Appendix H – Spill Contingency Plan Ver3

MEADOWBANK GOLD PROJECT

Spill Contingency Plan

Meadowbank Mine Site
All Weather Private Access Road (AWPAR)
Baker Lake Facilities

In Accordance with Water License 2AM-MEA0815

Prepared by:
Agnico-Eagle Mines Limited – Meadowbank Division

Version 3
July 2012

EXECUTIVE SUMMARY

This document presents the Spill Contingency Plan for Agnico-Eagle Mines Limited (AEM) Meadowbank Mine Site, All Weather Private Access Road (AWPAR) and Baker Lake Facilities, which is a requirement of the Meadowbank Gold Project Type A Water License No. 2AM-MEA0815 issued on June 09, 2008. 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 mine and is applicable to all AEM employees and any contractors associated with the project located at latitude 65°01'52"N 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 and the AWPAR.

IMPLEMENTATION SCHEDULE

As required by Water License 2AM-MEA0815, Part B, Item 16, the proposed implementation schedule for this Plan is effective immediately (December 2011) subject to any modification proposed by the NWB as a result of the review and approval process.

DISTRIBUTION LIST

AEM - Environmental Superintendent

AEM – General Mine Manager

AEM – Engineering Superintendent

AEM – Health and Safety Superintendent

AEM – Geology Superintendent

AEM – Mill Superintendent

AEM – Maintenance Superintendent

AEM – Mine Superintendent

AEM – Project Construction Manager

AEM – Site Services Superintendent

AEM – 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 AWPAR map and Spill KIT Location Map
3	12/07/25			Update of the hazardous materials stored on site

Table 1 - Document Control

Version 2:

Prepared By: 

Jeffrey Pratt
Environment Coordinator

Approved By: 

Kevin Buck
Environmental Superintendent

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SECTION 1 • INTRODUCTION

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 spills from potentially hazardous materials. These hazardous materials include:

- Hydrocarbon liquids such as diesel fuel, gasoline, hydraulic oil;
- Soluble solids such as ammonium nitrate prill;
- Soluble liquids, such as glycols, acids, and paints;
- Corrosive liquids such as sulphuric acid and 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.
- 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.*
- Northwest Territories Resources Wildlife and Economic Development Environmental Protection Service. 1988. *Spill Contingency Planning and Reporting Regulations.*

SECTION 2 • PROJECT DESCRIPTION

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, and the 110 kilometer All Weather Private Access Road (AWPAR) from Baker Lake to the Meadowbank Mine Site **(Figure 2)**. The Meadowbank mine site consists of the process plant, sewage treatment plant, water intake, accommodation buildings, power plant, tank farm, warehouse, truck shop, emulsion plant, and the open pit **(Figure 2.2**). The fuel farm at the Meadowbank mine site consists of a single 5.6 million liter tank. The Baker Lake Marshalling Area consists of a laydown transfer area to temporarily store materials prior to the delivery to the Meadowbank mine site. A fuel tank farm is located at Baker Lake marshalling facility which consists of six, 10 million liter tanks and fuel is delivered in bulk by sealift to the fuel farm **(Figure 2.3)**. From there, fuel is hauled to the Meadowbank mine site by tanker trucks on the AWPAR. 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 pertinent authorizations in July 2008 with Operations commencing in January 2010.

2.1 PREVENTION AND INSPECTIONS

The first step in spill response is to take actions to prevent the spill from occurring. Transport, transfer and storage of materials are performed by trained personnel using secondary containment, with well-maintained equipment and containers. Refuelling stations in Baker Lake and at the mine site are equipped with a lined area to contain any minor leaks or spills while refuelling. 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.

AEM supports the following general principles for spill prevention:

- Provide up to date and accessible Material Safety Data Sheets (MSDS) for all hazardous materials
- Daily inspections fuel/chemical storage areas for leaks (including flex connectors and plumbing) and platform shifting
- Daily 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,
- 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
- Provide adequate spill response materials at storage areas (details of spill prevention equipment are outlined in Section 8).

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 impact. The emergency response team must be notified immediately of a major spill or emergency. A tanker truck overturn on the AWPAR is considered a major spill for the purpose of this plan and Section 7 provides response procedures for an incident of this type.

A minor spill is defined as any hazardous chemical spill that does not involve highly toxic, highly reactive, or explosive chemicals in a situation that is not life threatening. Furthermore, this type of spill presents a manageable physical or health hazard to personnel who, when wearing proper personal protective equipment, will not be exposed to any chemical at a level that exceeds any recognized action level or permissible exposure limit. Minor or simple spills are still to be reported to the Environment Department but they are not expected to involve emergency responders.

3.2 MATERIALS AND REPORTABLE SPILLS ON SITE

As a precaution, if there is any doubt as to whether the quantity spilled meets the minimum reportable thresholds listed in **Table 2**, the spill incident will be reported. Furthermore, AEM will maintain a detailed log of all spills of hazardous materials, including non-reportable spills. As part of AEM's overall environmental management system and in the spirit of a continuous improvement of environmental performance, procedures will be implemented to encourage all employees to communicate non-reportable spill incidents.

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 2 - 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
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

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

SECTION 4 • RESPONSE ORGANIZATION

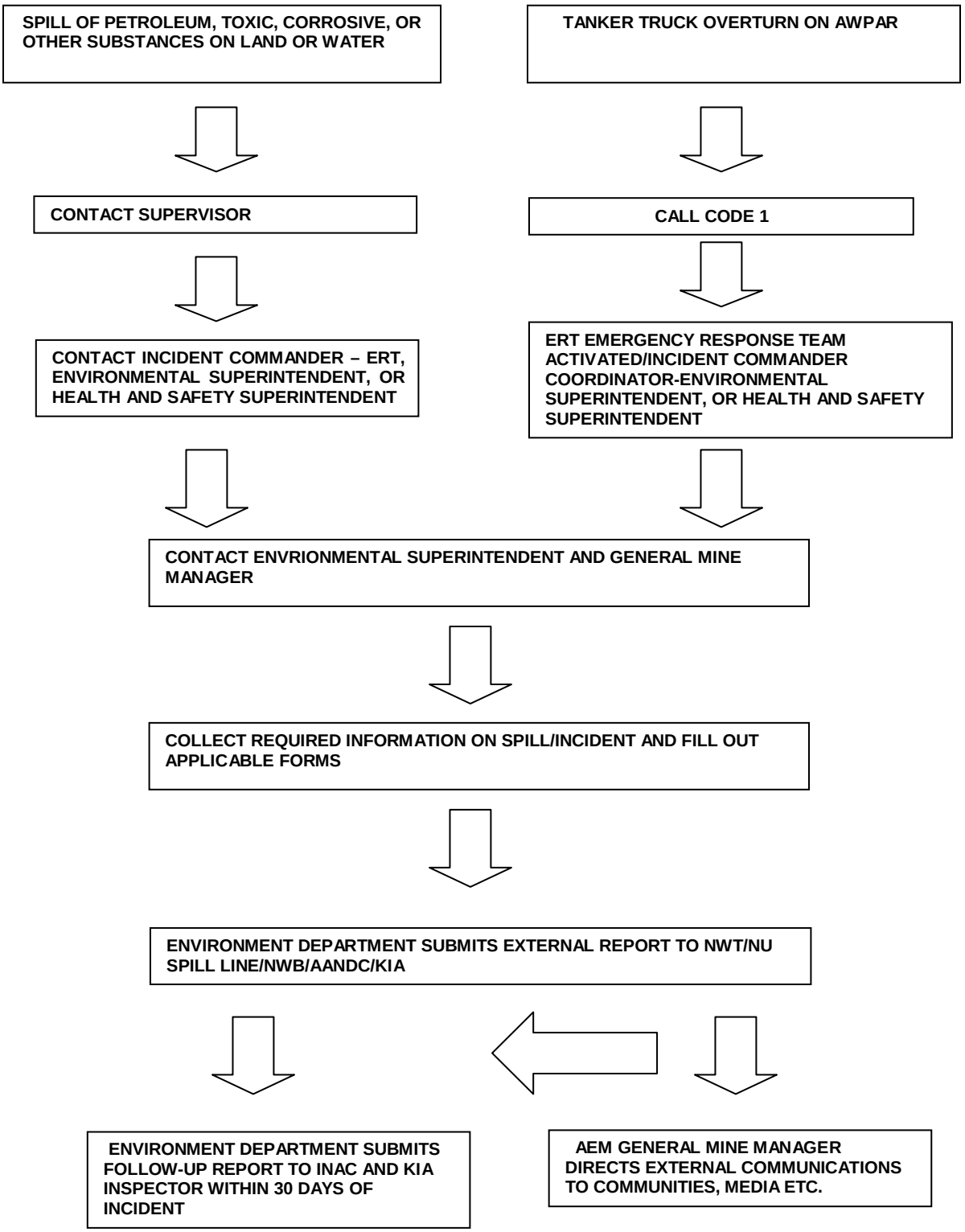
This section addresses the response organization and the responsibilities of each individual during response to an incident.

Figure 4.1 illustrates AEM's Spill Reporting Procedure in the event of a 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 (in the case tanker truck overturn on AWPAR) or reports to his/her immediate supervisor (in the case of 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 environment department for a minor spill. If a Code 1 is initiated, the incident commander will respond to any tanker truck overturns along AWPAR in conjunction with the ERT. Major responsibilities such as initial coordination, spill clean-up and mobilizing the Emergency Response Team (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 VP, 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 Aboriginal Affairs and Northern Development Canada. Incidents' involving tanker truck overturns that require media communications will be the responsibility of AEM General Mine Manager or alternate.

Figure 1: Spill/Incident Reporting Procedure



4.1 FIRST RESPONDER

The person who has caused a spill or is 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.
- 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.
- Gathers facts about the spill.
- 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.

- 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

AEM has an Emergency Response Team (ERT) that is trained and responsible for controlling the large spills as well as spills from tanker truck overturns along AWPAR, and assisting with medical and other emergencies that may occur at the camp. These 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.
- Ensure that all spill response personnel receive adequate training to fulfil their responsibilities as part of the ERT.

4.6 ENIVRONMENTAL 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 A for NWT/NU Spill Report Form) to regulators and AEM 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.
- 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 facility malfunction causing a spill during the Operations phase. The responsibilities of the General Mine Manager/designate are as follows:

- Liaise with AEM personnel resources and keep them informed of cleanup activities.
- 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.
- 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.
- 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 4.2 for all AEM personnel involved in spill recovery and subsequent reporting. Table 4.3 provides contact information for AEM contractors present at the mine site. Important external contacts such as regulatory agencies and health organizations are listed in Table 4.4. Table 4.5 provides contact information for external contractors should incident warrant assistance from outside sources.

Table 3 - Internal Contacts

Title	Name	Telephone No.
Vice President, Environment and Sustainable Development	Louise Grondin	416-847-8656 Cell:819-724-2020
General Mine Manager	Dominique Girard	867.793.4610 ext.6910 Cell: 819.856.7863
Health and Safety Superintendent or Assistant Superintendent	Len Kutchaw Or Norm Ladouceur	867.793.4610 ext.6720
Emergency Response Team	Len Kutchaw/Andre Rouleau	867.793.4610 ext.6809
Environmental Superintendent	Kevin Buck	867.793.4610 ext. 6838 Cell: 819.856.1956
Environmental Coordinator Or Environmental Department	Jeffrey Pratt Or Environmental Technicians	867.793.4610 ext. 6728 Or 867.793.4610 ext. 6747
Incident Commander	Jeffrey Pratt/ Kevin Buck	867-793-4610 ext. 6728
On site Medics	On-site Nurses	867.793.4610 ext.6734
Site Security	On-site Security	867.793.4610 ext.6748

Table 4 - Contractor Contacts

Title	Telephone No.
Nolinor Aviation Services	Protocol Agent 867.793.4610 ext. 6808
First Air	867.446.1744
Calm Air	867.793.2873
Dyno Nobel Explosives Ltd.	867.793.4610 ext.6804
Woodward Group of Companies (Shipping)	709.896.2421 or 709.896.6569

Table 5 - 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	867-979-8637	867-979-8501
Kivalliq Inuit Association	867-645-5725	867-645-2348
Nunavut Water Board	867-360-6338	867-360-6369
AANDC Inspector	867-975-4548	867-979-6445
Environment Canada, Enforcement Branch	867-975-4644	867-975-4594
Department of Fisheries and Ocean (DFO) – Nunavut Regional Office	867-979-8000	867-979-8039
Manager, Environmental Protection, Government of Nunavut	867-975-7748	867-975-5981
Kivalliq Health Services – Baker Lake (Health Centre)	867-793-2816	867-793-2813
Baker Lake Hamlet Office	867-793-2874	
Baker Lake Fire Emergency	867-793-2900	N/A

Table 6 - External Spill Response Contractor Phone Numbers

Contractor	Telephone No.	Area of expertise
Local		
Baker Lake Contracting & Supplies	867.793.2831	General Contracting and repairs
Peter's Expediting	867.793.2703	Transportation
NWT Ltd (Arctic Fuel)	867.793.2311	Fuel Transportation

SECTION 5 • ACTION PLAN

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.

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.
- Contact the Incident Commander, identify the location and request assistance as required. Incident Commander will mobilize the Emergency Response Team if required.

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 Respond Safely

- 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 vapours might ignite – allow them to evaporate.
- 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

- Obtain all necessary information to complete the external reportable spill. External reportable spills must be reported to the NWT-NU 24 Hour Spill Line/AANDC/Kivalliq Inuit Association (KIA) and the Nunavut Water Board by AEM Environment Staff.
- A detailed spill report, no later than 30 days after reporting the spill, will be submitted to the AANDC Water License Inspector and the KIA Land's Inspector by AEM Environment Staff. 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 hazardous material lost. The MSDS 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 the general procedures detailed in the following section. The main spill control techniques involve the use of two types of barriers: dykes 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 fuel and will also serve as containment to allow recovery of the fuel.

Depending on the volume spilled, the site of the spill as well as available material, a dyke may be built with soil, booms, lumber, snow, etc. A plastic liner should be placed at the foot of and over the dykes

to protect the underlying soil or other material and to facilitate recovery of the fuel. Construct dykes 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 fuel 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 large quantities of absorbent materials to recover important volumes of fuel 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. 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 the general procedures provided in the following section. Various containment, diversion and recovery techniques are discussed in the following sections. 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
- seasonal considerations (open-water, freeze-up, break-up, frozen)

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, a 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 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 and contaminated water is placed within drums for shipment to an approved disposal facility. All contaminated soil is placed in a temporary site to be treated later on.

SECTION 6 • HAZARDOUS MATERIALS STORED ON SITE

A variety of petroleum products and other hazardous materials will be used as part of the mining operations. Large quantities of petroleum products will be stored at various sites. Explosives will also be stored on site. 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 B to G provide General Response Procedures for Spilled Chemical Substances.

Table 7 identifies the predominant hazardous materials transported, stored and generated at the site.

Table 7- 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 c-cans	Inventory Lay down
Activated Carbon	350 MT	10 mt per c-can	Inventory Lay down and Process Plant lay down
Ammonium Nitrate	10 000 MT	20 mt per c-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 c-can	Inventory Lay down, garage
Trojan Boosters (Blasting Systems)	34 000 KG	15 mt per c-cans	Emulsion plant
Borax, Anhydrous	7 500KG	3 375KG per c-cans	Inventory Lay down and Process Plant lay down
Calcium Chloride	600 000L	10 000L per c-cans	Inventory Lay down
Calcium Hydroxide	NOT IN INVENTORY		Inventory Lay down
Calcium Oxide	NOT IN INVENTORY		
Calcium Peroxide	NOT IN INVENTORY		
Carbon Dioxide	10 cylinders	10 cylinders per c-can	
Copper Sulphate	500 MT	20 MT Per c-can	Inventory Lay down and Process Plant lay down
Diesel Fuel	5.5 million Liters	40 000L per tanker	Tank farm
Dyno Split (Detagel)	135 000 KG	15 mt per c-cans	Emulsion plant

Nonel EZTL	1 400 KG	15 mt per c-cans	Emulsion plant
Nonel MS	1 800 KG	15 mt per c-cans	Emulsion plant
Ethylene Glycol	60 000L	10 000L per c-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 B Fuel	20 000L	11 000L Tanker	Tank, tarmac
Lead Acid Batteries	500L	500L per c-can	Warehouse
Magnafloc 10 (Flocculant)	300 MT	15 MT per c-can	Inventory Lay down
Nitric Acid	120 000L	8 000L per c-can	Inventory Lay down
Portland Cement	3 500 mt	20 mt per c-can	Dyke and
Sodium Cyanide	1 300 MT	19 mt per c-can	Inventory Lay down and Process Plant lay
Sodium Hydroxide	10 KG	10 kg in c-can	Warehouse
Sodium Nitrate	10.2 MT	5.1 MT per c -can	Inventory Lay down
Sulphuric Acid			
Sulfur	4 600MT	20 MT per c-can	Inventory Lay down
Unleaded Gasoline	50 000L	40 000L tanker	Tank farm
Varsol	4 000L	2000 L per c-can	Inventory Lay down

SECTION 7 • POTENTIAL SPILL ANALYSIS

In order to prepare for emergency spill response, potential spill analysis was conducted and on various worst case scenarios. The exercise serves to identify potential risk areas, as well as to determine the fate of spilled products and their environmental effects. One potential scenario was identified for the Meadowbank Gold Project:

- Road between Baker Lake and the Meadowbank Mine Site – spill contents of a tanker truck into water body.

Scenario #1: Road Accident Tanker Truck Spill on AWPAR

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

Potential causes: Vehicle accident, human error

Hazardous products spilled: Diesel 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 AWPAR 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 spill, seal the leak where 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 the fuel trucks.

SECTION 8 • RESPONSE EQUIPMENT

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 AEM, that will be used for spill contingency include:

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

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 transportation that will be used under an emergency situation are:

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

Communication equipment on site 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. 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 site (heavy equipment) contains an emergency spill kit.

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

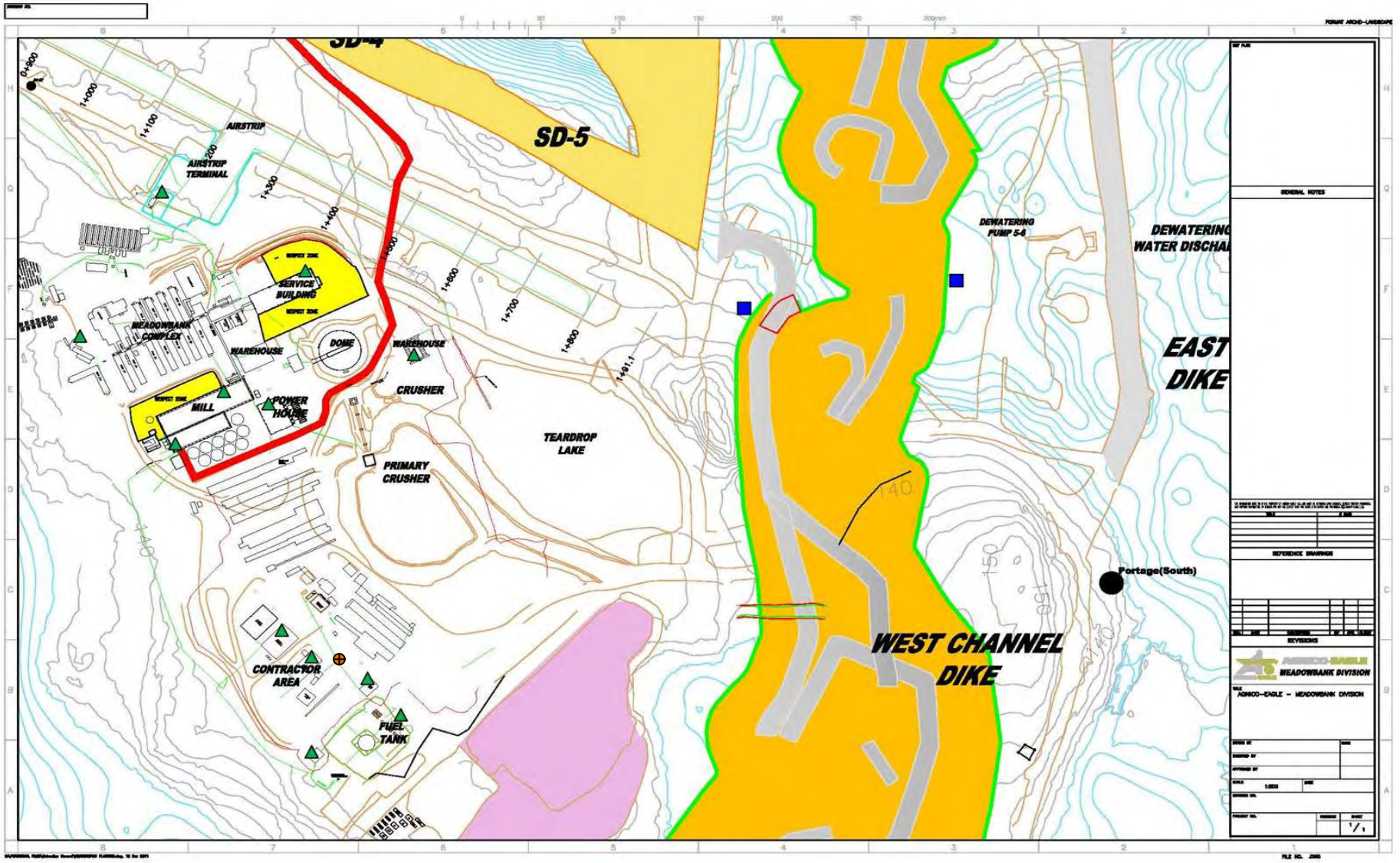
- Pump Elastec
- Pump accessories
- Vaccum ends
- 45 gallons top
- Tubing 2 inches diameter
- Tubing 3 or 4 inches diameter?
- Diesel Fuel jerry can (place on a miniberm)
- Spill kit accessory (red box)
- Drums opener
- Wescot (to open empty drum screw)
- Empty drums
- 2 drums berm
- 4 drums berm 4x8
- 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 AWPR there are 9 environmental emergency sea cans. These sea cans are strategically placed along the road at water crossings. 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 absorbant
- 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 6.



Spill Kits Large Spill Kits for Mine OPs Emergency Response Trailer

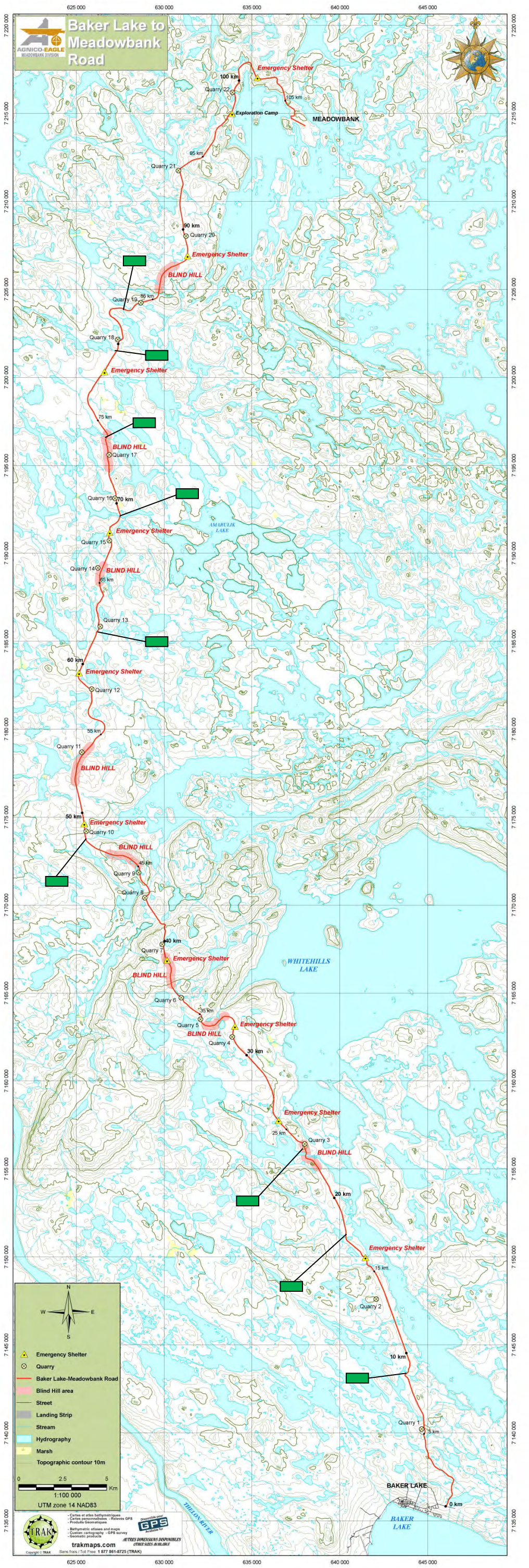


Figure 3 - Map of AWAPR Including Locations of Environmental Emergency Seacans

Environmental Emergency Seacans

SECTION 9 • TRAINING & EMERGENCY SPILL / EXERCISE

9.1 TRAINING

9.1.1 On-site Personnel

A designated ERT consisting of on-site personnel has been established. AEM will ensure that the ERT is trained and present at all times. All members of the team 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.
- The likely causes and possible effects of spills.

Every employee at AEM 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 clothing.

The Environmental Department regularly attends tool-box sessions to provide information on spill response and reporting procedures.

SECTION 10 • LIST OF ACRONYMS

ANFO Ammonium Nitrate Fuel Oil
AWPR All Weather Private 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
AEM Agnico-Eagle Mines Limited
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
TDG Transportation of Dangerous Goods
WHMIS Workplace Hazardous Materials

Appendix A

NWT/NU Spill Report Form

Canada

NT-NU SPILL REPORT

OIL, GASWNE, GHEI.!ICM.S AND OIHEIR HAZARDOUS MATERI.US

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IR.: (867)9211-8130
FAX: (867) 873-6!124
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Appendix B

General Response Procedures for Spilled Chemical Substances

Explosives

B.1 Ammonium Nitrate
B.2 Ammonium Nitrate Fuel Oil (ANFO)

B.1 Ammonium Nitrate

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

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).
- 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. AEM commits to review and test, and if necessary, modify and update thus spill response procedure on an annual basis.

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

1) Isolate and evacuate the spill area.

2) Contact the 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 TyvekTM coveralls **as recommended by the MSDS**

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.

B.2 Ammonium Nitrate Fuel Oil (ANFO)

Currently no ANFO is stored at the site. ANFO is fabricated as required, with ammonium nitrate and fuel oil. In the event that ANFO would be stored at the camp, AEM 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.
- 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. AEM commits to review and test, and if necessary, modify and update thus 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 TyvekTM 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 C

General Response Procedures for Spilled Chemical Substances

C.1 Compressed Gases

C.1 Compressed Gases

AEM 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. AEM commits to review and test, and if necessary, modify and update thus 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.

7) Isolate area until gas has dispersed. On-Scene Coordinator to verify safe conditions.

Appendix D

General Response Procedures for Spilled Chemical Substances

D.1 Flammable and Combustible Liquids

D.1 Flammable and Combustible Liquids

AEM 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.

AEM commits to review and test, and if necessary, modify and update thus 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 TyvekTM coveralls.

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 (if present) 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 E

General Response Procedures for Spilled Chemical Substances

Oxidizing Substances

E.1 Liquids
E.2 Solids

E.1 Liquids

AEM 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.

AEM commits to review and test, and if necessary, modify and update thus 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 TyvekTM coveralls **as recommended by the MSDS.**

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 though 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.

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.

E.2 Solids

AEM 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.

AEM commits to review and test, and if necessary, modify and update thus 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.

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.

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 F

General Response Procedures for Spilled Chemical Substances

Poisonous and Toxic Substances

F.1 Sodium Cyanide

F.1 Sodium Cyanide

AEM 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.
AEM commits to review and test, and if necessary, modify and update thus 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:
e. Gloves **as recommended by the MSDS or glove manufacturer.**
f. Safety glasses or goggles.
g. Lab coat.
h. Half mask air-purifying respirator **as recommended by the MSDS or respirator manufacturer**.

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

4) Ventilate area of spill or leak.

5) Avoid exposure to acids, water or weak alkalies 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.

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.

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 G

General Response Procedures for Spilled Chemical Substances

Corrosive Substances

G.1 Acids, Liquids
G.2 Acids, Solids
G.3 Bases/Alkali, Liquids
G.4 Bases/Alkali, Solids

G.1 Acids, Liquids

AEM 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. AEM commits to review and test, and if necessary, modify and update thus 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 TyvekTM coveralls.

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.

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.

G.2 Acids, Solids

AEM 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.

AEM commits to review and test, and if necessary, modify and update thus 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.

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.

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.

G.3 Bases/Alkali, Liquids

AEM 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.

AEM commits to review and test, and if necessary, modify and update thus 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 TyvekTM coveralls.

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 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.

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.

G.4 Bases/Alkali, Solids

AEM 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.

AEM commits to review and test, and if necessary, modify and update thus 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.

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.

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

Woodward Group of Company Spill Contingency Plans

SCHEDULE E

PRODUCT DISCHARGE AND DISTRIBUTION PROCEDURES

Advance Preparation

At least two months prior to delivery confirm with the customer the following:

- ✓ Determine the time that the ship is expected to arrive.
- ✓ Arrange for berthing availability.
- ✓ Verify space available in storage tanks.
- ✓ Ensure preventative maintenance checks are conducted and any deficiencies or problems identified are corrected.
- ✓ Ensure any major maintenance work, that may in some way inhibit normal operations during transfer of product, is completed.

Before Discharge from Tanker Vessel

Prior to receiving product from tanker, a Woodward's Oil representative will ensure the following is conducted:

- ✓ A safety meeting is held to review and discuss local safety regulations and operating procedures, facilities contingency plan, ship emergency procedures, location of fire alarms, closing down of operations, closing of valves and disconnection of hoses or metal arms.
- ✓ The deployment and checking of all safety equipment, such as portable fire extinguishers, portable fire pumps, hoses, absorbent booms and absorbent pads to ensure that they are ready for use.
- ✓ Portable communications equipment is agreed upon by vessel, berth and tank field personnel, and equipment is tested.
- ✓ Storage tanks are properly prepared prior to measuring so that if water is found to be present, the water is removed, if possible, transfer to other tanks have been made, and if tank can be isolated during discharge, close all suction valves on tanks to be gauged.

- ✓ Check on pipeline is made to determine if pipeline is full or not. If pipeline is empty or partially full then vent and fill line with appropriate product prior to measuring the tanks, open all lever check valves, and patrol the line to detect leakage, physical damage, and in line failure. When the line has been filled, place the open level check valves in the normal position for receiving cargo and close the marine line valve of the storage tanks.

- ✓ All shore tanks are gauged and a record is kept of the number of liters on-hand. For non-isolated tanks suspend all transfer activity prior to gauging. Ensure that suction valves on tanks to be gauged are in the closed position.

- ✓ Readings are recorded from dispenser units.

- ✓ Quality Control procedures for all shore tanks are conducted.

- ✓ Calculations of quantities of products to be received must be re-checked and verified. A cut-off point for each tank to receive products must be determined and agreed upon by both shore and ship personnel.

- ✓ A review and an evaluation of the results of the Quality Control checks is completed, and if all tests are verified as passing then discharge may commence.

During Cargo Discharge

Ship and shore personnel are jointly responsible for controlling cargo discharge and both must adhere to the following:

- ✓ Since discharging cargo from ship to shore tanks is a remote control operation it requires good communication to coordinate the work of ship and shore personnel. The methods of communication used during pumping operations shall be portable radios, when a fixed system is not available or a flag and whistle system, when telephone/portable radios are not available. Communications must be maintained at all times throughout discharging operations to ensure immediate response to emergency situations to reduce pumping rates as cut-off points are neared.

- ✓ Before starting to pump all connections must be checked to ensure that they are properly made. Shore, line and ship manifold valves must have settings checked to ensure that they are in correct position.

Bonded drip pans must be placed under ship and shore connections to catch minor leaks.

- ✓ Review method of communication and pumping schedule to ensure that both are clearly understood by ship and shore personnel.

- ✓ Periodic checks must be made on all connections throughout pumping operations to ensure that no leaks have occurred.

- ✓ Shore personnel must ensure sufficient notice is supplied to ship personnel to alert them about switching shore tanks, discontinuing or altering cargo discharge or topping shore tanks.

- ✓ The most vulnerable part of the system is the ship to shore connection. Throughout the pumping operations, ensure that no abrupt changes occur in the flow rate. The main cause of surge pressure in pipelines is the valve closing quickly against the flow of product, either partially or completely. When shore tanks are switched, open the valve to the tank receiving the product at the proper time before closing the valve on the tank which had been receiving product.

- ✓ Discontinue discharging if: an electrical storm occurs; fire breaks out; leakage exists and cannot be stopped; the product spills, because of system failure or tank overfill; conditions develop that jeopardize the mooring hold of the ship; all product required has been transferred.

- ✓ Once pumping has stopped the discharge hose will be pigged to push through any product left in the hose and then the sea hose will be disconnected from the shore manifold and retrieved.

Completing Cargo Discharge

After the cargo has been discharged ship and shore personnel should:

- ✓ Close and lock all valves in the system from berth to tankage.

- ✓ Measure and record all compartments of the ship containing product for ullage, water, and average temperature. Calculate amount of product transferred from ship to shore tanks.

- ✓ Gauge all shore tanks into which the ship has discharged product, thus determining the amount of product received. Be sure to allow a minimum settling time of thirty minutes prior to gauging.

✓ Take readings of all dispenser meters if product was dispensed during the discharge operation.

✓ Determine from measurements taken actual quantity of product received.

✓ Perform Quality Control checks on all shore tanks.

✓ Prepare report on the re-supply operation and submit to AEM.

SHIPBOARD OIL POLLUTION EMERGENCY PLAN

for

MT DORSCH

6720Gross Tons Register of St. John's, NL

PREPARED BY: ***Poseidon Marine Consultants Ltd.***
391 Stavanger Drive
St. John's NL A1A 5G1
Telephone: (709) 739-4321
Fax: (709) 739-4421

PREPARED FOR: ***Coastal Shipping Ltd.***
The Fortis Bldg.
139 Water St.
St. John's, NL
A1C 1B2

Issued: June 2005
Job Number: 05-037

Change Number

Examined under the provisions of Annex 1 of MARPOL 73/78 and the Canadian Oil Pollution Prevention Regulations (SOR/93-3) and found satisfactory.

Clifford Harvey/PPO July 8/06 Date

TRANSPORTS CANADA TRANSPORT CANADA MARINE SAFETY SÉCURITÉ MARITIME CANADA St. John's, NL

Change Number

Official Stamp Examined by Date

Change Number

Official Stamp Examined by Date

RECORD OF CHANGES

Amendment Number	Section and Page Affected	Date Entered	Remarks	Name and Position of Person Making Entry

RECORD OF OIL POLLUTION EMERGENCY DRILLS

DATE	TYPE OF OIL POLLUTION DRILL	LOCATION	REMARKS MASTER'S SIGNATURE

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SHIP'S PARTICULARS

PRINCIPAL PARTICULARS

Vessel Name:	Dorsch
Flag / Port of Registry:	Canada / St John's, NL
GL Number:	16648
IMO Number:	8007195
Gross Registered Tonnage:	6720 (ITC69)
Net Registered Tonnage:	3548 (ITC69)
Length, Overall:	130 72 m
Length, B.P.:	122 0 m
Breadth, Max. at Deck:	18.5 m
Depth to Main Deck:	10.6 m
Design Draft (Summer):	7.2 m
Built:	Berner Schiffswerft GmbH & Co. KG
Year of Build:	1980
Complement:	18
Propulsion Power:	Krupp Mak 8 MU 552 AK 4410kW @ 480RPM

CAPACITIES

Fresh Water	Approx. 118m^3
Fuel Oil (MDO)	Approx. 171m^3
Fuel Oil (HFO)	Approx. 452m^3
Ballast Water	Approx 2459m^3
Cargo Hold (Incl. Slop Tanks)	Approx. 12153m^3

INTRODUCTION

1. This Plan is written in accordance with the Canadian Oil Pollution Prevention Regulations and also in accordance with the requirements of regulation 26 of annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 thereto.

2. The purpose of the Plan is to provide guidance to on board operating personnel the vessel with respect to the steps to be taken when a pollution incident has or is likely to occur

3. The Plan contains all information and operational instructions required by the guidelines. The appendices contain names, telephone, telex numbers, etc. of all contacts referenced in the Plan, as well as other reference material

4. This Plan has been examined by the Canadian Board of Steamship Inspection, (herein after referred to as "the Board") and, except as provided below, no alteration or revision shall be made to any part of it without prior approval of the Board.

5. Changes to Sections 6, 7, 8, and the appendices will not be required to be approved by the Board. The appendices should be maintained up to date by the Owners, Operators, and Managers.

6. For the purposes of this Plan, the Master is taken to be that person who is a member of the vessel's operational personnel and to which is given senior responsibility for the vessel and any circumstances pertaining thereto.

7. Before entering a port of call, the Master should be aware of local emergency response procedures and organizations and have up to date contact information readily available.

SECTION 1 • Preamble

1.1 PURPOSE AND INTENT OF THIS PLAN

This Shipboard Oil Pollution Emergency Plan is intended to assist the vessel's officers, crew and management personnel in dealing with an unexpected discharge of oil Its primary purpose is to set in motion the necessary actions to stop or minimize the discharge and to mitigate its effects.

1.2 SUPPORT BY VESSEL'S MANAGEMENT

In accordance with the plans and policies of the vessel's management organization, management personnel will support the vessel's crew with additional resources, i e. personnel and materials, as the situation warrants.

1.3 PERSONNEL TRAINING AND EXERCISES

1 ***It is the responsibility of the Vessel's Management to ensure that, through training and exercises, all officers and crew are capable of confidently and safely carrying out their assigned duties.***

Officers responsible for maintaining the trim of the vessel and ordering transfers of ballast and/or cargo should be fully aware of the consequences of their actions and are expected to comply with the regulations and any documentation aboard the vessel which prescribes conditions of trim and stability , e.g. "Approved Stability Booklet"

Officers and crew responsible for cargo and or bunkering operations should also be fully aware of the consequences of their actions and are expected to comply with the regulations and any documentation aboard the vessel which prescribes methods of operation

Officers and crew assigned additional responsibilities for fire fighting or emergency response should have appropriate training as per the regulations and should participate in specific drills and exercises to maintain their abilities and be fully familiar with appropriate vessel systems.

The vessel's management and operating personnel should become familiar with this document and its format so that should an emergency occur, the response of the officers and crew and the vessel's management personnel will be carried out in a structured, logical and timely manner.

In order to ensure that the crew and management are completely familiar with this document and its prescribed procedures, training should be offered and oil pollution emergency drills should be carried out regularly.

A blank "Record of Oil Pollution Emergency Drills" form is provided at the beginning of this Plan to document the dates and results of such training exercises. This documentation is to be in addition to normal record keeping and log book entries.

3. ***All crew members should become familiar with the fundamentals of the ship's mechanical and electrical systems in order to be more confident and capable during an emergency.***

It is the responsibility of the vessel's senior officers to ensure that engineering fundamentals are taught to the crew and that the crew remain familiar with them through regular drills. Drawings detailing the various mechanical and electrical systems are carried aboard the vessel. Any drawing (e.g. "Natural Vents", "Engine Room Ventilation", "One Line Electrical Diagram", "Fuel Oil Transfer Diagram") can be obtained for study from the Engineering Document Library located in the Chief Engineer's Office. These drawings are thoroughly catalogued and easily referenced

In order to ensure a fundamental familiarity with the various engineering systems, oil pollution emergency drills should include such exercises as:

isolating and sealing off accommodations and/or machinery spaces using louvers and fan shutoffs to prevent ingress of dangerous fumes; and

isolating, at the distribution panels, various electrical circuits, e g. lighting, panel feeds, in order to reduce or eliminate sources of ignition in areas of risk.

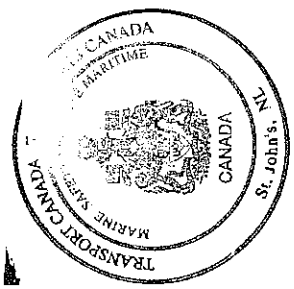
1.4 PLAN FORMAT

This plan is divided into five sections as follows:

Section 1 provides an introduction for this document and highlights some important considerations regarding the spillage of oil at sea.

Section 2 outlines the procedure and requirements for making a report to authorities in the event of a discharge or probable discharge of oil

Section 3 provides a checklist of steps to be taken in the event of various operational or casualty related spills.



Section 4 outlines procedures for national and local coordination of response efforts.

Section 5 outlines procedures for ship to ship transfer operations

Section 6 outlines safety precautions for bunkering operations

Section 7 deals with non-mandatory provisions such as oil spill response materials onboard, media information, and plan review

Section 8 outlines the responsabilities of the Oil Pollution Prevention Team

Following the main body of this plan are appendices which provide contact information and/or useful forms. Appendix 1 is an example of an unofficial facsimile report, the use of which is outlined in Section 2. Appendix 2 provides contact information for coastal authorities and ship interests. Appendix 3 is a blank calculation form for vessel stress and stability which can be filled out by an officer of the vessel and sent to the vessel owners for calculation. The use of this calculation form is described in Section 3 Appendix 4 contains flowcharts and checklists for use in the event of an emergency. Appendix 5 contains relevant ship's drawings.

1.5 OIL DISCHARGE MONITORING SYSTEM

In accordance with MARPOL 73/78 Annex 1 Regulation 16 this ship is fitted with a Jowa Oil-A Triosep and Duosep bilge water separator and Jawa M-87 and M-93 ballast water monitors, both manufactured by Jowa AB, Sweden. The oil content meters associated with these units are fitted with 15ppm oil content alarms.

IMPORTANT:

1. **ANY** OIL SPILLAGE SHOULD BE TREATED AS AN EMERGENCY.

2. IN RESPONDING TO AN OIL SPILLAGE, THE MASTER'S PRIORITY WILL BE TO ENSURE THE SAFETY OF THE CREW AND OF THE VESSEL, AND TO TAKE ACTION TO PREVENT ESCALATION OF THE INCIDENT. IMMEDIATE CONSIDERATION SHOULD BE GIVEN TO MEASURES AIMED AT PREVENTING FIRE AND EXPLOSION

SECTION 2 • Reporting Requirements

Coast guard of nearest coastal State (see Appendix 2) is to be notified whenever there is:

a) **An actual discharge of oil**
b) **Reason to suspect a probable discharge of oil due to fire, grounding, list, loss of power, collision, flooding, explosion, structural failure, etc.**
c) **Any damage or failure which may affect the safety of the vessel, such as failure or breakdown of the electrical generating system, or essential shipborne navigational aids.**

2.1 DISCHARGE OF OIL

When reporting a discharge of oil, the Master is to provide all relevant information (as per section 2.4) to:

a) Coast Guard of nearest coastal State, or
b) Port Authorities, and also to
c) Vessel Interest Contacts.

A discharge of oil, for the purposes of this plan, refers to:

a) A discharge of oil, resulting from damage to the vessel or its equipment, or for the purpose of securing the safety of a vessel or saving life at sea; or
b) A discharge during the operation of the vessel of oil in excess of the quantity or instantaneous rate permitted under the present Convention.

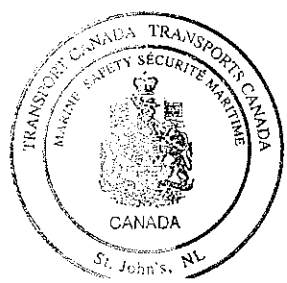
2.2 PROBABLE DISCHARGE OF OIL

The Master must use good judgment to assess any circumstance which might be cause for probable discharge of oil. When making such judgment the following factors must be taken into account:

a) The nature of the damage, failure, or breakdown of the vessel, machinery, or equipment;
b) Vessel location and proximity to land or other navigational hazards;
c) Weather, tide, current, and sea state;
d) Traffic density; and
e) Morale, health and ability of crew onboard to deal with situation

2.3 DAMAGES AND/OR FAILURES

The Master must report any damage which may affect the safety of the vessel: collision, fire, grounding, explosion, cargo shifting, list, etc. The Master must also report any failure or breakdown of essential machinery which results in impairment of the safety of navigation: i.e electrical generating system or essential vessel-borne navigational aids



2.4 INITIAL REPORT

An initial report is to be made by radio communication without delay to one of the following Canadian radio ship reporting stations; Canadian Coast Guard Radio Station, Canadian Vessel Traffic Service Center, St. Lawrence Seaway Authority marine radio station, or Canadian harbour radio station. The report is to be made following the format given below. Where the report cannot be communicated by radio, it shall be communicated by telephone to the local Canadian radio ship reporting station or to the Canadian Coast Guard Operations Center in Ottawa. Contact information is provided in Appendix 2.

FOLLOW-UP REPORTS

Follow-up reports should be made at regular intervals to keep the coastal State and other concerned parties informed of developments including, but not limited to, change of course or position, change in quantity, rate or probability of oil discharge, injuries or casualties, or effects of actions taken to control discharge or assure safety of the vessel and crew. Follow-up reports should be made in the same format as the initial report.

WRITTEN REPORT

Within 24 hours of the incident, or as soon as possible thereafter, a written report on the incident, including a statement as to its probable cause, shall be forwarded by air mail without delay to the Chief, Marine Casualty Investigations, Department of Transport, Ottawa.

UNOFFICIAL FACSIMILE REPORT

An unofficial facsimile report is included in Appendix 1. This may be sent to any concerned parties but is not consistent with IMO Resolution A 648(16) for reporting of incidents involving dangerous goods, harmful substances and/or marine pollutants, and therefore cannot constitute an official report to the coastal State.

FORMAT AND INFORMATION REQUIRED FOR OFFICIAL REPORT

AA VESSEL NAME, CALL SIGN, FLAG

BB DATE AND TIME (GMT) OF INCIDENT: 111935 meaning 11th of month at 7:35 pm.

CC SHIPS POSITION: 2230N 0600E meaning 22 deg. 30 min. N, 6 deg E

or

DD SHIPS POSITION BY TRUE BEARING (3 DIGITS) AND DISTANCE FROM CLEARLY IDENTIFIED LANDMARK.

EE TRUE COURSE (3 DIGITS)

FF SPEED IN KNOTS AND TENTHS OF A KNOT (3 DIGITS)

LL ROUTE INFORMATION - INTENDED TRACK

MM RADIO STATIONS AND FREQUENCIES GUARDED

NN TIME OF NEXT REPORT (same as in BB)

OO DRAFT (4 DIGITS - meters and centimeters)

PP TYPES AND QUANTITIES OF CARGO AND BUNKERS ON BOARD

QQ BRIEF DETAILS OF DAMAGE, LIMITATIONS ETC. (must include condition of vessel and ability to transfer cargo, ballast, or fuel)

RR BRIEF DETAILS OF ACTUAL POLLUTION (oil type, estimate of quantity discharged, whether discharge continues, cause, estimate of slick movement)

SS WEATHER AND SEA CONDITIONS (wind force/direction, relevant tidal and/or current information)

TT NAME, ADDRESS, TELEX, FAX, TELEPHONE NUMBERS OF VESSEL OWNER OR REPRESENTATIVE

UU DETAILS OF LENGTH, BREADTH, TONNAGE, AND TYPE OF VESSEL

WW TOTAL NUMBER OF PERSONS ON BOARD

XX MISC DETAILS (This includes brief details of incident, actions taken, injuries sustained and assistance required. If no outside assistance is required, then this should be clearly stated.)

2.5 WHO TO CONTACT

Contact information for coastal State and other concerned parties (port contacts, vessel interest contacts) is located in Appendix 2

2.6 ARRANGED RESPONSE ORGANIZATION(S)

The vessel, in accordance with the regulations, has onboard a **declaration** that the vessel's management has, in accordance with 660 2(2) of the Canada Shipping Act, entered into an arrangement with a response organization to which a certificate of designation has been issued pursuant to subsection 660.4(1) in respect of the quantity of oil that is carried both as fuel and cargo on board the vessel

The person or persons identified in the **declaration** shall be responsible for contacting and mobilizing the response organization.

SECTION 3 • Steps to Control Discharge

In cases of small spills on deck, the vessel's crew should take whatever actions are necessary to prevent oil from escaping over the side. Once the spill is contained on deck, the crew will need to take action to clean up the oil. SPILLED OIL SHOULD NOT BE WASHED OVER THE SIDE. Once oil is in the water, the crew's ability to respond in a practical manner is greatly reduced.

3.1 OPERATIONAL SPILLS

In the event of an operational spill which occurs during bunkering or cargo operations, it is important that the bunkering party terminate any and all bunkering operations and close all manifold valves.

Before closing any manifold valves, the bunkering / cargo party must immediately inform the terminal / loading master so that they may take action to eliminate the possibility of over-pressurization of the shore side transfer components.

After dealing with the cause of the spill, it may be necessary to obtain permission from local authorities and/or the terminal before resuming bunkering or cargo operations

If the possibility of fire or explosion exists, nonessential air intakes to accommodations and machinery spaces should be closed and all sources of sources of ignition should be eliminated. See Section 1 3 3 of this Plan.

In accordance with Section 1.3.3 of this Plan, all members of the vessel's crew should be familiar with the fundamentals of the ship's vital systems including the ventilation and electrical systems. Crew members should be able to: isolate the accommodation and/or machinery spaces using the louvers and fan shutoffs; and, from the distribution panels, isolate electrical circuits in areas of risk. Please refer to Section 1 3 3 of this Plan for additional details.

Care must be taken to consider stability and stress when taking action to mitigate the spillage of oil. Internal transfers should be undertaken only with a full appreciation of the likely impact on the vessel's overall stress and stability. Please refer to the "Approved Stability Booklet" carried on board.

Operational Spill Checklist

Action Considered	Designated Person	Completed
Sound emergency alarm	Person Discovering Incident	Y / N
Initiate emergency response procedures	Chief Officer	Y / N
Cease all bunkering operations	Chief / 2nd Engineer	Y / N
Locate source of leakage	Chief / 2nd Engineer	Y / N
Operate manifold valves	Chief / 2nd Engineer	Y / N
Close all nonessential vent intakes and tank vents as required	Chief / 2nd Engineer	Y / N
Stop or reduce outflow	Chief / 2nd Engineer	Y / N
Assess fire risk	Chief Officer	Y / N
Commence clean up	Chief Officer	Y / N
Assess Stress / Stability	Master / Chief Officer	Y / N
Transfer fuel from damaged area to slack tanks or other containment space	Chief / 2nd Engineer	Y / N
Request outside assistance if required	Master	Y / N
Counter excessive list if required / possible	Chief Officer	Y / N

1. PIPE LEAKAGE

In the event of an oil pipe leakage, the Chief Engineer must ensure that the following actions are taken:

1. Stop oil flow and close manifold and other valves.
2. Sound Emergency Alarm and initiate emergency response procedures as posted aboard the vessel.
3. Locate the source and drain affected section into an available empty or slack tank. Repair if possible.
4. If there is any possibility of released vapours entering an engine room or the accommodation intake, appropriate preventative steps must be taken quickly.
5. Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container.
6. If oil is overboard, report to proper authorities immediately (as per section 2 of this plan).
7. If oil is in bilges, pump through oil/water separator as per approved procedures.

2. TANK OVERFLOW

In the event of an oil tank overflow, the Chief Engineer must ensure that the following actions are taken:

1. Stop oil flow and close manifold and other valves.
2. Sound Emergency Alarm and initiate emergency response procedures as posted aboard the vessel.
3. Place drain buckets under overflow pipes to contain possible spills.
4. If there is any possibility of released vapours entering an engine room or the accommodation intake, appropriate preventative steps must be taken quickly.
5. Drain or transfer oil to slack or empty tanks if possible with due consideration paid to vessel stability. If no slack or empty tanks are available then oil may be pumped back ashore through delivery line, having first gained permission to do so.
6. Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container.
7. If oil is overboard, report to proper authorities immediately (as per section 2 of this plan).
8. If oil is in bilges, pump through oil/water separator as per approved procedures.

3. HULL LEAKAGE

If oil is noticed on the water near the vessel during normal operations and cannot be accounted for, the possibility of hull leakage should be suspected.

In the event of a hull leakage, the Master must ensure that the following actions are taken:

1. Sound Emergency Alarm and initiate emergency response procedures as posted aboard the vessel.
1. Stop any and all transfer or bunkering operations.
2. Identify damage and report to proper authorities immediately (as per section 2 of this plan); consider a diver if necessary and possible.
3. If possible, contain spill using materials on hand and dispose of oil-soaked materials in an appropriate container.
4. If there is any possibility of released vapours entering an engine room or the accommodation intake, appropriate preventative steps must be taken quickly.

5. Transfer fuel away from suspected leaks to empty or slack tanks if possible or to a ballast tank if necessary. If in port, arrangements can be made to pump oil ashore to tank or truck Due consideration is to be paid to vessel stress and stability
6. If it is not possible to identify the leaking tank, reduce level in all tanks in vicinity, giving due consideration to vessel stress and stability.

4. SPILLS CAUSED BY EQUIPMENT IN MACHINERY SPACES

1. If operational spills are caused by a failure of equipment in machinery spaces, any further operations of this equipment should be stopped immediately and measures are to be taken to avoid a spill.
2. Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container.
3. Do not restart equipment until problem has been rectified.

3.2 SPILLS RESULTING FROM CASUALTIES

ALL CASUALTIES ARE TO BE REPORTED BY THE MASTER AS PER SECTION 2.

The Master's priority, when responding to a casualty, will be to ensure the safety of personnel and the vessel and to take action to prevent escalation of the incident

In casualties involving spills, immediate consideration should be given to measures aimed at preventing fire and explosion, such as altering course so that the vessel is upwind of the slick, shutting down nonessential air intakes, etc.
If the vessel is aground, and therefore cannot maneuver, all possible sources of ignition should be eliminated and action taken to prevent flammable vapors entering accommodation and engine room spaces Please refer to Section 1.3.3

In accordance with Section 1.3.3 of this Plan, all members of the vessel's crew should be familiar with the fundamentals of the ship's vital systems including the ventilation and electrical systems. Crew members should be able to isolate the accommodation and/or machinery spaces using the louvers and fan shutoffs; and, from the distribution panels, isolate electrical circuits in areas of risk. Please refer to Section 1.3.3 of this Plan for additional details.

Prior to considering remedial action, the Master will need to obtain detailed information on the damage sustained by the vessel. A visual inspection should be carried out and all bunker tanks and other compartments sounded. However, due regard should be paid to the indiscriminate opening of ullage plugs or sighting ports, especially when the vessel is aground, as loss of buoyancy could result. The Master shall also ensure that all covers, doors, vents, and hatches to any and all holds, ballast tanks, and fuel tanks are sealed tightly and remain sealed to prevent possible loss of buoyancy. Having assessed the damage sustained by the vessel, the Master will be in a position to decide what action should be taken to prevent or minimize further spillage.

Great care must be taken to consider stability and stress when taking action to mitigate the spillage of oil or to free the vessel if aground Internal transfers should be undertaken only with a full appreciation of the likely impact on the vessel's overall stress and stability. Please refer to the "Approved Stability Booklet" carried on board.

Should the damage sustained be extensive, the impact of internal transfers on stress and stability may be impossible for the vessel's personnel to assess. In such cases, Appendix 3 of this plan is to be filled out as completely as possible and forwarded to the Owners to ensure the appropriate calculations can be done.

When it is possible to maneuver, the Master, in conjunction with the proper shore authorities, may consider moving the vessel to a more suitable location in order, for example, to facilitate emergency repair work or lightening operations, or to reduce the threat posed to any particularly sensitive shoreline areas Such maneuvering may be subject to coastal state jurisdiction.

Oil Spill Resulting from Casualty (Grounding, Collision, Fire, or Explosion)

Action Considered	Designated Person	Completed
Sound emergency alarm	Chief Officer / OOW	Y / N
Initiate emergency response procedures	Master / Chief Officer	Y / N
Close all nonessential vent intakes and tank vents as appropriate	Chief Officer / Chief Engineer	Y / N
Assess further danger to ship or personnel such as capsize or sinking	Master	Y / N
Cease all nonessential operations	Chief Officer / Chief Engineer	Y / N
Assess whether oil has actually been spilt / probability of spill	Chief Officer / Chief Engineer	Y / N
Sound all ER compartments to determine extent of damage	2nd Engineer	Y / N
Sound around vessel if grounded	Chief Officer	Y / N
Where possible transfer fuel away from damaged compartments	Chief Officer	Y / N
Request outside assistance if required	Master	Y / N
Contain / reduce oil outflow with resources on hand	Chief Officer / 2nd Engineer	Y / N
Commence Cleanup if possible	Chief Officer	Y / N

1. GROUNDING

If the vessel grounds, the Master must ensure that the following actions are taken:

1. Sound Emergency Alarm and muster crew.
2. Eliminate all avoidable sources of ignition and ban smoking on board. Action must be taken to prevent hazardous vapours from entering accommodation and machinery spaces. See Section 1.3.3.
3. Identify damage by means of a visual inspection.
4. Take soundings around vessel to determine nature and gradient of seabed.
5. Check differences in tidal ranges at grounding site.
6. Evaluate tidal current in grounding area.
7. Take soundings of all tanks on shell and compare with departure soundings.
8. Determine probability and/or quantity of oil released
9. If oil release is determined or is probable, this is to be included in the casualty report
10. Determine other possible hazards to the vessel, such as sliding off the grounding site, further damage from the seas / swell, and torsion forces.

At this point, determine risk of additional damage to vessel by attempting to refloat. If remaining aground is determined to be less of a risk then:

1. Use anchors to prevent vessel movement.
2. Take in ballast in empty tanks, with due consideration paid to stress and stability. Please refer to the "Approved Stability Booklet."
3. Consider transfer of fuel from damaged tanks, with due consideration paid to stress and stability. Please refer to the "Approved Stability Booklet."
4. Reduce longitudinal stress on hull by transfer of cargo internally. Please refer to the "Approved Stability Booklet."
5. If the change in stability and stress cannot be calculated on board, contact the Vessel's management to arrange for the necessary calculations. Refer to Appendix 3 for information which should be provided

2. FIRE / EXPLOSION

If a fire or explosion occurs on board, the vessel's fire control party must ensure that the following actions are taken:

1. Sound Emergency Alarm and muster crew.
1. Determine extent of damage and what damage control measures can be taken.
2. Determine whether there are casualties
3. Request assistance as deemed necessary.
4. Take necessary actions to prevent smoke and other hazardous vapours from entering the accommodation and machinery spaces.
5. Assess possibility of oil leakage.
6. Determine possible actions to control the discharge of oil. This will depend largely on the damage to the ship and cargo.
7. If there is a discharge or possible discharge of oil, this is to be included in the casualty report.
8. Should abandonment be necessary, the Master must ensure that every effort is made to maneuver survival craft upwind of any oil spill.

3 COLLISION

If a collision occurs, the Master must ensure that the following actions are taken:

1. Sound Emergency Alarm and muster crew.
2. Determine whether there are casualties.
3. If there is a possibility of fire or explosion, eliminate all avoidable sources of ignition and ban smoking on board. Action should be taken to prevent flammable vapours from entering accommodation and machinery spaces. See Section 1.3.3.
4. Decide whether separation of vessels may cause or increase spillage of oil, or increase the risk of sinking.
5. If any oil tanks are penetrated, isolate the penetrated tank or transfer oil to slack or empty tanks with due attention paid to stress and stability of the vessel. Please refer to the "Approved Stability Booklet."
6. If there is an oil spill, make a report as per section 2
7. If possible to maneuver, the Master, in conjunction with the appropriate shore authorities, should consider moving his ship to a more suitable location in order to facilitate emergency repair work or lightening operations, or to reduce the threat posed to any sensitive shoreline areas.

4. HULL FAILURE (INCLUDING ICE DAMAGE)

If the vessel suffers structural hull failure, the Master must ensure that the following actions are taken:

1. Sound Emergency Alarm and muster crew.
2. Reduce speed or stop to minimize stress on hull.
3. Assess immediate danger of sinking or capsizing.
4. Initiate damage control measures if possible.
5. If lightening is required, all efforts should be made to wait for a barge or other ship to receive the cargo.
6. If oil has spilled, or if it is necessary to jettison oil to maintain stability, make a report as per section 2.
7. If the change in stability and stress cannot be calculated on board, contact the Vessel's management to arrange for the necessary calculations
8. Consider forecast weather conditions and their effect on the situation.
9. Should abandonment be necessary, the Master must ensure that every effort is made to maneuver survival craft upwind of any oil spill

5. EXCESSIVE LIST

If excessive list occurs rapidly and unexpectedly, it may be due to:

1. Failure of hull plating.
2. Failure of internal bulkhead between compartments
3. Shift of cargo.
4. Damage through grounding or collision.
5. Incorrect operating condition. Refer to "Approved Stability Booklet."
6. Flooding in Engine Room, where free surface can cause a list.

The Master must ensure the following steps are taken immediately:

1. Stop any cargo, bunkering, or ballast operations in progress.
2. Sound Emergency Alarm and muster crew
3. Determine whether there are casualties.
4. If under way, reduce speed or stop
5. Establish reason for list. See above.
6. Sound all tanks and compare with departure soundings
7. Close all openings and vent pipes.
8. Prepare ballast and transfer pumps for possible remedial action.
9. If lightening is required, all efforts should be made to wait for a barge or other ship to receive the cargo.
10. If oil has spilled, or it is necessary to jettison oil to maintain stability, make a report as per section 2.
11. If possible, take corrective action to rectify the situation with due consideration paid to vessel stress and stability. Please refer to the "Approved Stability Booklet "

SECTION 4 • National and Local Coordination

1 The Master will advise the Coast Guard of nearest coastal state regarding any oil spill. Vessel Interest Contacts must also be notified of any such incident. See Appendix 2 for details.

2. The Master will be the point of contact on the vessel for coordinating shipboard activities with national and local authorities, act as the Company's on-scene representative, and will be responsible for overseeing the action of any salvage or spill contractors employed until such time as he/she has been FORMALLY relieved of these responsibilities by the Company.

3. The person or persons identified in the declaration shall be responsible for contacting and mobilizing the response organization(s). These organizations will coordinate and conduct the response. It is not normally practical for vessel's personnel to be directly involved in cleanup activities. Therefore, their primary role will be to provide as much information as necessary to assist the response and to cooperate with cleanup personnel. However, where no local response is forthcoming, or is delayed, the Master should consider the use of available shipboard materials to clean up or contain the spilled oil by, for example, using ship-stocked absorbent materials or utilizing mooring ropes or air-filled hoses as makeshift booms.

4. Dispersants or degreasers should not be used on oil spilled in the water as their use may contravene local regulations. However, dispersants may be used if they are approved by Environment Canada specifically for a given incident. Environment Canada will allow and approve the use of dispersants on a case by case basis only

SECTION 5 • Ship to Ship Transfer Operations

Should a situation such as lightening due to damage require a ship to ship transfer of petroleum products, the Master must take into account but not limited to the following:

1. Proper lines of communication between ships including language and radio working frequency;
2. Current and forecasted weather conditions for the intended area of transfer;
3. The compatibility of the vessels involved with regards to size, freeboard, manifold location, list, trim, etc
4. The elimination of all possible ignition sources;
5. Oil spill clean up equipment and procedures in place;
6. Contingency planning for emergency situations in place
7. The need to notify and obtain the agreement of any responsible authority.
8. Site conditions such as available shelter, water depth, and available anchorage.
9. Traffic density.

For detailed procedures concerning ship to ship transfer of petroleum products, please refer to ***The Ship to Ship Transfer Guide (Petroleum)****, published by The International Chamber of Shipping Oil Companies International Marine Forum, 3rd edition, 1997 A copy of which is to be kept on board the ship at all times.*

SECTION 6 • Safety Precautions For Bunkering Operations

NO SMOKING THROUGHOUT BUNKERING OPERATION

Before beginning refuelling operations:

1. The spill control equipment should be in the immediate vicinity and readily accessible should it be required in the event of a fuel spillage. Note that the tanker or refueling station should also have its own spillage control kit.

2. Ensure that the approximate amount of fuel required is known. This can be confirmed from the Chief Engineer, Captain, or Vessel Manager.

3. The location and ready access to the nearest fire extinguishers should be confirmed

4. All save-alls must be empty and drain holes plugged.

5. Check that no *hot work* is being carried out in the vicinity

6. Check position (Open) of interconnecting valves.

7 Establish communication with tanker or fueling station operator using portable radios.

8. Check mooring lines are secure, to prevent the vessel hanging up on the hoses.

9. Confirm system alarms are activated.

10. Bunkering should take place with the vessel upright and with a minimal trim.
During refueling operations:

11. Tank fluid levels are to be closely monitored through soundings or some other means of accurately reading instantaneous volume.

12. A close watch must be maintained on the tank vents. In the event of foaming from the vent pipe, stop bunkering operations

13. Keep close watch on the trim of the vessel. As much as possible, minimize heel and trim by loading fuel in a symmetrical order.

After refueling operations:

1. Clean up any spills with available spill equipment.

2. Ensure all save-alls are clean and empty, then remove plugs.

SECTION 7 • Additional Information (Non-Mandatory)

This section provides for additional information that local authorities, insurance underwriters, or Vessel Management may wish to include, but is not mandatory. (Regulation 26, Annex I, Marpol 73/78)

MEDIA INFORMATION

In the event of an oil spill or other related casualty, the Master is to direct any Coastal Radio station being worked that inquiries from any of the various media nodes are to be directed to the Vessel Management, who will handle such incidents shore-side. This will enable the Master to concentrate on the matter at hand.

PLAN REVIEW

This plan is to be reviewed at regular intervals by the Vessel Management and Master such that the information contained herein is current. Changes should be incorporated in the plan as and when they occur and the changes noted and by whom. Reviews should be conducted annually to reflect changes in local laws or policies, contact names or numbers, vessel characteristics, or company policy.

Reviews should also be conducted after any use of the plan in response to an incident, in order to evaluate its effectiveness and make any modifications deemed prudent at that time.

COMPANY POLICY

The Master is responsible for maintaining the vessel's plans and technical information, in addition to the drawings contained in this plan, in an orderly and readily accessible fashion. The Master is to satisfy himself to the fact that the vessel's Chief Engineer complies in similar fashion as regards to plans and technical information in his possession.

DIAGRAMS AND DRAWINGS

Should the Master or Chief Engineer discover that crucial plans or manuals covering the operation of essential parts of the vessel are not on board, they are to request the company's head office in writing, to supply such plans and manuals.

RECORD KEEPING

As stated elsewhere in this plan, the Master shall use every effort to retain all records of a pollution incident and responses thereto, for later review by the company's technical department in conjunction with the crew. Such record keeping should include actual samples of oil spilled.

ONBOARD SPILL RESPONSE EQUIPMENT

Absorbent rags and boom are stored in the SOPEP store room at the aft stbd. side of the Main Deck. It is the responsibility of the Chief Engineer to keep inventory and maintain an adequate stock of equipment

SECTION 8 • Oil Pollution Prevention Team

The master of the vessel is to appoint an Oil Pollution Prevention Team on board, to initiate recovery or cleanup procedures, and to secure the ship immediately if an incident occurs

The OPPT consists of the following crew members:

Master
Chief Officer
Chief Engineer

In the event of an emergency, the team should be called out immediately.

The team should be given necessary training in the use of such equipment as oil absorbents that the vessel may carry All members of the OPPT should be aware of their duties should an oil spill occur.

Instructions to the Oil Pollution Prevention Team

8.1 Master

In overall charge.
Informs terminal authorities or coastal authorities of incident.
Informs the local agent and requests agent to inform the local underwriter's representative.
Advises the company's head office of the situation. Keeps everyone updated at regular intervals and advises of any changes in status of the emergency
Keeps log of all events and progress of actions.

8.2 Chief Officer

In charge of deck / cargo operations.
In charge of lifeboats if required.
Keeps the Master informed and updated on the situation and of the results of steps taken to contain any spills and limit outflow.
Insures all openings in the deck and superstructure are closed to limit vapour entry

8.3 Chief Engineer

In charge of bunkering operations.
Organizes distribution of oil spill detergents if required.
Stops bunkering operations if applicable.
Stops pumps and any unnecessary pieces of machinery

Other Personnel

Deck Officer on duty
- Alerts and informs Chief Officer / Chief Engineer on the situation.
- Mobilize off duty crew as necessary.

Engineer on duty
- Assists the Chief Engineer.
- Prepare for fire fighting.
- Ensure sufficient power and water to deck.
- Organizes onboard clean up equipment.

Deck Officer off duty

Under the direction of the Master, responsible for the reporting and record keeping of all events.

On duty Ratings

Alerts the Officer on duty of any leakage.

Position sorbent / clean up material to prevent any fluid escape.

Off duty personnel

Assist as required

APPENDIX 1 • Report Format and Content

The report should contain the following:

AA VESSEL NAME, CALL SIGN, FLAG

BB DATE & TIME (GMT) OF INCIDENT: 111935 meaning 11th of month at 7:35 pm.

CC SHIPS POSITION: 2230N 0600E meaning 22 deg. 30 min. N, 6 deg. E

or

DD SHIPS POSITION BY TRUE BEARING (3 DIGITS) AND DISTANCE FROM CLEARLY IDENTIFIED LANDMARK

EE TRUE COURSE (3 DIGITS)

FF SPEED IN KNOTS AND TENTHS OF A KNOT (3 DIGITS)

LL ROUTE INFORMATION - INTENDED TRACK

MM RADIO STATIONS AND FREQUENCIES GUARDED

NN TIME OF NEXT REPORT (same as in BB)

OO DRAFT (4 DIGITS - meters and centimeters)

PP TYPES AND QUANTITIES OF CARGO AND BUNKERS ON BOARD

QQ BRIEF DETAILS OF DAMAGE, LIMITATIONS ETC (must include condition of vessel and ability to transfer cargo, ballast, or fuel)

RR BRIEF DETAILS OF ACTUAL POLLUTION (oil type, estimate of quantity discharged, whether discharge continues, cause, estimate of slick movement)

SS WEATHER AND SEA CONDITIONS (wind force/direction, relevant tidal and/or current information)

TT NAME, ADDRESS, TELEX, FAX, TELEPHONE NUMBERS OF VESSEL OWNER OR REPRESENTATIVE

UU DETAILS OF LENGTH, BREADTH, TONNAGE, AND TYPE OF VESSEL

WW TOTAL NUMBER OF PERSONS ON BOARD

XX MISC. DETAILS (brief details of incident, actions taken, injuries, assistance required)

UNOFFICIAL OIL POLLUTION EMERGENCY REPORT BY FACSIMILE

Vessel Name Call Sign Flag

Date and Time of Event

Vessel Position (Latitude & Longitude, Bearing & Distance from Landmark)

Course Speed

Intended Track

Radio Station

Date and Time of Next Report

Type and Quantity of Oil On board

Brief Details of Damage

Brief Details of Pollution

Details of Weather & Sea Conditions (Wind Speed/Direction, Swell Height/Direction)

Names of Vessel's Owner

Vessel Size and Type

Any Other Additional Information as Determined by Master

APPENDIX 2 • Who to Contact

In accordance with the Canadian Pollutant Discharge Reporting Regulations, the Master or Owner of a ship must report, without delay, any discharge or anticipated discharge of a pollutant in Canadian waters or fishing zones, to a Pollution Prevention Officer (PPO). Reports must be made in the manner described in Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants, TP 9834, or "General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants" adopted by the IMO by Resolution A 648(16). These initial reports can be made to a Vessel Traffic Service Center (VTS) or any other Canadian Coast Guard Radio Station (CGRS), on the frequencies listed in the publication, Radio Aids to Marine Navigation (RAMN).

In addition to the above process for reporting a spill from a vessel to a PPO through a CGRS or VTS, the Canadian Coast Guard maintains a 24 hour Operations Center which can be contacted at:

Canadian Coast Guard Operations Center
344 Slater Street
Ottawa, Ontario
K1A 0N7

Tel: (613) 990-5600 Fax: (613) 995-4700 Tlx: (613) 053 3128

Alternatively, spills may be reported to the appropriate regional center or nearest Vessel Traffic Service Center:

Newfoundland

St. John's	Tel:	1-709-772-2083
		1-800-563-2444 (24 hr.)
	Fax:	1-709-772-5369
	Tlx:	016-4044
Placentia Bay	Tel:	1-709-227-2182
	Fax:	1-709-227-5637
Port Aux Basques	Tel:	1-709-695-2167
	Fax:	1-709-695-7784
Goose Bay	Tel:	1-709-896-2252
	Fax:	1-709-896-8455
St. Anthony	Tel:	1-709-454-3852
	Fax:	1-709-454-3716

Nunavut

Nordreg Canada	Tel:	1-867-979-5724
P.O. Box 189	Fax:	1-867-979-2464
Iqaluit, NU		
X0A 0H0		

Nova Scotia

Halifax	Tel:	(902) 426-9750 (MCTS Operations)
		(902) 426-9738 (Officer in charge)
	Fax:	(702) 426-4483
Sydney	Tel:	(902) 564-7751 (MCTS Operations)
		(902) 564-7752 (Officer in charge)
	Fax:	(702) 564-7662

New Brunswick

Saint John	Tel:	(506) 636-4696 (MCTS Operations)
		(506) 636-4269 (Officer in charge)
	Fax:	(506) 636-5000

Quebec

Quebec City	Tel:	(418) 648-4427 (MCTS Operations)
		(418) 648-7459 (Officer in charge)
	Fax:	(418) 648-7244
Montreal	Tel:	(450) 928-4544 (MCTS Operations)
		(450) 928-4547 (Officer in charge)
	Fax:	(450) 928-4547
Riviere-Au-Renard	Tel:	(418) 269-5686 (MCTS Operations)
		(418) 269-7718 (Officer in charge)
	Fax:	(418) 269-5514

Greenland

Spill Notification Point	Tel:	+299-101111
Groenlands Kommando	Fax:	+299-10112
Maritime Rescue Coordination Center Gronnedal	Tlx:	90502 GLK GD
KK-3930 Gronnedal		

Competent National Authority	Tel:	+45-31 578310
National Agency of Environmental Protection		+45-86 123099 (24 hr)
Strandgade 29	Fax:	+45-31 572449/+45-86 181140
DK-1401 Copenhagen	Tlx:	31209 MILJOE DK

Note:

The following contacts have been included as they are within the expected range of operation of the Vessel. Due to the nature of the Vessel's voyages and varied ports of call this list should not be considered exhaustive. For this reason space has been included at the end of this section for addenda.

Within Canada, administrative inquiries related to pollution prevention, compliance and enforcement, vessel regulations, design and construction should be directed to:

Director General, Marine Safety
Transport Canada
Mailstop: AMS
330 Sparks Street
Ottawa, Ontario
K1A 0N5
Tel: (613) 998-0610 Fax: (613) 954-1032

Inquiries relating to pollution response should be directed to:

Director General, Rescue and Environmental Response
Canadian Coast Guard
344 Slater Street
Ottawa, Ontario
K1A 0N7

Tel: (613) 990-3110 Fax: (613) 996-8902

Additional Contact Information

Region	
Spill Notification Point	Contact Numbers

Region	
Spill Notification Point	Contact Numbers

Region	
Spill Notification Point	Contact Numbers

Region	
Spill Notification Point	Contact Numbers

VESSEL INTEREST CONTACTS

VESSEL MANAGEMENT

Coastal Shipping Ltd.
P.O. Box 913
Happy Valley-Goose Bay, NL
A0P 1S0

Telephone: (709) 896-2421
Facsimile: (709) 896-5028

24 HOUR CONTACT

The following phone numbers are provided
for 24 hour contact, year round:

Kevin Brewer	(709) 682-0826	(Cellular)
	(709) 227-2600	(Home)
Gerry Burgess	(709) 745-2684	(Home)

APPENDIX 3 • Vessel Stress and Stability Calculations

VOYAGE PARTICULARS

Departure Port

Departure Date

Time (GMT)

VESSEL CONDITION IMMEDIATELY BEFORE CASUALTY

Mean Draft Forward

Mean Draft Aft

KG(solid)

KG(fluid)

LCG of Vessel

#	COMPARTMENT	S.G.	TONNES

DATA RELATING TO VESSEL AFTER CASUALTY

Nature of Casualty: Collision / Grounding (Fixed / Free) / Fire
Explosion / Heavy Weather / Other

Casualty Date Report Time (GMT)

Geographical Location of Casualty: LAT
LONG

Conditions at Site at Time of Casualty Report

Weather

Sea State

Tidal State

Tidal Range

Forecast

S G. of Surrounding Water

Position of Vessel relative to Wind, Waves, Tides, etc

Drafts Measured Port and Starboard:

Drafts at Fwd Marks/F.P.(Best Estimate)
Drafts at Aft Marks/A.P (Best Estimate)
Drafts at Midships (Best Estimate)
Angle of Heel (Port / Starboard)

Best Estimate of Depth of Water (for Grounding)

Location	Port	Starboard

REPORTED DAMAGE

Details of each damaged compartment known to be open to the sea, including those damaged above the present waterline.

Compartment	Estimated Cargo Weight (tonnes)	Permeability of Cargo (%)	Comments

Extent and location of structural damage in way of above compartments. (Attach sketch)

Extent of additional damage to pipes, valves, hatches, doors, etc and list of compartments which may be subject to progressive flooding as a result.

Soundings from or estimates of amounts of flood water in spaces not directly open to sea

PROPOSED ACTION AND REQUIREMENTS

Any other relevant information, details of action being undertaken or proposed course of action, salvage operation etc.

APPENDIX 4 • Flowcharts and Checklists

OPERATIONAL SPILL CHECKLIST

HULL LEAKAGE

In the event of a hull leakage, the MASTER must ensure that the following actions are taken:

Stop Oil Flow	☐
Sound Emergency Alarm and initiate Emergency Response	☐
Place drain buckets under overflow pipes to contain possible spills	☐
Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container	☐
Drain or transfer oil into empty or slack tanks if possible or arrange for transfer to shore	☐
If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan	☐
If oil is in bilges, pump through oil/water separator	☐

✓ YES X NO NA Not Applicable

PIPE LEAKAGE

In the event of a pipe leakage, the CHIEF ENGINEER must ensure that the following actions are taken:

- Stop Oil Flow ☐
- Sound Emergency Alarm and initiate Emergency Response ☐
- Locate the source and repair if possible ☐
- Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container ☐
- Drain affected section of pipe into empty or slack tank if possible ☐
- If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan ☐
- If oil is in bilges, pump through oil/water separator ☐

✓ YES X NO NA Not Applicable

TANK OVERFLOW

In the event of a tank overflow, the CHIEF ENGINEER must ensure that the following actions are taken:

Stop Oil Flow	☐
Sound Emergency Alarm and initiate Emergency Response	☐
Place drain buckets under overflow pipes to contain possible spills	☐
Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container	☐
Drain or transfer oil into empty or slack tanks if possible or arrange for transfer to shore	☐
If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan	☐
If oil is in bilges, pump through oil/water separator	☐

✓ YES X NO NA Not Applicable

HULL FAILURE including Ice Damage

In the event of hull failure (including ice damage), the MASTER must ensure that the following actions are taken:

- **Stop Oil Flow** ☐
- **Sound Emergency Alarm and initiate Emergency Response** ☐
- **Place drain buckets under overflow pipes to contain possible spills** ☐
- **Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container** ☐
- **Drain or transfer oil into empty or slack tanks if possible or arrange for transfer to shore** ☐
- **If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan** ☐
- **If oil is in bilges, pump through oil/water separator** ☐

✓ YES X NO NA Not Applicable

GROUNDING

In the event of a grounding incident, the MASTER must ensure that the following actions are taken:

Stop Oil Flow	☐
Sound Emergency Alarm and initiate Emergency Response	☐
Place drain buckets under overflow pipes to contain possible spills	☐
Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container	☐
Drain or transfer oil into empty or slack tanks if possible or arrange for transfer to shore	☐
If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan	☐
If oil is in bilges, pump through oil/water separator	☐

✓ YES X NO NA Not Applicable

FIRE / EXPLOSION

In the event of a fire or explosion, the FIRE CONTROL PARTY CHIEF must ensure that the following actions are taken:

Stop Oil Flow	☐
Sound Emergency Alarm and initiate Emergency Response	☐
Place drain buckets under overflow pipes to contain possible spills	☐
Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container	☐
Drain or transfer oil into empty or slack tanks if possible or arrange for transfer to shore	☐
If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan	☐
If oil is in bilges, pump through oil/water separator	☐

✓ YES X NO NA Not Applicable

CASUALTY SPILL CHECKLIST

COLLISION

In the event of a collision, the MASTER must ensure that the following actions are taken:

Stop Oil Flow	☐
Sound Emergency Alarm and initiate Emergency Response	☐
Place drain buckets under overflow pipes to contain possible spills	☐
Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container	☐
Drain or transfer oil into empty or slack tanks if possible or arrange for transfer to shore	☐
If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan	☐
If oil is in bilges, pump through oil/water separator	☐

✓ YES X NO NA Not Applicable

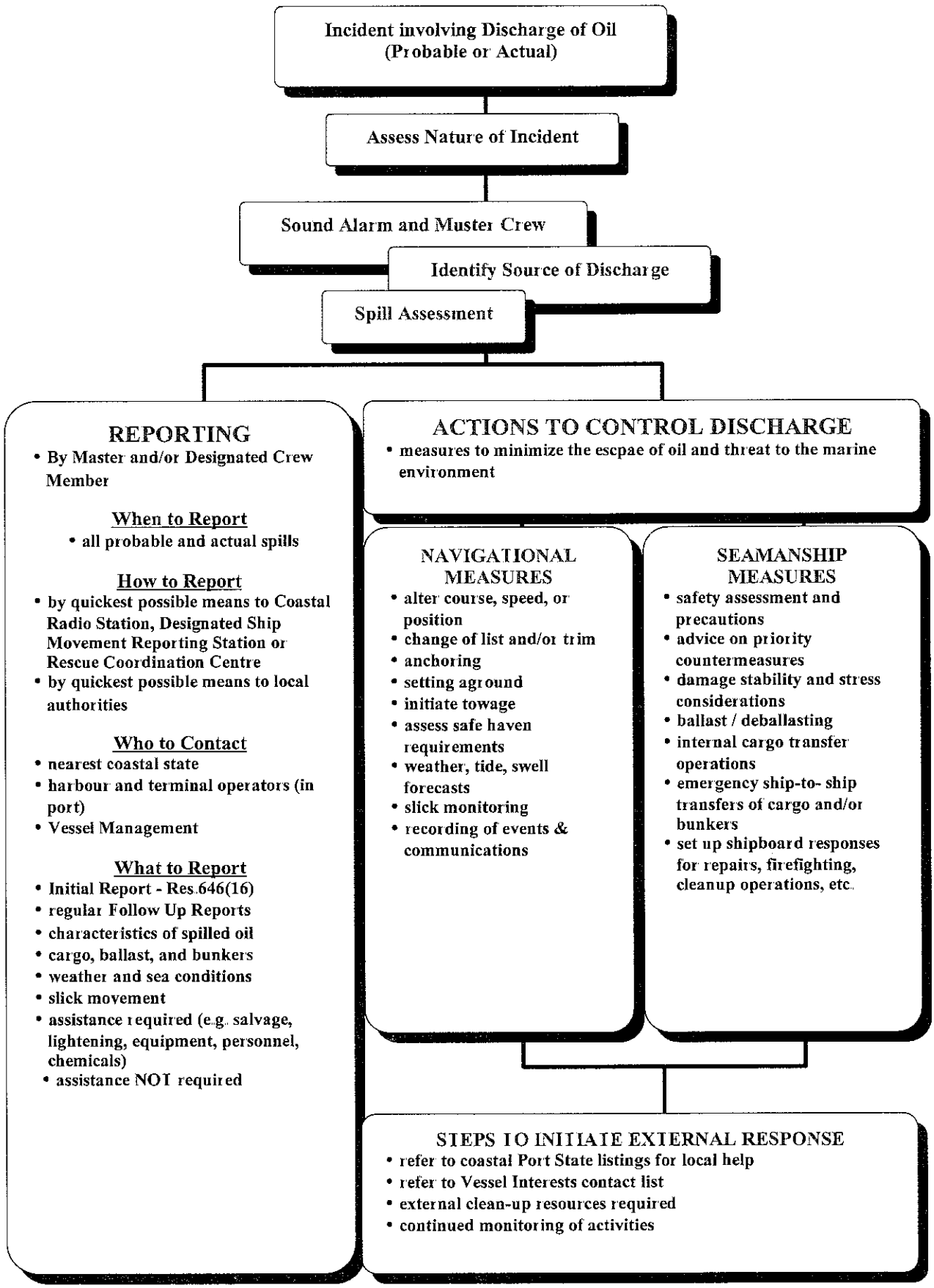
EXCESSIVE LIST

In the event of excessive listing, the MASTER must ensure that the following actions are taken:

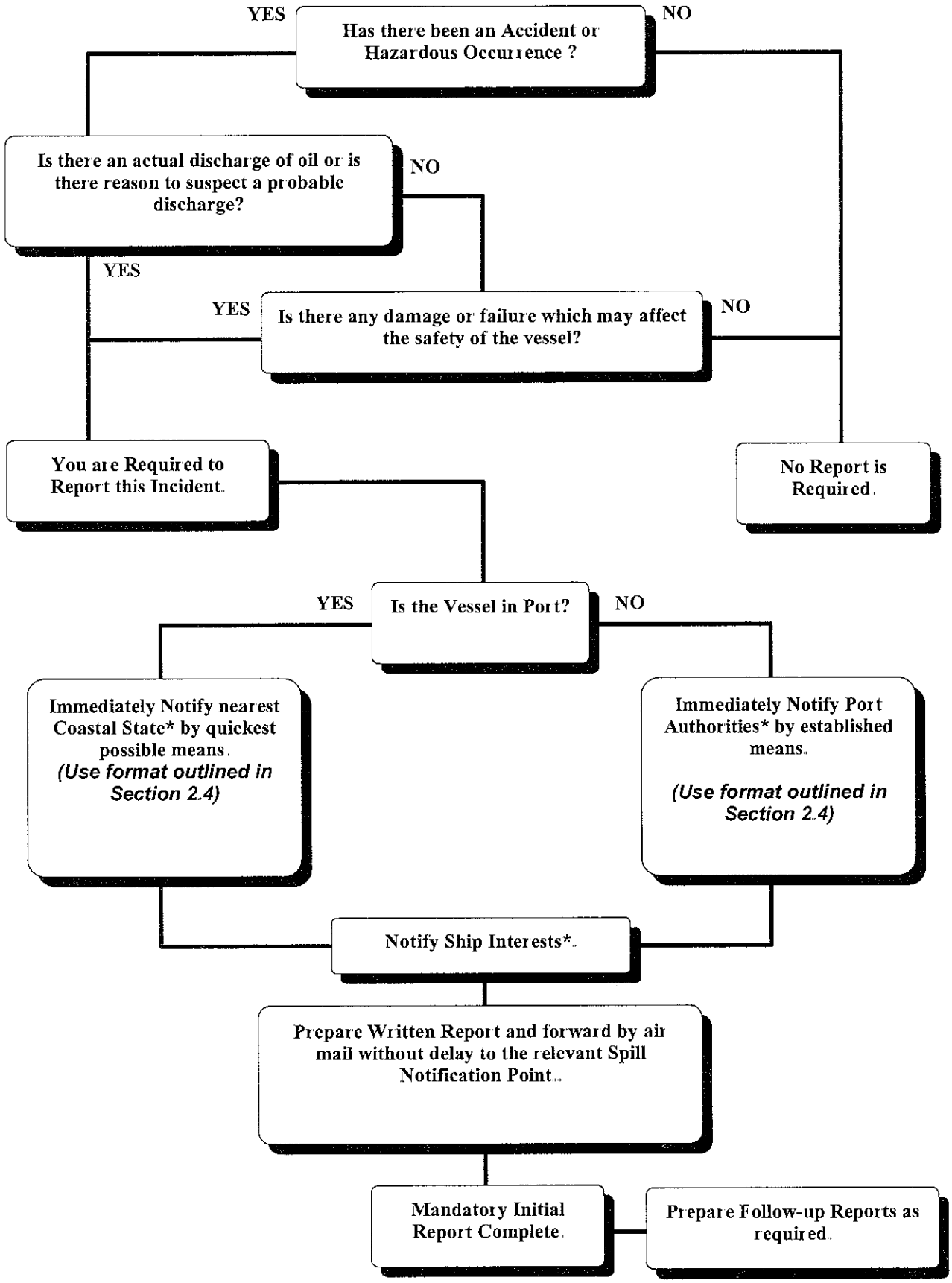
Stop Oil Flow	☐
Sound Emergency Alarm and initiate Emergency Response	☐
Place drain buckets under overflow pipes to contain possible spills	☐
Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container	☐
Drain or transfer oil into empty or slack tanks if possible or arrange for transfer to shore	☐
If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan	☐
If oil is in bilges, pump through oil/water separator	☐

✓ YES X NO NA Not Applicable

SUMMARY FLOWCHART



REPORTING REQUIREMENTS (as per Section 2)



** contact information is located in Appendix 2.*

APPENDIX 5 • Relevant Drawings

FOLLOWING ARE DRAWINGS RELEVANT TO THIS VESSEL

General Arrangement
Tank Capacity Plan
Bilge and Ballast System
Fuel Oil System
Cargo Handling System

SHIPBOARD OIL POLLUTION EMERGENCY PLAN

for

MT NANNY

6,544 Gross Tons Register of St. John's, NL

PREPARED BY:

Poseidon Marine Consultants Ltd.
391 Stavanger Drive
St. John's NL A1A 5G1
Telephone: (709) 739-4321
Fax: (709) 739-4421

PREPARED FOR:

Coastal Shipping Limited
The Fortis Building
139 Water Street
St. John's, NL
A1C 1B2

Issued: April 2009
Job Number: *2008-118*

Change Number

Official Stamp Examined by Date

Examined under the provisions of Annex I and Annex II of MARPOL 73/78 and the Canadian Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals SOR/2007-86

Stan Gutt Pollution Prevention Officer

2009-05-06

Date

Change Number

Official Stamp Examined by Date

Change Number

Official Stamp Examined by Date

RECORD OF CHANGES

Amendment Number	Section and Page Affected	Date Entered	Remarks	Name and Position of Person Making Entry

RECORD OF OIL POLLUTION EMERGENCY DRILLS

DATE	TYPE OF OIL POLLUTION DRILL	LOCATION	REMARKS MASTER'S SIGNATURE

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A2 Who to Contact

A3 Vessel Stress and Stability Calculations
A4 Flowcharts and Checklists
A5 Relevant Drawings

SHIP'S PARTICULARS

PRINCIPAL PARTICULARS

Vessel Name:	Nanny (ex. Nathalie SIF)
Flag / Port of Registry:	Canada / St John's, NL
Official Number:	833250
Det Norske Veritas Number:	18064
IMO Number:	9051399
Call Sign:	CFN 5289
Gross Registered Tonnage:	6544 (ITC69)
Net Registered Tonnage:	3081 (ITC69)
Length, Overall:	116.40 m
Length, B.P.:	110.56 m
Breadth, Max. at Deck:	19.001 m
Depth, Moulded:	10.10 m
Design Draft (Summer):	7.814 m
Deadweight:	9,176 metric tons
Built:	Hyundai Heavy Industries Co., Republic of Korea.
Year of Build:	1993
Complement (Maximum):	17
Complement (Safemanning):	10
Propulsion Power:	1 X MAK 6M552C 4050 KW @ 500 rpm

CAPACITIES

Pot Fresh Water	Approx. 69.0 m^3	18,227 Gallons
Technical Fresh Water	Approx. 332.4 m^3	87,810 Gallons
Fuel Oil (MDO)	Approx. 70.8 m^3	18,703 Gallons
Fuel Oil (HFO)	Approx. 524.8 m^3	138,637 Gallons
Cargo Hold Incl. Slop Tanks	Approx 10,942.4 m^3	2,890,571 Gallons
Ballast Water	Approx. 3728.4 m^3	984,833 Gallons
Lube Oil	Approx. 29.8 m^3	7,872 Gallons
F.O Overflow (S)	Approx. 31.4 m^3	8,295 Gallons
L.O. Drain (P)	Approx. 8.8 m^3	2,324 Gallons
Oily Bilge (S)	Approx. 3.9 m^3	1,030 Gallons
F.W. Drain Tk (P)	Approx. 3.3 m^3	872 Gallons
Bilge Holding Tk	Approx. 15.8 m^3	4,174 Gallons
Sludge Tk (S)	Approx. 12.2 m^3	3,223 Gallons
Boiler Water Drain Tk (S)	Approx. 2.4 m^3	634 Gallons
Chain Locker (P)	Approx. 22.7 m^3	5,997 Gallons
Chain Locker (S)	Approx. 22.7 m^3	5,997 Gallons
M/E L.O. Sump Tk. (C)	Approx. 8.4 m^3	2,219 Gallons

INTRODUCTION

1. This Plan is written in accordance with the Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals and also in accordance with the requirements of regulation 37 of annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 thereto.

2. The purpose of the Plan is to provide guidance to on board operating personnel the vessel with respect to the steps to be taken when a pollution incident has or is likely to occur.

3. The Plan contains all information and operational instructions required by the guidelines. The appendices contain names, telephone, fax numbers, etc of all contacts referenced in the Plan, as well as other reference material.

4 This Plan has been examined by the Transport Canada - Marine Safety, (herein after referred to as "the Board") and, except as provided below, no alteration or revision shall be made to any part of it without prior approval of the Board.

5 Changes to Sections 6, 7, 8, and the appendices will not be required to be approved by the Board The appendices should be maintained up to date by the Owners, Operators, and Managers.

6 For the purposes of this Plan, the Master is taken to be that person who is a member of the vessel's operational personnel and to which is given senior responsibility for the vessel and any circumstances pertaining thereto

7. Before entering a port of call, the Master should be aware of local emergency response procedures and organizations and have up to date contact information readily available.

SECTION 1 • Preamble

1.1 PURPOSE AND INTENT OF THIS PLAN

This Shipboard Oil Pollution Emergency Plan is intended to assist the vessel's officers, crew and management personnel in dealing with an unexpected discharge of oil. Its primary purpose is to set in motion the necessary actions to stop or minimize the discharge and to mitigate its effects. For quick reference the responsibilities of the Oil Pollution Prevention Team is contained in Section 8 on Page 28.

1.2 SUPPORT BY VESSEL'S MANAGEMENT

In accordance with the plans and policies of the vessel's management organization, management personnel will support the vessel's crew with additional resources, i.e. personnel and materials, as the situation warrants.

1.3 PERSONNEL TRAINING AND EXERCISES

1. ***It is the responsibility of the Vessel's Management to ensure that, through training and exercises, all officers and crew are capable of confidently and safely carrying out their assigned duties.***

   Officers responsible for maintaining the trim of the vessel and ordering transfers of ballast and/or cargo should be fully aware of the consequences of their actions and are expected to comply with the regulations and any documentation aboard the vessel which prescribes conditions of trim and stability , e.g. "Approved Stability Booklet".

   Officers and crew responsible for cargo and or bunkering operations should also be fully aware of the consequences of their actions and are expected to comply with the regulations and any documentation aboard the vessel which prescribes methods of operation.

   Officers and crew assigned additional responsibilities for fire fighting or emergency response should have appropriate training as per the regulations and should participate in specific drills and exercises to maintain their abilities and be fully familiar with appropriate vessel systems.

2. ***The vessel's management and operating personnel should become familiar with this document and its format so that should an emergency occur, the response of the officers and crew and the vessel's management personnel will be carried out in a structured, logical and timely manner.***

   In order to ensure that the crew and management are completely familiar with this document and its prescribed procedures, training should be offered and oil pollution emergency drills should be carried out regularly.

A blank "Record of Oil Pollution Emergency Drills" form is provided at the beginning of this Plan to document the dates and results of such training exercises. This documentation is to be in addition to normal record keeping and log book entries.

3. ***All crew members should become familiar with the fundamentals of the ship's mechanical and electrical systems in order to be more confident and capable during an emergency.***

It is the responsibility of the vessel's senior officers to ensure that engineering fundamentals are taught to the crew and that the crew remain familiar with them through regular drills. Drawings detailing the various mechanical and electrical systems are carried aboard the vessel. Any drawing (e.g. "Natural Vents", "Engine Room Ventilation", "One Line Electrical Diagram", "Fuel Oil Transfer Diagram") can be obtained for study from the Engineering Document Library located in the Chief Engineer's Office. These drawings are thoroughly catalogued and easily referenced.

In order to ensure a fundamental familiarity with the various engineering systems, oil pollution emergency drills should include but not limited to such exercises as:

- isolating and sealing off accommodations and/or machinery spaces using louvers and fan shutoffs to prevent ingress of dangerous fumes; and
- isolating, at the distribution panels, various electrical circuits, e.g. lighting, panel feeds, in order to reduce or eliminate sources of ignition in areas of risk

1.4 PLAN FORMAT

This plan is divided into Eight sections as follows:

Section 1 provides an introduction for this document and highlights some important considerations regarding the spillage of oil at sea.

Section 2 outlines the procedure and requirements for making a report to authorities in the event of a discharge or probable discharge of oil.

Section 3 provides a checklist of steps to be taken in the event of various operational or casualty related spills.

Section 4 outlines procedures for national and local coordination of response efforts.

Section 5 outlines procedures for ship to ship transfer operations

Section 6 outlines safety precautions for bunkering operations

Section 7 deals with non-mandatory provisions such as oil spill response materials onboard, media information, and plan review.

Section 8 outlines the responsabilities of the Oil Pollution Prevention Team.

Following the main body of this plan are appendices which provide contact information and/or useful forms. Appendix 1 is an example of an unofficial facsimile report, the use

of which is outlined in Section 2. Appendix 2 provides contact information for coastal authorities and ship interests. Appendix 3 is a blank calculation form for vessel stress and stability which can be filled out by an officer of the vessel and sent to the vessel owners for calculation. The use of this calculation form is described in Section 3. Appendix 4 contains flowcharts and checklists for use in the event of an emergency. Appendix 5 contains relevant ship's drawings.

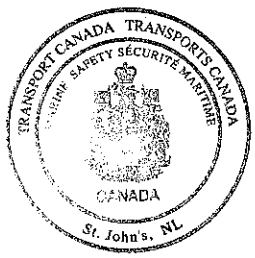
1.5 OIL DISCHARGE MONITORING SYSTEM

In accordance with MARPOL 73/78 Annex 1 Regulation I4 this ship is fitted with a Hanyoung OS-3 0 Capacity 3 m^3/hr oily water separator, manufactured by Hanyoung Engineering Ltd and Seres MKIII, S 663 ballast water monitor manufactured by Seres environment, France. The oil content meters associated with these units are fitted with 15ppm oil content alarms.

IMPORTANT:

1. **ANY** OIL SPILLAGE SHOULD BE TREATED AS AN EMERGENCY.

2. IN RESPONDING TO AN OIL SPILLAGE, THE MASTER'S PRIORITY WILL BE TO ENSURE THE SAFETY OF THE CREW AND OF THE VESSEL, AND TO TAKE ACTION TO PREVENT ESCALATION OF THE INCIDENT IMMEDIATE CONSIDERATION SHOULD BE GIVEN TO MEASURES AIMED AT PREVENTING FIRE AND EXPLOSION



SECTION 2 • Reporting Requirements

Coast guard of nearest coastal State (see Appendix 2) is to be notified whenever there is:

a) **An actual discharge of oil**
b) **Reason to suspect a probable discharge of oil due to fire, grounding, list, loss of power, collision, flooding, explosion, structural failure, etc.**
c) **Any damage or failure which may affect the safety of the vessel, such as failure or breakdown of the electrical generating system, or essential shipborne navigational aids.**

*****See Reporting Requirement and Summary flowcharts in Appendix 4 for details*****

2.1 DISCHARGE OF OIL

When reporting a discharge of oil, the Master is to provide all relevant information (as per section 2.4) to:

a) Coast Guard of nearest coastal State, or
b) Port Authorities, and also to
c) Vessel Interest Contacts.

A discharge of oil, for the purposes of this plan, refers to:

a) A discharge of oil, resulting from damage to the vessel or its equipment, or for the purpose of securing the safety of a vessel or saving life at sea; or
b) A discharge during the operation of the vessel of oil in excess of the quantity or instantaneous rate permitted under the present Convention

2.2 PROBABLE DISCHARGE OF OIL

The Master must use good judgment to assess any circumstance which might be cause for probable discharge of oil. When making such judgment the following factors must be taken into account:

a) The nature of the damage, failure, or breakdown of the vessel, machinery, or equipment;
b) Vessel location and proximity to land or other navigational hazards;
c) Weather, tide, current, and sea state;
d) Traffic density; and
e) Morale, health and ability of crew onboard to deal with situation.

2.3 DAMAGES AND/OR FAILURES

The Master must report any damage which may affect the safety of the vessel: collision, fire, grounding, explosion, cargo shifting, list, etc The Master must also report any failure or breakdown of essential machinery which results in impairment of the safety of navigation: i.e. electrical generating system or essential vessel-borne navigational aids.

2 4 INITIAL REPORT

An initial report is to be made by radio communication without delay to one of the following Canadian radio ship reporting stations; Canadian Coast Guard Radio Station, Marine Communication Traffic Services, St. Lawrence Seaway Authority marine radio station, or Canadian harbour radio station. The report is to be made following the format given in this section on the next page. Where the report cannot be communicated by radio, it shall be communicated by telephone to the local Canadian radio ship reporting station or to the Canadian Coast Guard Operations Center in Ottawa. Contact information is provided in Appendix 2.

FOLLOW-UP REPORTS

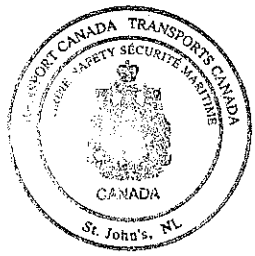
Follow-up reports should be made at regular intervals to keep the coastal State and other concerned parties informed of developments including, but not limited to, change of course or position, change in quantity, rate or probability of oil discharge, injuries or casualties, or effects of actions taken to control discharge or assure safety of the vessel and crew Follow-up reports should be made in the same format as the initial report

WRITTEN REPORT

Within 24 hours of the incident, or as soon as possible thereafter, a written report on the incident, including a statement as to its probable cause, shall be forwarded by air mail without delay to the Chief, Marine Casualty Investigations, Department of Transport, Ottawa.

UNOFFICIAL FACSIMILE REPORT

An unofficial facsimile report is included in Appendix 1. This may be sent to any concerned parties but is not consistent with IMO Resolution A 851(20) for reporting of incidents involving dangerous goods, harmful substances and/or marine pollutants, and therefore cannot constitute an official report to the coastal State



FORMAT AND INFORMATION REQUIRED FOR OFFICIAL REPORT

AA VESSEL NAME, CALL SIGN, FLAG

BB DATE AND TIME (GMT) OF INCIDENT: 111935 meaning 11th of month at 7:35 pm.

CC SHIPS POSITION: 2230N 0600E meaning 22 deg. 30 min. N, 6 deg. E

or

DD SHIPS POSITION BY TRUE BEARING (3 DIGITS) AND DISTANCE FROM CLEARLY IDENTIFIED LANDMARK.

EE TRUE COURSE (3 DIGITS)

FF SPEED IN KNOTS AND TENTHS OF A KNOT (3 DIGITS)

LL ROUTE INFORMATION - INTENDED TRACK

MM RADIO STATIONS AND FREQUENCIES GUARDED

NN TIME OF NEXT REPORT (same as in BB)

OO DRAFT (4 DIGITS - meters and centimeters)

PP TYPES AND QUANTITIES OF CARGO AND BUNKERS ON BOARD

QQ BRIEF DETAILS OF DAMAGE, LIMITATIONS ETC (must include condition of vessel and ability to transfer cargo, ballast, or fuel)

RR BRIEF DETAILS OF ACTUAL POLLUTION (oil type, estimate of quantity discharged, whether discharge continues, cause, estimate of slick movement)

SS WEATHER AND SEA CONDITIONS (wind force/direction, relevant tidal and/or current information)

TT NAME, ADDRESS, FAX, TELEPHONE NUMBERS OF VESSEL OWNER OR REPRESENTATIVE

UU DETAILS OF LENGTH, BREADTH, TONNAGE, AND TYPE OF VESSEL

WW TOTAL NUMBER OF PERSONS ON BOARD

XX MISC. DETAILS (This includes brief details of incident, actions taken, injuries sustained and assistance required. If no outside assistance is required, then this should be clearly stated.)

2 5 WHO TO CONTACT

Contact information for coastal State and other concerned parties (port contacts, vessel interest contacts) is located in Appendix 2

2 6 ARRANGED RESPONSE ORGANIZATION(S)

The vessel, in accordance with the regulations, has onboard a **declaration** that the vessel's management has, in accordance with 167 of the Canada Shipping Act 2001, entered into an arrangement with a response organization to which a certificate of designation has been issued pursuant to section 169 in respect of the quantity of oil that is carried both as fuel and cargo on board the vessel.

Four response organizations (RO) have been established in Canada. Although each of the RO's are independent Corporations they are linked together through various support and mutual aid agreements. Each of the RO's has a specific Geographic Area of Response (GAR) and a certified response capability of 10,000 tonnes. The following table provides a list of the RO's and a general description of their GAR's. A detailed description of the GAR for each of the RO's is provided in Item 3 5.

Response Organization	Geographic Area of Response (GAR)
• Western Canada Marine Response Corporation(WCMRC)	• In general the waters bordering British Columbia
• Eastern Canada Response Corporation Ltd. (ECRC)	• In general the waters of the Canadian Great Lakes, Quebec and the Atlantic Coast excluding areas covered by Alert and PIMS
• Atlantic Emergency Response Team ("ALERT") Inc.	• In general the Port of Saint John, New Brunswick and surrounding waters.
• Point Tupper Marine Services Limited (PTMS)	• In general the Port of Port Hawkesbury, Nova Scotia and surrounding waters .

Prior to commencing a voyage the master or his onboard designate is responsible to ensure that the necessary declarations for the intended voyage are onboard and necessary contact information has been inserted in the manual in Appendix 2: Who to contact under section " additional contact information".
As an example of whom to contact please refer to the page 34 for Eastern Canada Response Corporation (ECRC) call out sheet If conditions permit i.e. time, prevailing conditions , MASTER shall consult with vessel management contact prior to activation of any response organization.

SECTION 3 • Steps to Control Discharge

In cases of small spills on deck, the vessel's crew should take whatever actions are necessary to prevent oil from escaping over the side. Once the spill is contained on deck, the crew will need to take action to clean up the oil. SPILLED OIL SHALL NOT BE WASHED OVER THE SIDE. Once oil is in the water, the crew's ability to respond in a practical manner is greatly reduced.

3.1 OPERATIONAL SPILLS

In the event of an operational spill which occurs during bunkering or cargo operations, it is important that the bunkering party terminate any and all bunkering operations and close all manifold valves.

Before closing any manifold valves, the bunkering / cargo party must immediately inform the terminal / loading master so that they may take action to eliminate the possibility of over-pressurization of the shore side transfer components.

After dealing with the cause of the spill, it may be necessary to obtain permission from local authorities and/or the terminal before resuming bunkering or cargo operations

If the possibility of fire or explosion exists, nonessential air intakes to accommodations and machinery spaces should be closed and all sources of sources of ignition should be eliminated. See Section 1.3.3 of this Plan

In accordance with Section 1.3.3 of this Plan, all members of the vessel's crew should be familiar with the fundamentals of the ship's vital systems including the ventilation and electrical systems. Crew members should be able to: isolate the accommodation and/or machinery spaces using the louvers and fan shutoffs; and, from the distribution panels, isolate electrical circuits in areas of risk

Care must be taken to consider stability and stress when taking action to mitigate the spillage of oil. Internal transfers should be undertaken only with a full appreciation of the likely impact on the vessel's overall stress and stability. Please refer to the "Approved Stability Booklet" carried on board.

Operational Spill Checklist

Action Considered	Designated Person	Completed
Sound emergency alarm	Person Discovering Incident	Y / N
Mobilize Oil Pollution Prevention Team	Chief Engineer / Master	Y / N
Cease all bunkering operations	Chief / 2nd Engineer	Y / N
Locate source of leakage	Chief / 2nd Engineer	Y / N
Operate manifold valves	Chief / 2nd Engineer	Y / N
Close all nonessential vent intakes and tank vents as required	Chief / 2nd Engineer	Y / N
Stop or reduce outflow	Chief / 2nd Engineer	Y / N
Assess fire risk	Chief Officer	Y / N
Commence clean up	Chief Officer	Y / N
Assess Stress / Stability	Master / Chief Officer	Y / N
Transfer fuel from damaged area to slack tanks or other containment space	Chief / 2nd Engineer	Y / N
Request outside assistance if required	Master	Y / N
Counter excessive list if required / possible	Chief Officer	Y / N

1. PIPE LEAKAGE

In the event of an oil pipe leakage, the Chief Engineer must ensure that the following actions are taken:

1. Stop oil flow and close manifold and other valves.
2. Sound Emergency Alarm and Mobilize Oil Pollution Prevention Team.
3. Locate the source and drain affected section into an available empty or slack tank. Repair if possible.
4. If there is any possibility of released vapours entering an engine room or the accommodation intake, appropriate preventative steps must be taken quickly.
5. Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container.
6. If oil is overboard, report to proper authorities immediately (as per section 2 of this plan)
7. If oil is in bilges, pump through oil/water separator as per approved procedures.

2. TANK OVERFLOW

In the event of an oil tank overflow, the Chief Engineer must ensure that the following actions are taken:

1. Stop oil flow and close manifold and other valves
2. Sound Emergency Alarm and Mobilize Oil Pollution Prevention Team
3. Place drain buckets under overflow pipes to contain possible spills.
4. If there is any possibility of released vapours entering an engine room or the accommodation intake, appropriate preventative steps must be taken quickly.
5. Drain or transfer oil to slack or empty tanks if possible with due consideration paid to vessel stability. If no slack or empty tanks are available then oil may be pumped back ashore through delivery line, having first gained permission to do so.
6. Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container
7. If oil is overboard, report to proper authorities immediately (as per section 2 of this plan)
8. If oil is in bilges, pump through oil/water separator as per approved procedures.

3. HULL LEAKAGE

If oil is noticed on the water near the vessel during normal operations and cannot be accounted for, the possibility of hull leakage should be suspected.

In the event of a hull leakage, the Master must ensure that the following actions are taken:

1. Sound Emergency Alarm and Mobilize Oil Pollution Prevention Team.
2. Stop any and all transfer or bunkering operations.
3. Identify damage and report to proper authorities immediately (as per section 2 of this plan); consider a diver if necessary and possible
4. If possible, contain spill using materials on hand and dispose of oil-soaked materials in an appropriate container.
5. If there is any possibility of released vapours entering an engine room or the accommodation intake, appropriate preventative steps must be taken quickly.
6. Transfer fuel away from suspected leaks to empty or slack tanks if possible or to a ballast tank if necessary. If in port, arrangements can be made to pump oil ashore to tank or truck. Due consideration is to be paid to vessel stress and stability.

7. If it is not possible to identify the leaking tank, reduce level in all tanks in vicinity, giving due consideration to vessel stress and stability.

4. SPILLS CAUSED BY EQUIPMENT IN MACHINERY SPACES

1. If operational spills are caused by a failure of equipment in machinery spaces, any further operations of this equipment should be stopped immediately and measures are to be taken to avoid a spill.
2. Sound Emergency Alarm and Mobilize Oil Pollution Prevention Team
3. Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container.
4. Do not restart equipment until problem has been rectified.

3.2 SPILLS RESULTING FROM CASUALTIES

ALL CASUALTIES ARE TO BE REPORTED BY THE MASTER AS PER SECTION 2.

The Master's priority, when responding to a casualty, will be to ensure the safety of personnel and the vessel and to take action to prevent escalation of the incident.

In casualties involving spills, immediate consideration should be given to measures aimed at preventing fire and explosion, such as altering course so that the vessel is upwind of the slick, shutting down nonessential air intakes, etc.
If the vessel is aground, and therefore cannot maneuver, all possible sources of ignition should be eliminated and action taken to prevent flammable vapors entering accommodation and engine room spaces. Please refer to Section 1.3.3

In accordance with Section 1.3.3 of this Plan, all members of the vessel's crew should be familiar with the fundamentals of the ship's vital systems including the ventilation and electrical systems. Crew members should be able to isolate the accommodation and/or machinery spaces using the louvers and fan shutoffs; and, from the distribution panels, isolate electrical circuits in areas of risk. Please refer to Section 1.3.3 of this Plan for additional details.

Prior to considering remedial action, the Master will need to obtain detailed information on the damage sustained by the vessel. A visual inspection should be carried out and all bunker tanks and other compartments sounded. However, due regard should be paid to the indiscriminate opening of ullage plugs or sighting ports, especially when the vessel is aground, as loss of buoyancy could result. The Master shall also ensure that all covers, doors, vents, and hatches to any and all holds, ballast tanks, and fuel tanks are sealed tightly and remain sealed to prevent possible loss of buoyancy. Having assessed the damage sustained by the vessel, the Master will be in a position to decide what action should be taken to prevent or minimize further spillage

Great care must be taken to consider stability and stress when taking action to mitigate the spillage of oil or to free the vessel if aground. Internal transfers should be undertaken only with a full appreciation of the likely impact on the vessel's overall stress and stability. Please refer to the "Approved Stability Booklet" carried on board.

Should the damage sustained be extensive, the impact of internal transfers on stress and stability may be impossible for the vessel's personnel to assess. In such cases, Appendix 3 of this plan is to be filled out as completely as possible and forwarded to the Owners to ensure the appropriate calculations can be done.

When it is possible to maneuver, the Master, in conjunction with the proper shore authorities, may consider moving the vessel to a more suitable location in order, for example, to facilitate emergency repair work or lightening operations, or to reduce the threat posed to any particularly sensitive shoreline areas. Such maneuvering may be subject to coastal state jurisdiction.

Oil Spill Resulting from Casualty (Grounding, Collision, Fire, or Explosion)

Action Considered	Designated Person	Completed
Sound emergency alarm	Chief Officer / OOW	Y / N
Mobilize Oil Pollution Prevention Team	Master / Chief Officer	Y / N
Close all nonessential vent intakes and tank vents as appropriate	Chief Officer / Chief Engineer	Y / N
Assess further danger to ship or personnel such as capsize or sinking	Master	Y / N
Cease all nonessential operations	Chief Officer / Chief Engineer	Y / N
Assess whether oil has actually been spilt / probability of spill	Chief Officer / Chief Engineer	Y / N
Sound all compartments to determine extent of damage	2nd Engineer	Y / N
Sound around vessel if grounded	Chief Officer	Y / N
Where possible transfer fuel away from damaged compartments	Chief Engineer	Y / N
Request outside assistance if required	Master	Y / N
Contain / reduce oil outflow with resources on hand	2nd Engineer	Y / N
Initiate Cleanup (if possible)	Chief Officer	Y / N

1. GROUNDING

If the vessel grounds, the Master must ensure that the following actions are taken:

1. Sound Emergency Alarm, muster crew and Mobilize Oil Pollution Prevention Team.
2. Eliminate all avoidable sources of ignition and ban smoking on board. Action must be taken to prevent hazardous vapours from entering accommodation and machinery spaces See Section 1.3.3.
3. Identify damage by means of a visual inspection.
4. Take soundings around vessel to determine nature and gradient of seabed.
5. Check differences in tidal ranges at grounding site.
6. Evaluate tidal current in grounding area.
7. Take soundings of all tanks on shell and compare with departure soundings
8. Determine probability and/or quantity of oil released.
9. If oil release is determined or is probable, this is to be included in the casualty report.
10. Determine other possible hazards to the vessel, such as sliding off the grounding site, further damage from the seas / swell, and torsion forces.

At this point, determine risk of additional damage to vessel by attempting to refloat. If remaining aground is determined to be less of a risk then:

1. Use anchors to prevent vessel movement.
2. Take in ballast in empty tanks, with due consideration paid to stress and stability. Please refer to the "Approved Stability Booklet."
3. Consider transfer of fuel from damaged tanks, with due consideration paid to stress and stability. Please refer to the "Approved Stability Booklet."
4. Reduce longitudinal stress on the hull by transfer of fluids internally. Please refer to the "Approved Stability Booklet."
5. If the change in stability and stress cannot be calculated on board, contact the Vessel's management to arrange for the necessary calculations. Refer to Appendix 3 for information which should be provided

2. FIRE / EXPLOSION

If a fire or explosion occurs on board, the vessel's fire control party must ensure that the following actions are taken:

1. Sound Emergency Alarm muster crew and Mobilize Oil Pollution Prevention Team.
2. Determine extent of damage and what damage control measures can be taken.
3. Determine whether there are casualties.
4. Request assistance as deemed necessary.
5. Take necessary actions to prevent smoke and other hazardous vapours from entering the accommodation and machinery spaces.
6. Assess possibility of oil leakage
7. Determine possible actions to control the discharge of oil. This will depend largely on the damage to the ship and cargo.
8. If there is a discharge or possible discharge of oil, this is to be included in the casualty report.
9. Should abandonment be necessary, the Master must ensure that every effort is made to maneuver survival craft upwind of any oil spill.

3. COLLISION

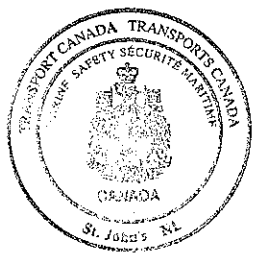
If a collision occurs, the Master must ensure that the following actions are taken:

1. Sound Emergency Alarm muster crew and Mobilize Oil Pollution Prevention Team
2. Determine whether there are casualties.
3. If there is a possibility of fire or explosion, eliminate all avoidable sources of ignition and ban smoking on board. Action should be taken to prevent flammable vapours from entering accommodation and machinery spaces See Section 1.3.3.
4. Decide whether separation of vessels may cause or increase spillage of oil, or increase the risk of sinking
5. If any oil tanks are penetrated, isolate the penetrated tank or transfer oil to slack or empty tanks with due attention paid to stress and stability of the vessel. Please refer to the "Approved Stability Booklet."
6. If there is an oil spill, make a report as per section 2.
7. If possible to maneuver, the Master, in conjunction with the appropriate shore authorities, should consider moving his ship to a more suitable location in order to facilitate emergency repair work or lightening operations, or to reduce the threat posed to any sensitive shoreline areas

4. HULL FAILURE (INCLUDING ICE DAMAGE)

If the vessel suffers structural hull failure, the Master must ensure that the following actions are taken:

1. Sound Emergency Alarm muster crew and Mobilize Oil Pollution Prevention Team
2. Reduce speed or stop to minimize stress on hull.
3. Assess immediate danger of sinking or capsizing.
4. Initiate damage control measures if possible.
5. If lightening is required, all efforts should be made to wait for a barge or other ship to receive the cargo.
6. If oil has spilled, or if it is necessary to jettison oil to maintain stability, make a report as per section 2.
7. If the change in stability and stress cannot be calculated on board, contact the Vessel's management to arrange for the necessary calculations.
8. Consider forecast weather conditions and their effect on the situation.
9. Should abandonment be necessary, the Master must ensure that every effort is made to maneuver survival craft upwind of any oil spill.



5. EXCESSIVE LIST

If excessive list occurs rapidly and unexpectedly, it may be due to:

1. Failure of hull plating.
2. Failure of internal bulkhead between compartments.
3. Shift of cargo
4. Damage through grounding or collision
5. Incorrect operating condition Refer to "Approved Stability Booklet"
6. Flooding in Engine Room, where free surface can cause a list.

The Master must ensure the following steps are taken immediately:

1. Stop any cargo, bunkering, or ballast operations in progress.
2. Sound Emergency Alarm muster crew and Mobilize Oil Pollution Prevention Team.
3. Determine whether there are casualties.
4. If under way, reduce speed or stop.
5. Establish reason for list. See above.
6. Sound all tanks and compare with departure soundings.
7. Close all openings and vent pipes.
8. Prepare ballast and transfer pumps for possible remedial action
9. If lightening is required, all efforts should be made to wait for a barge or other ship to receive the cargo.
10. If oil has spilled, or it is necessary to jettison oil to maintain stability, make a report as per section 2.
11. If possible, take corrective action to rectify the situation with due consideration paid to vessel stress and stability Please refer to the "Approved Stability Booklet."

SECTION 4 • National and Local Coordination

1. The Master will advise the Coast Guard of nearest coastal state regarding any oil spill. Vessel Interest Contacts must also be notified of any such incident. See Appendix 2 for details.

2 The Master will be the point of contact on the vessel for coordinating shipboard activities with national and local authorities, act as the Company's on-scene representative, and will be responsible for overseeing the action of any salvage or spill contractors employed until such time as he/she has been FORMALLY relieved of these responsibilities by the Company.

3 The person or persons identified in the declaration shall be responsible for contacting and mobilizing the response organization(s). These organizations will coordinate and conduct the response. It is not normally practical for vessel's personnel to be directly involved in cleanup activities. Therefore, their primary role will be to provide as much information as necessary to assist the response and to cooperate with cleanup personnel. However, where no local response is forthcoming, or is delayed, the Master should consider the use of available shipboard materials to clean up or contain the spilled oil by, for example, using ship-stocked absorbent materials or utilizing mooring ropes or air-filled hoses as makeshift booms.

4. Dispersants or degreasers should not be used on oil spilled in the water as their use may contravene local regulations. However, dispersants may be used if they are approved by Environment Canada specifically for a given incident. Environment Canada will allow and approve the use of dispersants on a case by case basis only.

SECTION 5 • Ship to Ship Transfer Operations

Should a situation such as lightening due to damage require a ship to ship transfer of petroleum products, the Master must take into account but not limited to the following:

1. Proper lines of communication between ships including language and radio working frequency;
2. Current and forecasted weather conditions for the intended area of transfer;
3. The compatibility of the vessels involved with regards to size, freeboard, manifold location, list, trim, etc.
4. The elimination of all possible ignition sources;
5. Oil spill clean up equipment and procedures in place;
6. Contingency planning for emergency situations in place.
7. The need to notify and obtain the agreement of any responsible authority.
8. Site conditions such as available shelter, water depth, and available anchorage
9. Traffic density.

For detailed procedures concerning ship to ship transfer of petroleum products, please refer to ***The Ship to Ship Transfer Guide (Petroleum)****, published by The International Chamber of Shipping Oil Companies International Marine Forum, 3rd edition, 1997*

SECTION 6 • Safety Precautions For Bunkering Operations

SHIP	DRIVER / SITE SUPERVISOR
1. International code flag BRAVO to be flown while fueling. 2. Ensure the vessel is adequately secured and has no excessive list or trim. 3. Plug all deck scuppers (openings) to ensure effective containment of a minor spill from tank vents, sounding pipes, manifolds and hose connections. 4. Support hose as necessary to prevent excessive strain. 5. Ensure overboards and other unused fuel manifold valves are closed and secured shut. 6. Monitor hose and connections on the vessel. 7. Monitor tanks, manifolds and vents. 8. Direct fuel to the designated tanks and allow for topping off of tanks. Request reduction in flow rate, when required, and always when topping off tanks. 9. Ship is responsible for and must report any pollutant discharge from the vessel. 10. Provide cleanup materials for minor shipboard spills.	1. Inspect and monitor hose and connections ashore. 2. Monitor truck tank and metering unit if used. 3. Reduce flow rate when requested. 4. Report spills from truck and hoses (If supplier becomes aware of a spill he/she should verify whether or not the spill has been reported. If it has not been reported he/she should do so). 5. Provide clean up materials for minor shore spills. 6. Locate hoses to minimize possibility of damage. Use safety cones to alert traffic if necessary.

COMMON

1. All personnel involved in the fueling operation must not be impaired for the duration of the fueling period. Impairment includes but is not limited to impairment by alcohol, drugs or fatigue.
2. Observe no smoking or open flame requirement for the area.
3. Establish and maintain effective voice communication. Prearrange signals for:
   - A - Standby to start transfer
   - B - start transfer
   - C - slow down transfer
   - D - standby to stop transfer
   - E - stop transfer
   - F - emergency stop of transfer
   - G - emergency shutdown of transfer
4. When fueling at night provide sufficient lighting for the area.
5. In case of emergency take all necessary measures to rectify or minimize the effects of the emergency. Dispersants must not be used without the approval of Environment Canada.
6. In the event of a spill, fueling will stop until relevant authorities have been notified. Containment and clean up measures must be taken at this time. Fueling process will recommence only when the cause of the spill has been determined and rectified unless prohibited by a recognized authority. The restarting of the fueling process must not interfere with the immediate, effective and sustained response to the spill incident.

SECTION 7 • Additional Information (Non-Mandatory)

This section provides for additional information that local authorities, insurance underwriters, or Vessel Management may wish to include, but is not mandatory. (Regulation 37, Annex I, Marpol 73/78)

MEDIA INFORMATION

In the event of an oil spill or other related casualty, the Master is to direct any Coastal Radio station being worked that inquiries from any of the various media nodes are to be directed to the Vessel Management, who will handle such incidents shore-side. This will enable the Master to concentrate on the matter at hand.

PLAN REVIEW

This plan is to be reviewed at regular intervals by the Vessel Management and Master such that the information contained herein is current. Changes should be incorporated in the plan as and when they occur and the changes noted and by whom. Reviews should be conducted annually to reflect changes in local laws or policies, contact names or numbers, vessel characteristics, or company policy

Reviews should also be conducted after any use of the plan in response to an incident, in order to evaluate its effectiveness and make any modifications deemed prudent at that time. Any changes or revisions to the mandatory sections of this manual are to be resubmitted and approved by Transport Canada Marine Safety

COMPANY POLICY

The Master is responsible for maintaining the vessel's plans and technical information, in addition to the drawings contained in this plan, in an orderly and readily accessible fashion. The Master is to satisfy himself to the fact that the vessel's Chief Engineer complies in similar fashion as regards to plans and technical information in his possession.

DIAGRAMS AND DRAWINGS

Should the Master or Chief Engineer discover that crucial plans or manuals covering the operation of essential parts of the vessel are not on board, they are to request the company's head office in writing, to supply such plans and manuals.

RECORD KEEPING

As stated elsewhere in this plan, the Master shall use every effort to retain all records of a pollution incident and responses thereto, for later review by the company's technical department in conjunction with the crew. Such record keeping should include actual samples of oil spilled.

ONBOARD SPILL RESPONSE EQUIPMENT

Anchors, Buoys, Booms, Collapsible Tanks, Oil skimmer and Power pack with 100 feet of Hydraulic Hose, Air driven pump, Two 225 liter spill kits containing absorbent pads, booms, absorbant granular, spark proof shovels, protective clothing, etc., are stored onboard the vessel in the EQUIPMENT ROOM, Starboard side, main deck and readily accessible by the crew in case of spill . It is the responsibility of the Chief Engineer to keep inventory and maintain an adequate stock of equipment

SECTION 8 • Oil Pollution Prevention Team

The master of the vessel is to appoint an Oil Pollution Prevention Team (OPPT) on board, to initiate recovery or cleanup procedures, and to secure the ship immediately if an incident occurs.

The following is an example which can be used by the Master to aid in designating members of the OPPT. Should changes to the team be made, please make a record in this section :

Master
Chief Officer
Chief Engineer

In the event of an emergency, the team should be called out immediately

The team should be given necessary training in the use of such equipment as oil absorbents that the vessel may carry All members of the OPPT should be aware of their duties should an oil spill occur

Instructions to the Oil Pollution Prevention Team

8.1 Master

- In overall charge.
- Informs terminal authorities or coastal authorities of incident.
- Informs the local agent and requests agent to inform the local underwriter's representative.
- Advises the company's head office of the situation Keeps everyone updated at regular intervals and advises of any changes in status of the emergency.
- Keeps log of all events and progress of actions

8.2 Chief Officer

- In charge of deck / cargo operations.
- In charge of lifeboats if required.
- Keeps the Master informed and updated on the situation and of the results of steps taken to contain any spills and limit outflow.
- Insures all openings in the deck and superstructure are closed to limit vapour entry

8.3 Chief Engineer

- In charge of bunkering operations.
- Organizes distribution of oil spill detergents if required.
- Stops bunkering operations if applicable.
- Stops pumps and any unnecessary pieces of machinery.

Other Personnel

Deck Officer on duty

- Alerts and informs Chief Officer / Chief Engineer on the situation.
- Mobilize off duty crew as necessary.

Engineer on duty

- Assists the Chief Engineer.
- Prepare for fire fighting
- Ensure sufficient power and water to deck.
- Organizes onboard clean up equipment.

Deck Officer off duty

- Under the direction of the Master, responsible for the reporting and record keeping of all events.

On duty Ratings

- Alerts the Officer on duty of any leakage.
- Position sorbent / clean up material to prevent any fluid escape

Off duty personnel

- Assist as required

APPENDIX 1 • Report Format and Content

The report should contain the following:

AA VESSEL NAME, CALL SIGN, FLAG

BB DATE & TIME (GMT) OF INCIDENT: 111935 meaning 11th of month at 7:35 pm

CC SHIPS POSITION: 2230N 0600E meaning 22 deg. 30 min. N, 6 deg. E

or

DD SHIPS POSITION BY TRUE BEARING (3 DIGITS) AND DISTANCE FROM CLEARLY IDENTIFIED LANDMARK.

EE TRUE COURSE (3 DIGITS)

FF SPEED IN KNOTS AND TENTHS OF A KNOT (3 DIGITS)

LL ROUTE INFORMATION - INTENDED TRACK

MM RADIO STATIONS AND FREQUENCIES GUARDED

NN TIME OF NEXT REPORT (same as in BB)

OO DRAFT (4 DIGITS - meters and centimeters)

PP TYPES AND QUANTITIES OF CARGO AND BUNKERS ON BOARD

QQ BRIEF DETAILS OF DAMAGE, LIMITATIONS ETC (must include condition of vessel and ability to transfer cargo, ballast, or fuel)

RR BRIEF DETAILS OF ACTUAL POLLUTION (oil type, estimate of quantity discharged, whether discharge continues, cause, estimate of slick movement)

SS WEATHER AND SEA CONDITIONS (wind force/direction, relevant tidal and/or current information)

TT NAME, ADDRESS, TELEX, FAX, TELEPHONE NUMBERS OF VESSEL OWNER OR REPRESENTATIVE

UU DETAILS OF LENGTH, BREADTH, TONNAGE, AND TYPE OF VESSEL

WW TOTAL NUMBER OF PERSONS ON BOARD

XX MISC. DETAILS (brief details of incident, actions taken, injuries, assistance required)

UNOFFICIAL OIL POLLUTION EMERGENCY REPORT BY FACSIMILE

Vessel Name Call Sign Flag

Date and Time of Event

Vessel Position (Latitude & Longitude, Bearing & Distance from Landmark)

Course Speed

Intended Track

Radio Station

Date and Time of Next Report

Type and Quantity of Oil On board

Brief Details of Damage

Brief Details of Pollution

Details of Weather & Sea Conditions (Wind Speed/Direction, Swell Height/Direction)

Names of Vessel's Owner

Vessel Size and Type

Any Other Additional Information as Determined by Master

APPENDIX 2 • Who to Contact

In accordance with the Canadian Pollutant Discharge Reporting Regulations, the Master or Owner of a ship must report, without delay, any discharge or anticipated discharge of a pollutant in Canadian waters or fishing zones, to a Pollution Prevention Officer (PPO) Reports must be made in the manner described in Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants, TP 9834, or "General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants" adopted by the IMO by Resolution A.851(20) These initial reports can be made to Marine Communication and Traffic Service (MCTS) or any other Canadian Coast Guard Radio Station (CGRS), on the frequencies listed in the publication, Radio Aids to Marine Navigation (RAMN)

In addition to the above process for reporting a spill from a vessel to a PPO through a CGRS or MCTS, the Canadian Coast Guard maintains a 24 hour Operations Center which can be contacted at:

Canadian Coast Guard Operations Center
344 Slater Street
Ottawa, Ontario
K1A 0N7

Tel: (613) 990-5600 Fax: (613) 995-4700 Tlx: (613) 053 3128

Alternatively, spills may be reported to the appropriate regional center or nearest Vessel Traffic Service Center:

Newfoundland

St. John's	Tel:	1-709-772-2083
		1-800-563-2444 (24 hr.)
	Fax:	1-709-772-5369
Placentia Bay	Tel:	1-709-227-2182
	Fax:	1-709-227-5637
Port Aux Basques	Tel:	1-709-695-2167
	Fax:	1-709-695-7784
Goose Bay	Tel:	1-709-896-2252
	Fax:	1-709-896-8455
St. Anthony	Tel:	1-709-454-3852
	Fax:	1-709-454-3716

Nunavut

Nordreg Canada	Tel:	1-867-979-5724
P.O Box 189	Fax:	1-867-979-2464
Iqaluit, NU		
X0A 0H0		

Nova Scotia

Halifax	Tel:	1-902-426-9750 (MCTS Operations)
		1-902-426-9738 (Officer in Charge)
	Fax:	1-702-426-4483
Sydney	Tel:	1-902-564-7751 (MCTS Operations)
		1-902-564-7752 (Officer in Charge)
	Fax:	1-702-564-7662

New Brunswick

Saint John	Tel:	1-506-636-4696 (MCTS Operations)
		1-506-636-4269 (Officer in Charge)
	Fax:	1-506-636-5000

Quebec

Quebec City	Tel:	1-418-648-4427 (MCTS Operations)
		1-418-648-7459 (Officer in Charge)
	Fax:	1-418-648-7244
Montreal	Tel:	1-450-928-4544 (MCTS Operations)
		1-450-928-4547 (Officer in Charge)
	Fax:	1-450-928-4547
Riviere-Au-Renard	Tel:	1-418-269-5686 (MCTS Operations)
		1-418-269-7718 (Officer in Charge)
	Fax:	1-418-269-5514

Greenland

Spill Notification Point	Tel:	+299-101111
Groenlands Kommando	Fax:	+299-10112
Maritime Rescue Coordination Center Gronnedal		
KK-3930 Gronnndell		

Competant National Authority	Tel:	+45-31 578310
National Agency of Environmental Protection		+45-86 123099 (24hr)
Strandgade 29	Fax:	+45-31 572449/+45-86 181140
DK- 1401 Copenhagen		

Note:

The following contacts have been included as they are within the expected range of operation of the Vessel Due to the nature of the Vessel's voyages and varied ports of call this list should not be considered exhaustive For this reason space has been included at the end of this section for addenda.

Within Canada, administrative inquiries related to pollution prevention, compliance and enforcement, vessel regulations, design and construction should be directed to:

Director General, Marine Safety
Transport Canada
Mailstop: AMS
330 Sparks Street
Ottawa, Ontario
K1A 0N5
Tel: (613) 998-0610 Fax: (613) 954-1032

Inquiries relating to pollution response should be directed to:

Director General, Rescue and Environmental Response
Canadian Coast Guard
344 Slater Street
Ottawa, Ontario
K1A 0N7

Tel: (613) 990-3110 Fax: (613) 996-8902

Additional Contact Information

Region	
Spill Notification Point	Contact Numbers

Region	
Spill Notification Point	Contact Numbers

Region	
Spill Notification Point	Contact Numbers

Region	
Spill Notification Point	Contact Numbers

VESSEL INTEREST CONTACTS

Vessel Management
Coastal Shipping Limited (Owners)
P. O. Box 300, Station C
Happy Valley-Goose Bay, NL
A0P 1C0
Canada
Ph: (709) 896-2421
Fax: (709) 896-5028

Vessel Operations
Coastal Shipping Limited
139 Water Street, Suite 502
St John's, NL
A1C 1B2
Canada
Ph: (709) 579-6127
Fax: (709) 579-8103

24 Hour Emergency Contact

(709) 896-5036
(709) 896-9348

General Manager	Dennis White	(709) 896-2421 work (709) 896-1404 cell (709) 896-2870 home
Engineering Superintendent	Jim Babij	(709) 579-6127 work (709) 727-5065 cell (709) 576-0160 home
	Kevin Brewer	(709) 579-6127 work (709) 682-0826 cell (709) 227 2600 home
Designated Person Ashore	Philip Martin	(709) 579-6127 work (709) 727-4242 cell (709) 722-3781 home

Eastern Canada Response Corporation
Required Call Out Information

ECRC EMERGENCY NUMBER: 613 930-9690

CONTRACT NUMBER: _____

PROBLEM: _____

CURRENT STATUS: _____

CONDITIONS AT SPILL SITE: _____

THIS IS AN *(CIRCLE ONE)* EMERGENCY EXERCISE ALERT

R.O. RESPONSE REQUESTED BY *(PERSON S NAME)* _____

OF *(MEMBER COMPANY NAME)* _____ ON BEHALF OF

THE SHIP / FACILITY *(NAME)* _____

THE PRODUCT IS _____

SPILL VOLUME IS *(CIRCLE ONE)* _____ GAL / Litres / BBL /Tonnes

TOTAL VOLUME AT RISK IS *(STATE UNITS)* _____

LOCATED AT LATITUDE _____ LONGITUDE _____

OR GEOGRAPHIC LOCATION NAME IS _____

OR IT IS LOCATED _____km / miles (N / NE / E / SE / S / SW / W / NW) OF

(CITY NAME) _____

THE CLOSEST AIRPORT IS _____

I CAN BE REACHED AT THE FOLLOWING NUMBERS:

TEL: _____ CELL: _____ PAGER: _____

APPENDIX 3 • Vessel Stress and Stability Calculations

VOYAGE PARTICULARS

Departure Port

Departure Date

Time (GMT)

VESSEL CONDITION IMMEDIATELY BEFORE CASUALTY

Mean Draft Forward

Mean Draft Aft

KG(solid)

KG(fluid)

LCG of Vessel

#	COMPARTMENT	S.G.	TONNES

DATA RELATING TO VESSEL AFTER CASUALTY

Nature of Casualty: Collision / Grounding (Fixed / Free) / Fire
Explosion / Heavy Weather / Other

Casualty Date Report Time (GMT)

Geographical Location of Casualty: LAT
LONG

Conditions at Site at Time of Casualty Report

Weather

Sea State

Tidal State

Tidal Range

Forecast

S.G. of Surrounding Water

Position of Vessel relative to Wind, Waves, Tides, etc

Drafts Measured Port and Starboard:

Drafts at Fwd Marks/F.P. (Best Estimate)
Drafts at Aft Marks/A.P. (Best Estimate)
Drafts at Midships (Best Estimate)
Angle of Heel (Port / Starboard)

Best Estimate of Depth of Water (for Grounding)

Location	Port	Starboard

REPORTED DAMAGE

Details of each damaged compartment known to be open to the sea, including those damaged above the present waterline

Compartment	Estimated Cargo Weight (tonnes)	Permeability of Cargo (%)	Comments

Extent and location of structural damage in way of above compartments. (Attach sketch)

Extent of additional damage to pipes, valves, hatches, doors, etc and list of compartments which may be subject to progressive flooding as a result.

Soundings from or estimates of amounts of flood water in spaces not directly open to sea.

PROPOSED ACTION AND REQUIREMENTS

Any other relevant information, details of action being undertaken or proposed course of action, salvage operation etc.

APPENDIX 4 • Flowcharts and Checklists

4A . OPERATIONAL SPILL CHECKLISTS

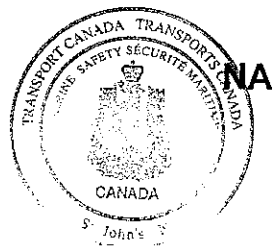
OPERATIONAL SPILL CHECKLIST

HULL LEAKAGE

In the event of a hull leakage, the MASTER must ensure that the following actions are taken:

Sound Emergency Alarm and	☐
Mobilize Oil Pollution Prevention Team	
Stop all transfers or bunkering operations	☐
Identify the damage and REPORT to proper	☐
authorities immediately as per Section 2 of this plan	
Absorb spill with any absorbent	☐
materials on hand and dispose of oil-soaked materials in an appropriate container	
Contain any spill vapours from entering	☐
Engine room or Accommodations	
Drain or transfer oil into empty or	☐
slack tanks if possible or arrange for transfer to shore	
If oil is in bilges, pump through	☐
oil/water separator	

✓ YES X NO NA Not Applicable



OPERATIONAL SPILL CHECKLIST

PIPE LEAKAGE

In the event of a pipe leakage, the CHIEF ENGINEER must ensure that the following actions are taken:

Stop Oil Flow and close manifold and other valves. ☐

Sound Emergency Alarm and Mobilize Oil Pollution Prevention Team ☐

Place drain buckets under overflow pipes to contain possible ☐

Locate the source and drain affected section into an available empty or slack tank. Repair. ☐

Contain any spill vapours from entering Engine room or Accommodations ☐

Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container ☐

If oil is overboard, REPORT to proper authorities immediately as per section 2 of this plan ☐

✓ YES X NO NA Not Applicable

TRANSPORT CANADA TRANSPORTS CANADA MARINE SAFETY SÉCURITÉ MARITIME St. John's

4B. CASUALTY SPILL CHECKLISTS

CASUALTY SPILL CHECKLIST

HULL FAILURE including Ice Damage

In the event of hull failure (including ice damage), the MASTER must ensure that the following actions are taken:

Sound Emergency Alarm and Muster Crew	☐
Mobilize the Oil Pollution Prevention Team	☐
Reduce Speed or Stop to Mimimize Hull Stress	☐
Assess Immediate Danger of Sinking/Capsizing	☐
Initiate Damage Control Measures with Due Care Paid to Vessel Strength and Stability	☐
REPORT to Proper Authorities Immediately as per Section 2 of this Plan	☐
Is Abandonment Necessary? **If YES then Ensure Every Effort is Made to Manoeuvre Survival Craft Upwind Of Any Oil Spill**	☐

✓ YES X NO NA Not Applicable

CASUALTY SPILL CHECKLIST

GROUNDING

In the event of a grounding incident, the MASTER must ensure that the following actions are taken:

Sound Emergency Alarm and Muster Crew	☐
Mobilize the Oil Pollution Prevention Team	☐
Eliminate All Avoidable Sources of Ignition and Ban Smoking on Board	☐
Identify Damage by Visual Inspection	☐
Take Soundings to Determine Nature and Gradient of Seabed	☐
Check Tidal Ranges at Grounding Site	☐
Evaluate Tidal Current at Grounding Site	☐
Take Sounding of All Tanks on Shell and Compare with Departure Soundings to Determine Probability and/or Quantity of Oil Released	☐
REPORT to Proper Authorities Immediately as per Section 2 of this Plan	☐
Determine Best Course of Action: Refloat or Remain Aground	☐
If Remaining Aground is Best, Take Additional Measures to Prevent Vessel Movement and Reduce Longitudinal Stress as per Section 3.1	☐

✓ YES X NO NA Not Applicable

CASUALTY SPILL CHECKLIST

FIRE / EXPLOSION

In the event of a fire or explosion, the FIRE CONTROL PARTY CHIEF must ensure that the following actions are taken:

Sound Emergency Alarm and Muster Crew ☐

Mobilize the Oil Pollution Prevention Team ☐

Determine Extent of Damage and Damage

☐

Control Measures to be Taken

Determine Whether there are Casualties ☐

Request Assistance as Necessary ☐

Assess Possibility of Oil Leakage ☐

REPORT to Proper Authorities Immediately as per Section 2 of this Plan ☐

Is Abandonment Necessary? ☐

If YES then Ensure Every Effort is Made to Manoeuvre Survival Craft Upwind Of Any Oil Spill

✓ YES X NO NA Not Applicable

CASUALTY SPILL CHECKLIST

COLLISION

In the event of a collision, the MASTER must ensure that the following actions are taken:

Sound Emergency Alarm and Muster Crew	☐
Determine Whether there are Casualties	☐
Mobilize the Oil Pollution Prevention Team	☐
Determine Whether Separation of Vessels May Cause or Increase Spillage of Oil	☐
Are Any Oil Tanks Penetrated? **If YES then Isolate Penetrated Tanks and/or Transfer Oil to Slack or Empty Tanks with Due Care Paid to Vessel Stress and Stability**	☐
REPORT to Proper Authorities Immediately as per Section 2 of this Plan	☐

✓ YES X NO NA Not Applicable

CASUALTY SPILL CHECKLIST

EXCESSIVE LIST

In the event of excessive listing, the MASTER must ensure that the following actions are taken:

Sound Emergency Alarm and Muster Crew ☐

Stop any Cargo, Bunkering or Ballasting Operations in Progress ☐

Determine Whether there are Casualties ☐

If Under Way then Reduce Speed or Stop ☐

Establish Reason for Excessive List ☐

- ☐ ***Failure of Hull Plating?***
- ☐ ***Failure of Internal Bulkhead between Compartments?***
- ☐ ***Shift of Cargo?***
- ☐ ***Damage from Grounding or Collision?***
- ☐ ***Incorrect Operational Procedures?***
- ☐ ***Flooding in Engine Room with Resultant Free Surface?***
- ☐ ***Other?*** _____

Sound All Tanks and Compare with Departure Soundings ☐

REPORT to Proper Authorities Immediately as per Section 2 of this Plan ☐

Initiate Corrective Action with Due Care Paid to Vessel Strength and Stability ☐

Is Abandonment Necessary? ☐

If YES then Ensure Every Effort is Made to Manoeuvre Survival Craft Upwind Of Any Oil Spill

✓ YES X NO NA Not Applicable

4C. FLOW CHARTS

SUMMARY FLOWCHART

Incident involving Discharge of Oil (Probable or Actual)

Assess Nature of Incident

Mobilize Oil Pollution Team

Sound Alarm and Muster Crew

Identify Source of Discharge

Spill Assessment

REPORTING

- By Master and/or Designated Crew Member

When to Report

- all probable and actual spills

How to Report

- by quickest possible means to Coastal Radio Station, Designated Ship Movement Reporting Station or Rescue Coordination Centre
- by quickest possible means to local authorities

Who to Contact

- nearest coastal state
- harbour and terminal operators (in port)
- Vessel Management

What to Report

- Initial Report - Res.A 851(20)
- regular Follow Up Reports
- characteristics of spilled oil
- cargo, ballast, and bunkers
- weather and sea conditions
- slick movement
- assistance required (e.g. salvage, lightening, equipment, personnel, chemicals)
- assistance NOT required

ACTIONS TO CONTROL DISCHARGE

- measures to minimize the escpae of oil and threat to the marine environment

NAVIGATIONAL MEASURES

- alter course, speed, or position
- change of list and/or trim
- anchoring
- setting aground
- initiate towage
- assess safe haven requirements
- weather, tide, swell forecasts
- slick monitoring
- recording of events & communications

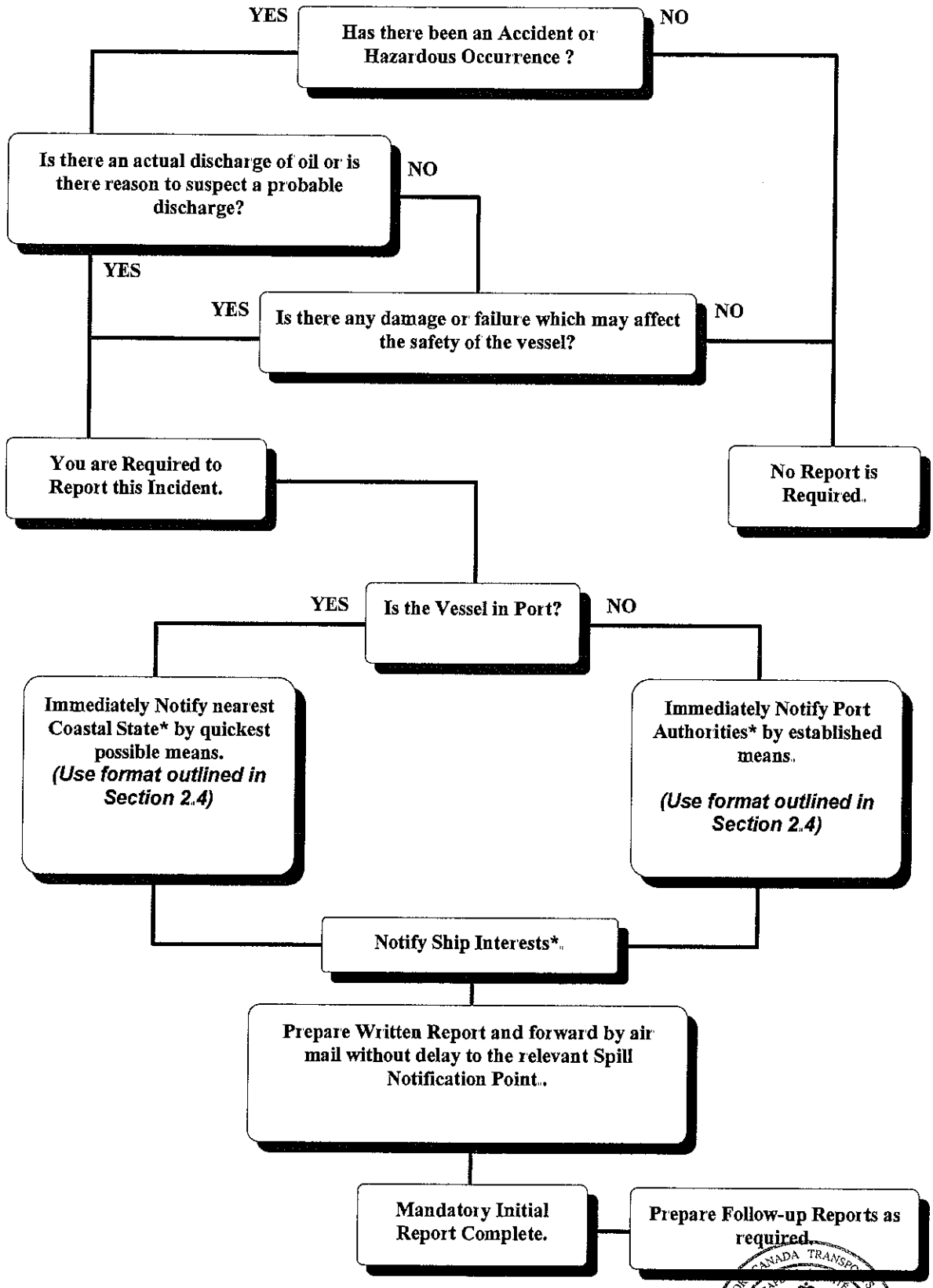
SEAMANSHIP MEASURES

- safety assessment and precautions
- advice on priority countermeasures
- damage stability and stress considerations
- ballast / deballasting
- internal cargo transfer operations
- emergency ship-to- ship transfers of cargo and/or bunkers
- set up shipboard responses for repairs, firefighting, cleanup operations, etc.

STEPS TO INITIATE EXTERNAL RESPONSE

- refer to coastal Port State listings for local help
- refer to Vessel Interests contact list
- external clean-up resources required
- continued monitoring of activities

REPORTING REQUIREMENTS (as per Section 2)



** contact information is located in Appendix 2.*

APPENDIX 5 • Relevant Drawings

FOLLOWING ARE DRAWINGS RELEVANT TO THIS VESSEL

General Arrangement
Tank Capacity Plan
Arrangement of Cargo Tank Cleaning / Ballast Pumping System
Arrangement of Cargo / Stripping System
Fuel Oil Service System
Fuel Oil Transfer & Purifying System
Fuel Oil & Diesel Oil Filling System
Deck Scupper System

Examined under the provisions of Annex 1 of MARPOL 73/78 and the Canadian Oil Pollution Prevention Regulations (SOR/93-3) and found satisfactory.

TRANSPORT CANADA TRANSPORTS CANADA MARINE SAFETY SÉCURITÉ MARITIME CANADA St. John's, NF

W. S. Atkinson, Pollution Prevention Officer

SHIPBOARD OIL POLLUTION EMERGENCY PLAN

for

MT Tuvaq

11290 Gross Tons Register of St. John's, NL

PREPARED BY: ***Poseidon Marine Consultants Limited***
391 Stavanger Drive
St. John's NL A1A 5G1
TELEPHONE: (709) 739-4321
TELEFAX: (709) 739-4421

PREPARED FOR: ***Coastal Shipping***
Suite 502,
139 Water St. (Fortis Bldg.)
St. John's NL
A1C 1B2

Issued: April 2003
Job Number: 03-009

Change Number

Official Stamp Examined by Date

Change Number

Official Stamp Examined by Date

Change Number

Official Stamp Examined by Date

RECORD OF CHANGES

Amendment Number	Section and Page Affected	Date Entered	Remarks	Name and Position of Person Making Entry

RECORD OF OIL POLLUTION EMERGENCY DRILLS

DATE	TYPE OF OIL POLLUTION DRILL	LOCATION	REMARKS MASTER'S SIGNATURE

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APPENDICES

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A2	Who to Contact
A3	Vessel Stress and Stability Calculations
A4	Relevant Drawings

SHIP'S PARTICULARS

PRINCIPAL PARTICULARS

Vessel Name:	IUVAQ ex. Tiira
Flag / Port of Registry:	Canada / St. John's, NL
Call Sign:	OIHO
DNV Number:	10520
IMO Number:	7421966
Gross Registered Tonnage:	11290
Net Registered Tonnage:	5941
Length, Overall:	164.2 m
Length, B.P.:	150 m
Breadth, Max at Deck:	22.2 m
Depth:	12.00 m
Design Draft (Loadline Summer):	9.5 m
Built:	Werft Nobiskrug GMBH. Rendisburg, Germany
Year of Build:	1977
Complement:	21
Propulsion Power:	2 Wartsila 6L46B engines totaling 15368 BHP

CARGO PARTICULARS

Tank Capacities:	Water Ballast -	6247.30 m^3 @100%
	Heavy Fuel Oil -	1532.90 m^3
	Diesel Oil -	410.40 m^3
	Cargo-	16542.61 m^3 @100%
	Slops -	664.20 m^3 @ 100%
Cargo Pumps:	Deep well hydraulically Driven Frank Mohn	
Cargo Manifolds:	Four (4) 250 mm ID cargo lines per side	

INTRODUCTION

1. This Plan is written in accordance with the Canadian Oil Pollution Prevention Regulations and also in accordance with the requirements of regulation 26 of annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 thereto.

2. The purpose of the Plan is to provide guidance to on board operating personnel the vessel with respect to the steps to be taken when a pollution incident has or is likely to occur.

3. The Plan contains all information and operational instructions required by the guidelines. The appendices contain names, telephone, telex numbers, etc. of all contacts referenced in the Plan, as well as other reference material.

4. This Plan has been examined by the Canadian Board of Steamship Inspection, (hereinafter referred to as "the Board") and, except as provided below, no alteration or revision shall be made to any part of it without prior approval of the Board.

5. Changes to Section 5 and the appendices will not be required to be approved by the Board. The appendices should be maintained up to date by the Owners, Operators, and Managers.

6. For the purposes of this Plan, the Master is taken to be that person who is a member of the vessel's operational personnel and to which is given senior responsibility for the vessel and any circumstances pertaining thereto.

7. Before entering a port of call, the Master should be aware of local emergency response proceedures and organisations and have up to date contact information readily available.

SECTION 1 • Preamble

1.1 PURPOSE AND INTENT OF THIS PLAN

This Shipboard Oil Pollution Emergency Plan is intended to assist the vessel's officers, crew and management personnel in dealing with an unexpected discharge of oil. Its primary purpose is to set in motion the necessary actions to stop or minimize the discharge and to mitigate its effects.

1.2 SUPPORT BY VESSEL'S MANAGEMENT

In accordance with the plans and policies of the vessel's management organization, management personnel will support the vessel's crew with additional resources, i.e. personnel and materials, as the situation warrants.

1.3 PERSONNEL TRAINING AND EXERCISES

1. ***It is the responsibility of the Vessel's Management to ensure that, through training and exercises, all officers and crew are capable of confidently and safely carrying out their assigned duties.***

   Officers responsible for maintaining the trim of the vessel and ordering transfers of ballast and/or cargo should be fully aware of the consequences of their actions and are expected to comply with the regulations and any documentation aboard the vessel which prescribes conditions of trim and stability , e.g. "Approved Stability Booklet".

   Officers and crew responsible for cargo and or bunkering operations should also be fully aware of the consequences of their actions and are expected to comply with the regulations and any documentation aboard the vessel which prescribes methods of operation.

   Officers and crew assigned additional responsibilities for fire fighting or emergency response should have appropriate training as per the regulations and should participate in specific drills and exercises to maintain their abilities and be fully familiar with appropriate vessel systems.

2. ***The vessel's management and operating personnel should become familiar with this document and its format so that should an emergency occur, the response of the officers and crew and the vessel's management personnel will be carried out in a structured, logical and timely manner.***

In order to ensure that the crew and management are completely familiar with this document and its prescribed procedures, training should be offered and oil pollution emergency drills should be carried out regularly.

A blank "Record of Oil Pollution Emergency Drills" form is provided at the beginning of this Plan to document the dates and results of such training exercises. This documentation is to be in addition to normal record keeping and log book entries.

3. ***All crew members should become familiar with the fundamentals of the ship's mechanical and electrical systems in order to be more confident and capable during an emergency.***

It is the responsibility of the vessel's senior officers to ensure that engineering fundamentals are taught to the crew and that the crew remain familiar with them through regular drills. Drawings detailing the various mechanical and electrical systems are carried aboard the vessel. Any drawing (e.g. "Natural Vents", "Engine Room Ventilation", "One Line Electrical Diagram", "Fuel Oil Transfer Diagram") can be obtained for study from the Engineering Document Library located in the Chief Engineer's Office. These drawings are thoroughly catalogued and easily referenced.

In order to ensure a fundamental familiarity with the various engineering systems, oil pollution emergency drills should include such exercises as:

- isolating and sealing off accommodations and/or machinery spaces using louvres and fan shut-offs to prevent ingress of dangerous fumes; and
- isolating, at the distribution panels, various electrical circuits, e.g. lighting, panel feeds, in order to reduce or eliminate sources of ignition in areas of risk.

1.4 PLAN FORMAT

This plan is divided into five sections as follows:

Section 1 provides an introduction for this document and highlights some important considerations regarding the spillage of oil at sea.

Section 2 outlines the procedure and requirements for making a report to authorities in the event of a discharge or probable discharge of oil.

Section 4 outlines procedures for national and local coordination of response efforts.

Section 5 outlines procedures for ship to ship transfer operations

Section 6 deals with non-mandatory provisions such as oil spill response materials onboard, media information, and plan review.

Following the main body of this plan are appendices which provide contact information and/or useful forms. Appendix 1 is an example of an unofficial facsimile report, the use of which is outlined in Section 2. Appendix 2 provides contact information for coastal authorities and ship interests. Appendix 3 is a blank calculation form for vessel stress and stability which can be filled out by an officer of the vessel and sent to the vessel owners for calculation. The use of this calculation form is described in Section 3. Appendix 4 contains relevant ship's drawings.

1.5 OIL DISCHARGE MONITORING SYSTEM

In accordance with MARPOL 73/78 Annex 1 Regulation 16 this ship is fitted with an Oilcon MK4 monitoring system by STC International Marine Limited which gives an impulse when any of the following occurs

- Flow rate of discharge is greater than ordered
- Impurities exceed 15ppm
- Total of maximum oil output limit is reached

IMPORTANT:

1. ANY OIL SPILLAGE SHOULD BE TREATED AS AN EMERGENCY.

2. IN RESPONDING TO AN OIL SPILLAGE, THE MASTER'S PRIORITY WILL BE TO ENSURE THE SAFETY OF THE CREW AND OF THE VESSEL, AND TO TAKE ACTION TO PREVENT ESCALATION OF THE INCIDENT. IMMEDIATE CONSIDERATION SHOULD BE GIVEN TO MEASURES AIMED AT PREVENTING FIRE AND EXPLOSION.

SECTION 2 • Reporting Requirements

Coast guard of nearest coastal State (see Appendix 2) is to be notified whenever there is:

a) **an actual discharge of oil**

b) **reason to suspect a probable discharge of oil due to fire, grounding, list, loss of power, collision, flooding, explosion, structural failure, etc.**

c) **any damage or failure which may affect the safety of the vessel, such as failure or breakdown of the electrical generating system, or essential shipborne navigational aids.**

2.1 DISCHARGE OF OIL

When reporting a discharge of oil, the Master is to provide all relevant information (as per section 2.4) to:

a) Coast Guard of nearest coastal State, or

b) Port Authorities, and also to

c) Vessel Interest Contacts.

A discharge of oil, for the purposes of this plan, refers to:

a) a discharge of oil, resulting from damage to the vessel or its equipment, or for the purpose of securing the safety of a vessel or saving life at sea; or

b) a discharge during the operation of the vessel of oil in excess of the quantity or instantaneous rate permitted under the present Convention.

2.2 PROBABLE DISCHARGE OF OIL

The Master must use good judgment to assess any circumstance which might be cause for probable discharge of oil. When making such judgment the following factors must be taken into account:

a) the nature of the damage, failure, or breakdown of the vessel, machinery, or equipment;

b) vessel location and proximity to land or other navigational hazards;

c) weather, tide, current, and sea state;

d) traffic density; and

e) morale, health and ability of crew onboard to deal with situation.

2.3 DAMAGES AND/OR FAILURES

The Master must report any damage which may affect the safety of the vessel: collision, fire, grounding, explosion, cargo shifting, list, etc. The Master must also report any failure or breakdown of essential machinery which results in impairment of the safety of navigation: i.e. electrical generating system or essential vessel-borne navigational aids.

2.4 INITIAL REPORT

An initial report is to be made by radio communication without delay to one of the following Canadian radio ship reporting stations; Canadian Coast Guard Radio Station, Canadian Vessel Traffic Service Centre, St. Lawrence Seaway Authority marine radio station, or Canadian harbour radio station. The report is to be made following the format given below. Where the report cannot be communicated by radio, it shall be communicated by telephone to the local Canadian radio ship reporting station or to the Canadian Coast Guard Operations Centre in Ottawa. Contact information is provided in Appendix 2.

FOLLOW-UP REPORTS

Follow-up reports should be made at regular intervals to keep the coastal State and other concerned parties informed of developments including, but not limited to, change of course or position, change in quantity, rate or probability of oil discharge, injuries or casualties, or effects of actions taken to control discharge or assure safety of the vessel and crew. Follow-up reports should be made in the same format as the initial report.

WRITTEN REPORT

Within 24 hours of the incident, or as soon as possible thereafter, a written report on the incident, including a statement as to its probable cause, shall be forwarded by air mail without delay to the Chief, Marine Casualty Investigations, Department of Transport, Ottawa.

UNOFFICIAL FACSIMILE REPORT

An unofficial facsimile report is included in Appendix 1. This may be sent to any concerned parties but is not consistent with IMO Resolution A 648(16) for reporting of incidents involving dangerous goods, harmful substances and/or marine pollutants, and therefore cannot constitute an official report to the coastal State.

FORMAT AND INFORMATION REQUIRED FOR OFFICIAL REPORT

AA VESSEL NAME, CALL SIGN, FLAG

BB DATE AND TIME (GMT) OF INCIDENT: 111935 meaning 11th of month at 7:35 pm.

CC SHIPS POSITION: 2230N 0600E meaning 22 deg. 30 min. N, 6 deg. E

or

DD SHIPS POSITION BY TRUE BEARING (3 DIGITS) AND DISTANCE FROM CLEARLY IDENTIFIED LANDMARK.

EE TRUE COURSE (3 DIGITS)

FF SPEED IN KNOTS AND TENTHS OF A KNOT (3 DIGITS)

LL ROUTE INFORMATION - INTENDED TRACK

MM RADIO STATIONS AND FREQUENCIES GUARDED

NN TIME OF NEXT REPORT (same as in BB)

OO DRAFT (4 DIGITS - meters and centimeters)

PP TYPES AND QUANTITIES OF CARGO AND BUNKERS ON BOARD

QQ BRIEF DETAILS OF DAMAGE, LIMITATIONS ETC. (must include condition of vessel and ability to transfer cargo, ballast, or fuel)

RR BRIEF DETAILS OF ACTUAL POLLUTION (oil type, estimate of quantity discharged, whether discharge continues, cause, estimate of slick movement)

SS WEATHER AND SEA CONDITIONS (wind force/direction, relevant tidal and/or current information)

TT NAME, ADDRESS, TELEX, FAX, TELEPHONE NUMBERS OF VESSEL OWNER OR REPRESENTATIVE

UU DETAILS OF LENGTH, BREADTH, TONNAGE, AND TYPE OF VESSEL

WW TOTAL NUMBER OF PERSONS ON BOARD

XX MISC. DETAILS (This includes brief details of incident, actions taken, injuries sustained and assistance required. If no outside assistance is required, then this should be clearly stated.)

2.5 WHO TO CONTACT

Contact information for coastal State and other concerned parties (port contacts, vessel interest contacts) is located in Appendix 2.

2.6 ARRANGED RESPONSE ORGANIZATION(S)

The vessel, in accordance with the regulations, has onboard a **declaration** that the vessel's management has, in accordance with 660.2(2) of the Canada Shipping Act, entered into an arrangement with a response organization to which a certificate of designation has been issued pursuant to subsection 660 4(1) in respect of the quantity of oil that is carried both as fuel and cargo on board the vessel.

The person or persons identified in the **declaration** shall be responsible for contacting and mobilizing the response organization.

SECTION 3 • Steps to Control Discharge

In cases of small spills on deck, the vessel's crew should take whatever actions are necessary to prevent oil from escaping over the side. Once the spill is contained on deck, the crew will need to take action to clean up the oil. SPILLED OIL SHOULD NOT BE WASHED OVER THE SIDE. Once oil is in the water, the crew's ability to respond in a practical manner is greatly reduced.

3.1 OPERATIONAL SPILLS

In the event of an operational spill which occurs during bunkering or cargo operations, it is important that the bunkering party terminate any and all bunkering operations and close all manifold valves.

Before closing any manifold valves, the bunkering / cargo party must immediately inform the terminal / loading master so that they may take action to eliminate the possibility of over-pressurization of the shore side transfer components.

After dealing with the cause of the spill, it may be necessary to obtain permission from local authorities and/or the terminal before resuming bunkering or cargo operations.

If the possibility of fire or explosion exists, nonessential air intakes to accommodations and machinery spaces should be closed and all sources of sources of ignition should be eliminated. See Section 1.3.3 of this Plan.

In accordance with Section 1.3.3 of this Plan, all members of the vessel's crew should be familiar with the fundamentals of the ship's vital systems including the ventilation and electrical systems. Crew members should be able to: isolate the accommodation and/or machinery spaces using the louvres and fan shut-offs; and, from the distribution panels, isolate electrical circuits in areas of risk. Please refer to Section 1.3.3 of this Plan for additional details.

Care must be taken to consider stability and stress when taking action to mitigate the spillage of oil. Internal transfers should be undertaken only with a full appreciation of the likely impact on the vessel's overall stress and stability. Please refer to the "Approved Stability Booklet" carried on board.

1. PIPE LEAKAGE

In the event of a oil pipe leakage, the Chief Engineer must ensure that the following actions are taken:

a) Stop oil flow and close manifold and other valves.

b) Sound Emergency Alarm and initiate emergency response procedures as posted aboard the vessel.

c) Locate the source and repair if possible.

d) Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container.

e) Drain affected section of pipe into empty or slack tank if possible.

f) If oil is overboard, report to proper authorities immediately (as per section 2 of this plan).

g) If oil is in bilges, pump through oil/water separator as per approved procedures.

2. TANK OVERFLOW

In the event of an oil tank overflow, the Chief Engineer must ensure that the following actions are taken:

a) Stop oil flow and close manifold and other valves.

b) Sound Emergency Alarm and initiate emergency response procedures as posted aboard the vessel.

c) Place drain buckets under overflow pipes to contain possible spills.

d) Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container.

e) Drain or transfer oil to slack or empty tanks if possible with due consideration paid to vessel stability. If no slack or empty tanks are available then oil may be pumped back ashore through delivery line, having first gained permission to do so.

f) If oil is overboard, report to proper authorities immediately (as per section 2 of this plan).

g) If oil is in bilges, pump through oil/water separator as per approved procedures.

3. HULL LEAKAGE

If oil is noticed on the water near the vessel during normal operations and cannot be accounted for, the possibility of hull leakage should be suspected.

In the event of a hull leakage, the Master must ensure that the following actions are taken:

a) Sound Emergency Alarm and initiate emergency response procedures as posted aboard the vessel.

b) Stop any and all transfer or bunkering operations.

c) Identify damage and report to proper authorities immediately (as per section 2 of this plan).

d) If possible, contain spill using materials on hand

e) Transfer fuel away from suspected leaks to empty or slack tanks if possible or to a ballast tank if necessary. If in port, arrangements can be made to pump oil ashore to tank or truck. Due consideration is to be paid to vessel stress and stability.

f) Locate and repair if possible.

g) Absorb spill with any absorbent materials on hand and dispose of oil-soaked materials in an appropriate container.

3.2 SPILLS RESULTING FROM CASUALTIES

ALL CASUALTIES ARE TO BE REPORTED BY THE MASTER AS PER SECTION 2.

The Master's priority, when responding to a casualty, will be to ensure the safety of personnel and the vessel and to take action to prevent escalation of the incident.

In casualties involving spills, immediate consideration should be given to measures aimed at preventing fire and explosion, such as altering course so that the vessel is upwind of the slick, shutting down nonessential air intakes, etc.
If the vessel is aground, and therefore cannot maneuver, all possible sources of ignition should be eliminated and action taken to prevent flammable vapors entering accommodation and engine room spaces. Please refer to Section 1.3.3.

In accordance with Section 1.3.3 of this Plan, all members of the vessel's crew should be familiar with the fundamentals of the ship's vital systems including the ventilation and electrical systems. Crew members should be able to isolate the accommodation and/or machinery spaces using the louvres and fan shut-offs; and, from the distribution panels, isolate electrical circuits in areas of risk. Please refer to Section 1.3.3 of this Plan for additional details.

Prior to considering remedial action, the Master will need to obtain detailed information on the damage sustained by the vessel. A visual inspection should be carried out and all bunker tanks and other compartments sounded. However, due regard should be paid to the indiscriminate opening of ullage plugs or sighting ports, especially when the vessel is aground, as loss of buoyancy could result. The Master shall also ensure that all covers, doors, vents, and hatches to any and all holds, ballast tanks, and fuel tanks are sealed tightly and remain sealed to prevent possible loss of buoyancy. Having assessed the damage sustained by the vessel, the Master will be in a position to decide what action should be taken to prevent or minimize further spillage.

Great care must be taken to consider stability and stress when taking action to mitigate the spillage of oil or to free the vessel if aground. Internal transfers should be undertaken only with a full appreciation of the likely impact on the vessel's overall stress and stability. Please refer to the "Approved Stability Booklet" carried on board.

Should the damage sustained be extensive, the impact of internal transfers on stress and stability may be impossible for the vessel's personnel to assess. In such cases, Appendix 3 of this plan is to be filled out as completely as possible and forwarded to the Owner's to ensure the appropriate calculations can be done.

When it is possible to maneuver, the Master, in conjunction with the proper shore authorities, may consider moving the vessel to a more suitable location in order, for example, to facilitate emergency repair work or lightening operations, or to reduce the threat posed to any particularly sensitive shoreline areas. Such maneuvering may be subject to coastal state jurisdiction.

1. GROUNDING

If the vessel grounds, the Master must ensure that the following actions are taken:

a) Sound Emergency Alarm and muster crew.

b) Eliminate all avoidable sources of ignition and ban smoking on board. Action must be taken to prevent inflammable vapors from entering accommodation and machinery spaces. See Section 1.3.3.

c) Identify damage by means of a visual inspection.

d) Take soundings around vessel to determine nature and gradient of seabed.

e) Check differences in tidal ranges at grounding site.

f) Evaluate tidal current in grounding area.

g) Take soundings of all tanks on shell and compare with departure soundings.

h) Determine probability and/or quantity of oil released.

i) If oil release is determined or is probable, this is to be included in the casualty report.

At this point, determine risk of additional damage to vessel by attempting to refloat. If remaining aground is determined to be less of a risk then:

a) Use anchors to prevent vessel movement.

b) Take in ballast in empty tanks, with due consideration paid to stress and stability. Please refer to the "Approved Stability Booklet."

c) Consider transfer of fuel from damaged tanks, with due consideration paid to stress and stability. Please refer to the "Approved Stability Booklet."

d) Reduce longitudinal stress on hull by transfer of cargo internally. Please refer to the "Approved Stability Booklet."

e) If the change in stability and stress cannot be calculated on board, contact the Vessel's management to arrange for the necessary calculations. Refer to Appendix 3 for information which should be provided.

2. FIRE / EXPLOSION

If a fire or explosion occurs on board, the vessel's fire control party must ensure that the following actions are taken:

a) Sound Emergency Alarm and muster crew.

b) Determine extent of damage and what damage control measures can be taken.

c) Determine whether there are casualties.

d) Request assistance as deemed necessary

e) Assess possibility of oil leakage.

f) If there is a discharge or possible discharge of oil, this is to be included in the casualty report.

g) Should abandonment be necessary, the Master must ensure that every effort is made to maneuver survival craft upwind of any oil spill.

3. COLLISION

If a collision occurs, the Master must ensure that the following actions are taken:

a) Sound Emergency Alarm and muster crew.

b) Determine whether there are casualties.

c) If there is a possibility of fire or explosion, eliminate all avoidable sources of ignition and ban smoking on board. Action should be taken to prevent inflammable vapors from entering accommodation and machinery spaces. See Section 1.3.3.

d) Decide whether separation of vessels may cause or increase spillage of oil.

e) If any oil tanks are penetrated, isolate the penetrated tank or transfer oil to slack or empty tanks with due attention paid to stress and stability of the vessel. Please refer to the "Approved Stability Booklet."

f) If there is an oil spill, make a report as per section 2.

4. HULL FAILURE including ice damage

If the vessel suffers structural hull failure, the Master must ensure that the following actions are taken:

a) Sound Emergency Alarm and muster crew.

b) Reduce speed or stop to minimize stress on hull.

c) Assess immediate danger of sinking or capsizing.

d) Initiate damage control measures.

e) If oil has spilled, or if it is necessary to jettison oil to maintain stability, make a report as per section 2.

f) If the change in stability and stress cannot be calculated on board, contact the Vessel's management to arrange for the necessary calculations.

g) Consider forecast weather conditions and their effect on the situation.

h) Should abandonment be necessary, the Master must ensure that every effort is made to maneuver survival craft upwind of any oil spill.

5. EXCESSIVE LIST

If excessive list occurs rapidly and unexpectedly, it may be due to:

a) Failure of hull plating.

b) Failure of internal bulkhead between compartments.

c) Shift of cargo.

d) Damage through grounding or collision.

e) Incorrect operating condition. Refer to "Approved Stability Booklet."

f) Flooding in Engine Room, where free surface can cause a list.

The Master must ensure the following steps are taken immediately:

a) Stop any cargo, bunkering, or ballast operations in progress.

b) Sound Emergency Alarm and muster crew.

c) Determine whether there are casualties.

d) If under way, reduce speed or stop.

e) Establish reason for list. See above.

f) Sound all tanks and compare with departure soundings.

g) If oil has spilled, or it is necessary to jettison oil to maintain stability, make a report as per section 2.

h) If possible, take corrective action to rectify the situation with due consideration paid to vessel stress and stability. Please refer to the "Approved Stability Booklet."

SECTION 4 • National and Local Coordination

1. The Master will advise the Coast Guard of nearest coastal state regarding any oil spill. Vessel Interest Contacts must also be notified of any such incident. See Appendix 2 for details.

2. The Master will be the point of contact on the vessel for coordinating shipboard activities with national and local authorities, act as the Company's on-scene representative, and will be responsible for overseeing the action of any salvage or spill contractors employed until such time as he/she has been FORMALLY relieved of these responsibilities by the Company.

3. The person or persons identified in the declaration shall be responsible for contacting and mobilizing the response organization(s). These organizations will coordinate and conduct the response. It is not normally practical for vessel's personnel to be directly involved in cleanup activities. Therefore, their primary role will be to provide as much information as necessary to assist the response and to cooperate with cleanup personnel. However, where no local response is forthcoming, or is delayed, the Master should consider the use of available shipboard materials to clean up or contain the spilled oil by, for example, using ship-stocked absorbent materials or utilizing mooring ropes or air-filled hoses as makeshift booms.

4. Dispersants or degreasers should not be used on oil spilled in the water as their use may contravene local regulations. However, dispersants may be used if they are approved by Environment Canada specifically for a given incident. Environment Canada will allow and approve the use of dispersants on a case by case basis only

SECTION 5 • Ship to Ship Transfer Operations

Should a situation such as lightening due to grounding require a ship to ship transfer of petroleum products, the Master must take into account but not limited to the following:

1. Proper lines of communication between ships including language and radio working frequency;
2. Current and forecasted weather conditions for the intended area of transfer;
3. The compatibility of the vessels involved with regards to size, freeboard, manifold location, list, trim, etc.
4. The elimination of all possible ignition sources;
5. Oil spill clean up equipment and procedures in place;
6. Contingency planning for emergency situations in place.

For detailed procedures concerning ship to ship transfer of petroleum products, please refer to ***The Ship to Ship Transfer Guide (Petroleum)****, published by The International Chamber of Shipping Oil Companies International Marine Forum, 3rd edition, 1997. A copy of which is to be kept on board the ship at all times.*

SECTION 6 • Additional Information (Non-Mandatory)

This section provides for additional information that local authorities, insurance underwriters, or Vessel Management may wish to include, but is not mandatory. (Regulation 26, Annex I, Marpol 73/78)

MEDIA INFORMATION

In the event of an oil spill or other related casualty, the Master is to direct any Coastal Radio station being worked that inquiries from any of the various media nodes are to be directed to the Vessel Management, who will handle such incidents shore-side. This will enable the Master to concentrate on the matter at hand.

PLAN REVIEW

This plan is to be reviewed at regular intervals by the Vessel Management and Master such that the information contained herein is current. Changes should be incorporated in the plan as and when they occur and the changes noted and by whom. Reviews should be conducted annually to reflect changes in local laws or policies, contact names or numbers, vessel characteristics, or company policy.

Reviews should also be conducted after any use of the plan in response to an incident, in order to evaluate its effectiveness and make any modifications deemed prudent at that time.

APPENDIX 1 • Report Format and Content

The report should contain the following:

AA VESSEL NAME, CALL SIGN, FLAG

BB DATE & TIME (GMT) OF INCIDENT: 111935 meaning 11th of month at 7:35 pm.

CC SHIPS POSITION: 2230N 0600E meaning 22 deg. 30 min. N, 6 deg. E

or

DD SHIPS POSITION BY TRUE BEARING (3 DIGITS) AND DISTANCE FROM CLEARLY IDENTIFIED LANDMARK.

EE TRUE COURSE (3 DIGITS)

FF SPEED IN KNOTS AND TENTHS OF A KNOT (3 DIGITS)

LL ROUTE INFORMATION - INTENDED TRACK

MM RADIO STATIONS AND FREQUENCIES GUARDED

NN TIME OF NEXT REPORT (same as in BB)

OO DRAFT (4 DIGITS - meters and centimeters)

PP TYPES AND QUANTITIES OF CARGO AND BUNKERS ON BOARD

QQ BRIEF DETAILS OF DAMAGE, LIMITATIONS ETC. (must include condition of vessel and ability to transfer cargo, ballast, or fuel)

RR BRIEF DETAILS OF ACTUAL POLLUTION (oil type, estimate of quantity discharged, whether discharge continues, cause, estimate of slick movement)

SS WEATHER AND SEA CONDITIONS (wind force/direction, relevant tidal and/or current information)

TT NAME, ADDRESS, TELEX, FAX, TELEPHONE NUMBERS OF VESSEL OWNER OR REPRESENTATIVE

UU DETAILS OF LENGTH, BREADTH, TONNAGE, AND TYPE OF VESSEL

WW TOTAL NUMBER OF PERSONS ON BOARD

XX MISC. DETAILS (brief details of incident, actions taken, injuries, assistance required)

UNOFFICIAL OIL POLLUTION EMERGENCY REPORT BY FACSIMILE

Vessel Name Call Sign Flag

Date and Time of Event

Vessel Position (Latitude & Longitude, Bearing & Distance from Landmark)

Course Speed

Intended Track

Radio Station

Date and Time of Next Report

Type and Quantity of Oil On board

Brief Details of Damage

Brief Details of Pollution

Details of Weather & Sea Conditions (Wind Speed/Direction, Swell Height/Direction)

Names of Vessel's Owner

Vessel Size and Type

Any Other Additional Information as Determined by Master

APPENDIX 2 • Who to Contact

In accordance with the Canadian Pollutant Discharge Reporting Regulations, the Master or Owner of a ship must report, without delay, any discharge or anticipated discharge of a pollutant in Canadian waters or fishing zones, to a Pollution Prevention Officer (PPO). Reports must be made in the manner described in Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants, TP 9834, or "General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants" adopted by the IMO by Resolution A 648(16) These initial reports can be made to a Vessel Traffic Service Centre (VTS) or any other Canadian Coast Guard Radio Station (CGRS), on the frequencies listed in the publication, Radio Aids to Marine Navigation (RAMN).

In addition to the above process for reporting a spill from a vessel to a PPO through a CGRS or VTS, the Canadian Coast Guard maintains a 24 hour Operations Centre which can be contacted at:

Canadian Coast Guard Operations Centre
344 Slater Street
Ottawa, Ontario
K1A 0N7

Tel: (613) 990-5600 Fax: (613) 995-4700 Tlx: (613) 053 3128

Within Canada, administrative inquiries related to pollution prevention, compliance and enforcement, vessel regulations, design and construction should be directed to:

Director General, Marine Safety
Transport Canada
Mailstop: AMS
330 Sparks Street
Ottawa, Ontario
K1A 0N5

Tel: (613) 998-0610 Fax: (613) 954-1032

Inquiries relating to pollution response should be directed to:

Director General, Rescue and Environmental Response
Canadian Coast Guard
344 Slater Street
Ottawa, Ontario
K1A 0N7

Tel: (613) 990-3110 Fax: (613) 996-8902

VESSEL INTEREST CONTACTS

VESSEL MANAGEMENT

Coastal Shipping Limited (Owners)
P.O. Box 913
Happy Valley-Goose Bay, Labrador
A0P 1S0

Office: (709) 896 - 2421
Fax: (709) 896 - 5028

24 HOUR CONTACT

The following phone numbers are provided
for 24 hour contact, year round:

Cell:	(709) 682 - 0826	Kevin Brewer or Gerry Burgess
Home:	(709) 227 - 2600	Kevin Brewer
	(709) 745 - 2684	Gerry Burgess

APPENDIX 3 • Vessel Stress and Stability Calculations

VOYAGE PARTICULARS

Departure Port

Departure Date

Time (GMT)

VESSEL CONDITION IMMEDIATELY BEFORE CASUALTY

Mean Draft Forward

Mean Draft Aft

KG(solid)

KG(fluid)

LCG of Vessel

#	COMPARTMENT	S.G.	TONNES

#	Compartment	S.G.	Tonnes

DATA RELATING TO VESSEL AFTER CASUALTY

Nature of Casualty: Collision / Grounding (Fixed / Free) / Fire
Explosion / Heavy Weather / Other

Casualty Date Report Time (GMT)

Geographical Location of Casualty: LAT
LONG

Conditions at Site at Time of Casualty Report

Weather

Sea State

Tidal State

Tidal Range

Forecast

S.G. of Surrounding Water

Position of Vessel relative to Wind, Waves, Tides, etc.

Drafts Measured Port and Starboard:

Drafts at Fwd Marks/F.P.(Best Estimate)
Drafts at Aft Marks/A.P.(Best Estimate)
Drafts at Midships (Best Estimate)
Angle of Heel (Port / Starboard)

Best Estimate of Depth of Water (for Grounding)

Location	Port	Starboard

REPORTED DAMAGE

Details of each damaged compartment known to be open to the sea, including those damaged above the present waterline

Compartment	Estimated Cargo Weight (tonnes)	Permeability of Cargo (%)	Comments

Extent and location of structural damage in way of above compartments. (Attach sketch)

Extent of additional damage to pipes, valves, hatches, doors, etc. and list of compartments which may be subject to progressive flooding as a result.

Soundings from or estimates of amounts of flood water in spaces not directly open to sea.

PROPOSED ACTION AND REQUIREMENTS

Any other relevant information, details of action being undertaken or proposed course of action, salvage operation etc.

APPENDIX 4 • Relevant Drawings

FOLLOWING ARE DRAWINGS RELEVANT TO THIS VESSEL

General Arrangement Drawing
Tank Capacity Plan
Cargo Piping Diagram