris Operations Contingency Plan; Cominco Ltd, Polaris , N.W.T.; June 1994

- Guidelines For Preparing Spill Contingency Plans For Winter Road Operations In The Northwest Territories; E. Paquin, GNWT; D. Stendahl, NAP/INAC; D. Tilden, EPS/DOE; October 1983

- The Environmental Protection Act of The Northwest Territories; Spill Contingency Planning and Reporting Regulations, Registered July 22, 1993 S BHP Ekati™ Diamond Mine Spill and General Contingency Plan, 1999.