OIL HANDLING FACILITY

OIL POLLUTION EMERGENCY PLAN

For
Meliadine Mine Fuel Farm in Rankin Inlet

JANUARY 2019
Version 2

EXECUTIVE SUMMARY

This document presents the Oil Pollution Emergency Plan for Agnico Eagle Mines Limited (Agnico) Meliadine Division. This plan is pursuant to the Canada Shipping Act 2001; and all the subtending regulations.

Oil Pollution Emergency Plan (OPEP) 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 fuel transfer which takes place at Agnico Eagle Ltd.'s Itivia Site Fuel Storage and Containment Facilities and Oil Handling Facility located at latitude 62°48'16.66" N and longitude 92°05'5.32" W.

A hard copy of the OPEP is available at the Rankin Inlet Marshalling facility during the transfer operations.

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ACRONYMS

Agnico	Agnico Eagle Mines Limited
DFO	Department of Fisheries and Oceans Canada
ECC	Emergency Control Center
ECCC	Environment and Climate Change Canada
ERT	Emergency Response Team
ERP	Emergency Response Plan
Fuel	P50 Arctic Grade diesel fuel
IMO	International Maritime Organization
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
KIA	Kivalliq Inuit Association
MARPOL	*The International Convention for the Prevention of Pollution from Ships,* 1973, and
OHF	Oil Handling Facility
OPEP	Oil Pollution Emergency Plan
PPE	Personal Protective Equipment
SCP	Spill Contingency Plan
SOPEP	Ship Oil Pollution Emergency Plan
SMP	Spill Management Plan
TC	Transport Canada
TCMSS	Transport Canada Marine Safety & Security
TEU	Twenty-foot equivalent unit

DISTRIBUTION LIST

Agnico - Environmental Superintendent

Agnico – General Mine Manager

Agnico – Health and Safety Superintendent

Agnico – Energy and Infrastructures Superintendent

Agnico – General Services Superintendent

Agnico – ERT Emergency Measures Councilor

Rankin Inlet – Rankin Inlet Hamlet Office

Rankin Inlet – Fire Department

Coastal Shipping Limited – General Manager

Transport Canada – Marine Pollution Officer

Canadian Coast Guard Environmental Response

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
0	17/07/17	All	All	Comprehensive plan for Agnico's Rankin Inlet Fuel Farm Facilities
1.1	18/09/17	5.3, 10.2, Appendix H	11, 33, 217	Additions and revisions in response to the comments by Transport Canada officer
1.2	18/02/07	All Document control 3.2.1 4.2.1 5.4 Figure 3 Table 5	All 5 4 8 12 13 24	-Version and date updated, general review and revision -Environment general supervisor updated -Added reference to spill response seacans located along the AWAR -Removed "A fuel dispensing pad area completed with a dispensing unit will be located in a lined facility with a provision to capture any and all spills at the fueling area and direct them to a containment area provided at the tank farm." – to be implemented through future planning -Added "or equivalent, ie. Plastic tote" to options for spill containment at OHF manifold -Added environment department to list of security contacts -Updated Agnico contact list
1.3	18/07/20	All	All	Fuel Handler
2	19/01/03	All Appendix I	All	-Version and date updated, general review and revision -added mock spill training in the summer of 2018

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Approved By: 

Kevin Buck
Environment General Supervisor

AGNICO EAGLE

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SECTION 1. OIL HANDLING FACILITY DECLARATION

Pursuant to paragraph 168(1) (b) (i) of the Canada Shipping Act 2001, Agnico Eagle Mines Ltd. (Agnico) has signed an Oil Handling Facility Declaration. This Declaration can be found posted at the Oil Handling Facility (OHF).

SECTION 2. GENERAL INTRODUCTION

The Oil Pollution Emergency Plan (OPEP) outlines the necessary actions to stop or minimize the potential loss of fuel at Agnico Eagle Mines Limited's Itivia Site Fuel Storage and Containment Facility located in Rankin Inlet, Nunavut during the ship-to-shore fuel transfer. Additionally, it provides direction to Agnico personnel and/or contractors at the laydown and tank farm areas, and to Agnico's Emergency Response Team (ERT) for emergency spill response situations, describes oil pollution scenarios, defines the roles and responsibilities of management and responders; and outlines the measures taken to prevent spills. The purpose of the OPEP is to minimize potential health and safety hazards, environmental damage and cleanup costs.

2.1 Fundamental Principles

The following OPEP is submitted to comply with the Canada Shipping Act 2001 and all the subtending regulations and to outline the appropriate spill response protocol during fuel transfer operations at the Rankin Inlet OHF. A hard copy of the OPEP is located on site for reference and review during transfer operations. This OPEP is reviewed annually and updates are provided to Transport Canada Marine Safety & Security (TCMSS) for compliance prior to every shipping season. The following priorities shall be taken into account when responding to an oil pollution incident and in the following order:

1. Safety of the workers;
2. Safety of the OHF;
3. Safety of the community of Rankin Inlet;
4. Prevention of fire and explosion;
5. Minimize of the oil spill;
6. Notify and report the oil pollution incident to associated Governing bodies;
7. Minimize the environmental impact of the spill;
8. Complete clean-up from the oil pollution incident.

2.2 Legislative Requirements

This plan was prepared in accordance with federal legislation listed below, which lists legislative instruments applicable to Agnico's Itivia Site Fuel Storage and Containment Facility. All requirements found in the Canada *Shipping Act*, *2001*, ss. 168 are laid out in the Meliadine Mine site OHF Concordance Table which will be submitted to Transport Canada (TC) as a stand-alone document.

The OPEP complies with the requirements for procedures, equipment and resources as set out in the *Canada Shipping Act* (s.s. 660.2(4)) specific to a fuel handling facility - the bulk incoming transfer of fuel from ship-to-shore and spill scenarios directly relating to this operation.

The following standards and regulatory requirements have been reviewed in preparation of this document:

- Canada Shipping Act;
- Response Organizations and OHFs Regulations;
- Vessel Pollution and Dangerous Chemical Regulation;
- Environmental Response Arrangements Regulations;
- OHFs Standards (TP 12402E);

- Response Organization Standards (TP 12401);
- Arctic Waters Oil Transfer Guidelines (TP 10783);
- Environmental Prevention and Response National Preparedness Plan (TP 13585);
- Release and Environmental Emergency Notification Regulations;
- Guidelines for reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants;
- Requirements of the Central & Arctic Regional Response Plan; and
- Storage tank System Regulations

2.3 Related Documents

Management and monitoring plans for the Meliadine Project and that provided input to the Oil Pollution Emergency Plan include the following:

1. Spill Contingency Plan;
2. Emergency Response Plan; and
3. Shipboard Oil Pollution Emergency Plan[1].
4. Shipping Management Plan

The cornerstones of contingency planning for Agnico are the Spill Contingency Plan and the Oil Pollution Emergency Plan. These, coupled with the Emergency Response Plan and the Shipping Management Plan, describe the processes to be followed in responding to a spill. The OPEP on its own provides the necessary information in the event of a mishap where fuel is lost during the transfer of fuel from a tanker vessel to the Fuel Tank Facility.

The OPEP complements the Spill Contingency Plan and it should not be construed as superseding it. The Spill Contingency Plan addresses a wider scope of operations stretching 35 kilometers from the Meliadine mine site in the north to the infrastructure at the Itivia Site Fuel Storage and Containment Facilities. The OPEP strictly covers the transfers of fuel from ship to OHF.

2.4 Meliadine Mine Oil Pollution Emergency Plan

This Plan is a working document that will be reviewed annually and updates will be provided to TCMSS for compliance prior to every shipping season.

This plan specifically centers on the activities in ship-to-shore transfer of fuel from a small tanker delivering fuel to Agnico's Itivia Site Fuel Storage and Containment Facility constructed in Rankin Inlet. On site personnel at the Facility are expected to respond to spill incidents (generally smaller than 1 m^3) that can be contained and cleaned up without assistance, while the Emergency Response Team will respond to larger spills.

Fuel is being delivered to Agnico's Itivia Site Fuel Storage and Containment Facility by Coastal Shipping Limited, a Division of the Desgagnes Group. Fuel is stored within the existing tank farm owned and operated by Agnico. The Shipboard Oil Pollution Emergency Plan (SOPEP) is the responsibility of the shipping company. The outline of the SOPEP prepared by Coastal Shipping Limited can be found in Appendix A – 1.1.

[1] *The Shipboard Oil Pollution Emergency Plan (SOPEP) contains all information and operational instructions as required by the "Guidelines for the development of the Shipboard Marine Pollution Emergency Plan" as developed by*

the International Marine Organization. Desgagnes, the shipping company, is responsible for this Plan.

SECTION 3. PLANNING STANDARDS

3.1 Facility Category

OHFs are categorized according to their maximum oil transfer rate in cubic meters per hour, in respect of the oil product loaded or unloaded to or from a ship, as follows (Table 1):

Table 1 - Category of OHF

Category of OHF	Maximum Oil Transfer Rate (cubic meters/hour)
Level 1	150
Level 2	750
Level 3	2 000
Level 4	More than 2 000

The product transfer rate (Diesel) for the Agnico's Itivia Site Fuel Storage and Containment Facility OHF at Rankin Inlet is 400 m^3/hr. As indicated in the OHF Standards TP 12402, this flow rate requires the onsite spill response capacity to meet a Level 2. To do this, the OHF will have the equipment and resources to respond to a 5 m^3 spill within the required timelines specified in the Response Organization and OHF Regulations:

1. Contain and control in one hour of spill detection; and
2. Commence cleanup within six hours after spill detection.

3.2 General Planning Guidelines

3.2.1 Response Time Standards

Agnico and contractor personnel at Itivia Site Fuel Storage and Containment Facility have appropriate training to respond to spills, if it is safe to do so (see Table 8). The material onsite can be deployed within one hour to contain a spill of 5 m^3 or less, unless deployment within one hour will be unsafe. Generally, for a spill greater than 1 m^3, the OPEP and the Emergency Response Plan (ERP) will be activated and the Emergency Response Team (ERT) located at Meliadine Mine site will come in Rankin Inlet to help. Realistically, the ERT can be on site within 60 minutes (or less) ready to help for the clean-up activity. If the spill is greater than 5 m^3, material from the spill response seacans along the AWAR (km 7 and 18) and the Meliadine Mine site will be required and will be brought to the Itivia OHF within 60 minutes to finalize the containment (if not complete) and recovery of the oil pollution incident.

3.2.2 On-Water Recovery

Agnico has a boat in a sea can at the Itivia Site Fuel Storage and Containment Facility that is ready to be deployed in case of an emergency situation.. All personnel involved in a response situation need to have or complete the pleasure craft operator's certification.

If additional water crafts are required to help with the containment of a spill from the OHF local resources

such as Sarliaq Holdings Ltd and Inuksuk Contracting. Contact info for these companies can be found in Table 6.

3.2.3 Dedicated Facility Spill Response Equipment

Agnico has a sea can with spill response equipment at the Rankin Inlet shore within Agnico's Marshalling area and includes booms that can rapidly be deployed to limit the spread of any spill on water. The list of equipment can be found in Table 2. The spill supplies and resources are in place to respond to a 5 m^3 spill within the required timelines as specified in the Response Organizations and OHF Regulations. These sea cans are inspected before each transfer season to ensure that all the spill response material and PPE are there and stored in a manner that is organized and accessible in order to comply with regulatory requirements and allow an efficient spill response.

3.2.4 Transfer Conduit

The transfer conduit or hose that is used to transfer fuel from Coastal Shipping Vessels to the Agnico Rankin Inlet Fuel Farm OHF are pressure tested annually by Coastal Shipping according to the regulation prior to it being placed into service. A copy of the annual pressure tests conducted can be found in Appendix B. The transfer conduit will always have a bursting pressure of at least 4 times its maximum design pressure and the design pressure will be clearly marked on the conduit.

3.2.5 MEL-ENV-0029: OHF / Ship to Shore Fuel Discharge Procedure

Agnico has created an internal procedure to ensure all planning and precautions are in place prior to the transfer of any fuel from the vessels to the OHF. This procedure can be found in Appendix C along with the Pre-discharge and Spill Response Sea Can checklist.

SECTION 4. RANKIN INLET MARSHALLING AREA AND FUEL STORAGE FACILITY

4.1 General Overview and Site Description

Agnico Eagle's proposed tank farm and laydown area is located at Itivia in Rankin Inlet on Melvin Bay at latitude 62°48'16.66" N and longitude 92°05'5.32" W, map sheet 055/K16. Its location is shown on Figure 1-1. Two (2) fuel storage tanks are installed at the Rankin Inlet Itivia fuel farm. The site location of the 20 million and 13.5 million liter tanks (tank #1 and #2 respectively) is shown on Figure 2 below. Tank #1 was completed in 2018; Tank #2 was erected in 2017.

Figure 1 - Location of the Community of Rankin Inlet

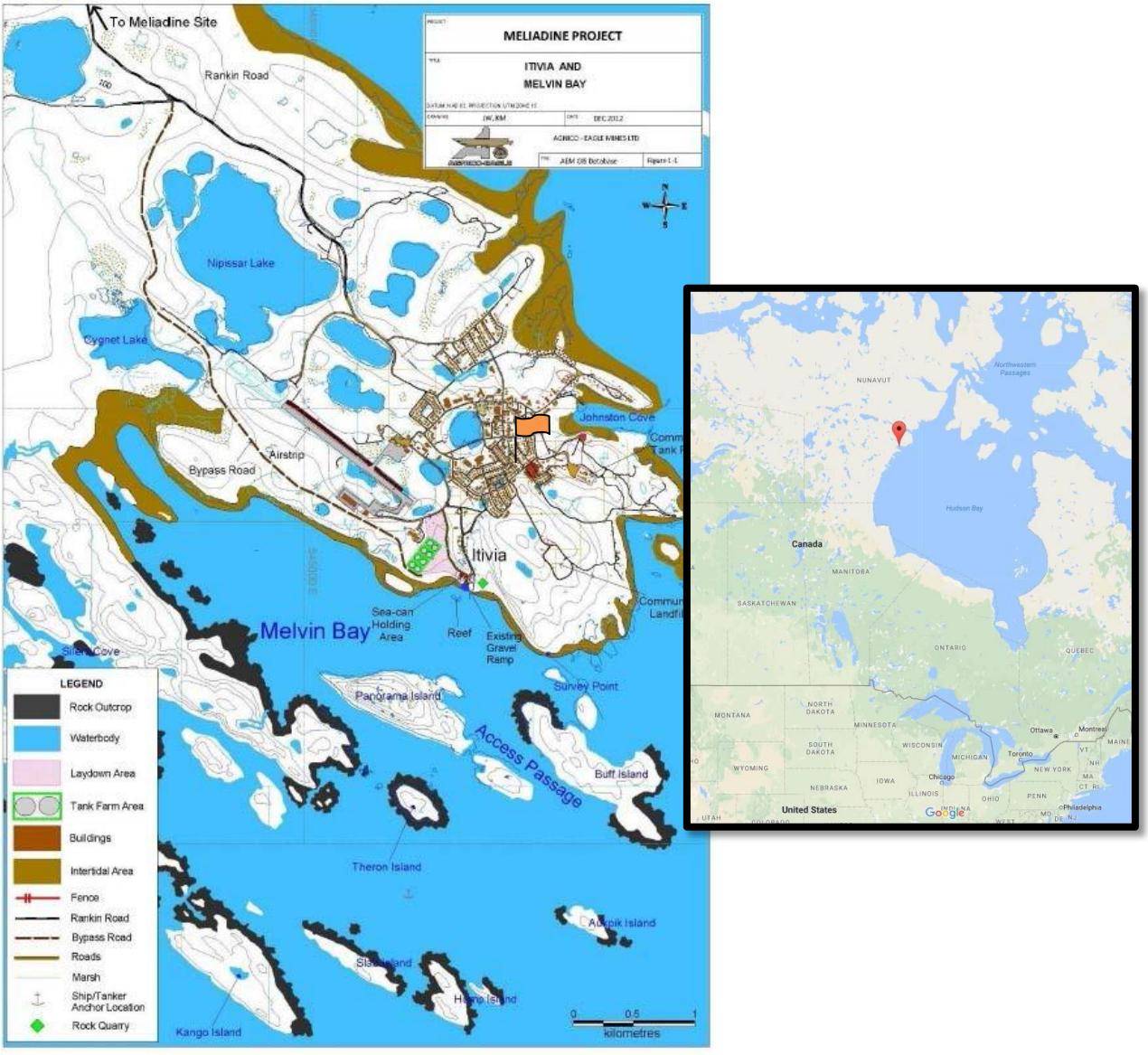
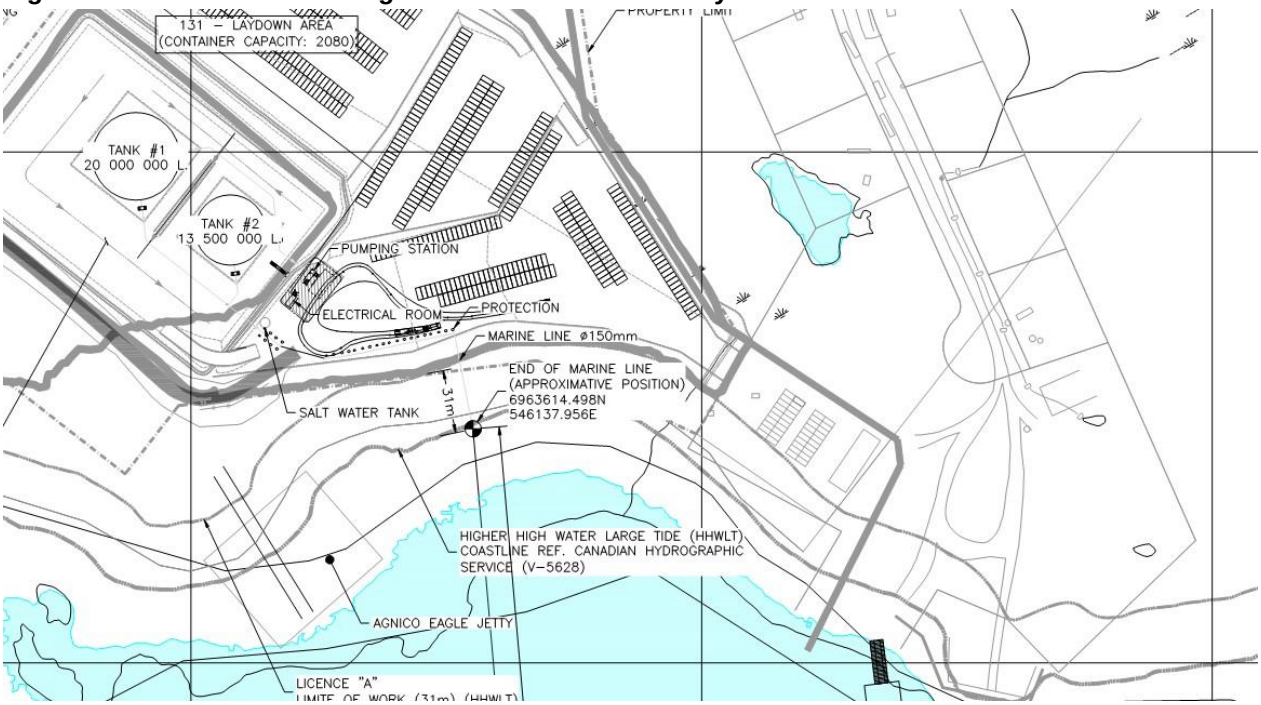


Figure 2 - Itivia Site Fuel Storage and Containment Facility



4.2 Fuel Storage Facilities Infrastructure

4.2.1 P-50 Fuel Tanks

The diesel fuel tanks are contained within an impermeable lined and bermed area. The steel fuel tanks were field-erected and built to API-650 standards. The bermed area is capable of containing 110% of the volume of the largest storage tank. The impermeable lined and bermed cell has the following:

- A granular base for the tank completed with an impermeable LLDPE liner system and granular dikes;
- A tank complete with the required appurtenances such as stairs, base manholes, water draw offs, re-supply nozzle, suction nozzle, tank lighting, tank level monitoring, roof manhole, manual gauge hatch, tank temperature and P/V vent;
- Piping for unloading and loading; and
- Site lighting via fixtures mounted from the dispensing building.

The Tank Farm Facility is designed to meet the following standards:

- National Fire Code 2010;
- *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations* – 2008; and
- Canadian Council of Ministers of the Environment, "*Environmental Code of Practice of Aboveground and Underground Storage Tank Systems Containing Petroleum Products and Allied*

Petroleum Products – 2003 (Updated in 2013) (PN1326)".

The OHF is constructed and operated in accordance with TC Arctic Waters Oil Transfer Guidelines (TP 10783E) and OHF Guidelines (TP 12402E).

4.3 Rankin Inlet Shoreline and Marine Characteristics

The following Rankin Inlet Shoreline and Marine Characteristics were gathered during the Environmental Impact Assessment that was performed prior to construction of the Rankin Inlet Marshalling facility and Tank Farm.

4.3.1 Topography

The bulk fuel storage area is located south of the residential area of Rankin Inlet, and within the industrial area of the community of Rankin Inlet, south of the Rankin Inlet Regional Airport. The OHF sits on a terrace parallel with the shoreline of the coast of Hudson's Bay, the bay in which Rankin Inlet is located is known as Melvin Bay. There is a gradual slope (5 to 10% grade) toward Melvin Bay with an approximate elevation change of 3-5 m from the OHF to the coastal shoreline. The Melvin Bay shoreline is gently sloping, well-drained, very rocky, comprised of boulders and rock.

4.3.2 Flora and Fauna

There are no trees and few shrubs in the area surrounding the bulk fuel storage facility. The site is covered by low-lying vegetation; predominated by grassy hummocks, dwarf willow, sedge, green moss and lichen.

Arctic ground squirrels, ptarmigans and songbirds inhabitthe area surrounding the bulk fuel storage facility. Lake cisco, lake trout, arctic char, lake whitefish, round whitefish, slimy sculpin and stickleback are predominant species found in Hudson Bay in the vicinity of Rankin Inlet.

4.3.3 Tides and Currents that Prevail at the Facility

There is a general cyclonic (counter clockwise) current in Hudson Bay with mean monthly residual currents of approximately 4 to 6 cm/sec. In Hudson Bay, stronger currents occur in summer than in winter and more variability occurs at the surface than at depth. Based on the navigation charts prepared by Canadian Hydrographic Service, flow through the Access Passage into Melvin Bay can reach approximately 26 cm/s (0.5 knot; CHS 1997). Tidal range is about 4.6 metres at Panorama Island in Melvin Bay.

4.3.4 Meteorological Conditions Prevailing at the Facility

Monthly meteorological data has been collected from 1981 to 2009 at the Rankin Inlet A climate station, which is a Meteorological Service of Canada climate station. Snow and rain are combined to give monthly average precipitation. The prevailing winds for the area are generally from the north to north-west and average 23 km/h.

4.3.5 Surrounding Area Environmental Sensitivities

The hamlet of Rankin Inlet is situated on the Kudlulik Peninsula which protrudes into Rankin Inlet of Hudson Bay. Rankin Inlet itself has three (3) main rivers entering it: the Diane River in its northwest, and the Meliadine River and Char River in the northeast. Melvin Bay is fringed with drying flats on the north side and encumbered by islands, islets, reefs and shoal water. The access passage is mostly bedrock.
Itivia is situated on the northeast shore of Melvin Bay as shown in Figure 1. Itivia has an intertidal zone of up to 56 metres with the substrate predominately comprised of 70% gravel/cobble, 20% fines and 10%

boulders. The substrate at this location was strongly influenced by the addition of gravel to develop the harbour's boat launch. In the open water season, Itivia provides a place for residents to moor and launch their boats. A few cabins are situated across Melvin Bay from Itivia but otherwise there are no buildings on the shore. Itivia is used for the loading and unloading of community supply vessels. In the winter, it is used by residents for snowmobile access to the sea ice in Melvin Bay and beyond.

Melvin Bay has a typical biological assemblage of macrophytes, plankton, zooplankton, benthic invertebrate and fish found elsewhere in this area of Hudson Bay. Near shore macrophyte coverage around Melvin Bay is sparse and is predominately rockweed (Fucus spp.) and kelp (Laminaria spp.). Phytoplankton are predominately dinoflagellates while the zooplankton community is more variable. Incidental invertebrate species are observed and include amphipods, barnacles, unidentified bivalves (e.g., mussels, clams), winkles (Littorina sitkana), ascidians (sea squirts), and unidentified crab species. Arctic char were not captured in Melvin Bay during the baseline survey. The predominate fish was Greenland cod followed by slender eelblenny and fourhorn sculpin.

SECTION 5. SITE ACTIVITIES

5.1 Nature of the Oil Product

The main fuel stored at the Agnico's Rankin Inlet Fuel Farm is P50 diesel. Appendix D includes the MSDS for Diesel. All other fuels such as gasoline, Jet-A and possibly other grades of diesel are purchased in drums or 1 m^3 totes and brought to the mine site for storage at the Itivia Site Fuel Storage and Containment Facility, or purchased and brought to site from a supplier or contractor in Rankin Inlet.

5.2 Bulk Transfer

The tankers delivering diesel fuel are anchored within Melvin Bay. From there, transfer hoses (Conduit) are connected to a shore based pipeline for transfer of P-50 diesel fuel to the diesel tank farm.

Ballast are not required for the inward voyage as the tanker arrives at Rankin Inlet loaded with diesel fuel. After transferring the fuel to the tank farm, the tanker takes on ballast in its segregated ballast compartments before sailing out.

Due consideration is given to prevailing and expected wind, weather and tide conditions when undertaking ship-to-shore fuel transfers.

The tanker is discharging at a rate of 400 m^3/hr. Communications between the shore and the tanker is maintained throughout to ensure the safe transfer of the fuel and to avoid the overfilling of the tanks. The ship-to-shore transfer procedure being use is similar to the one used at communities throughout Nunavut.

5.3 Measures to Minimize a Diesel Pollution Incident

The small tanker is anchored offshore in water of sufficient depth to allow for draught and tidal changes during transfer.

The transfer of the fuels uses sound, well-rehearsed practices, including an adequate number of trained and alert personnel, have sufficient materials, and use well maintained, thoroughly tested equipment. A team of trained personnel on the tanker is in charge of the tanker fuel transfer equipment, while an onshore team is in charge of the land based transfer equipment. Agnico has at least 2 trained personnel on the land to observe for any leak detection: a third party contractor (Intertek) and the Rankin Inlet Supervisor. The role of the third party contractor is to apply procedure and oversee operation during the fuel transfer. To do this, the third party contractor needs to come on site at least one (1) day before the first day of transfer to receive the appropriate training given by the Environmental Department. Fire-fighting, spill response equipment, and supplies are located on the tanker and onshore near the transfer point as required by TC. This includes readily available absorbent material (including absorbent pads) at the flexible hose connections on deck and onshore to quickly address minor spills at predictable minor spill locations. Additionally, Agnico placed a sea can with spill response supplies (including boat) and equipment at the Itivia Site Fuel Storage and Containment Facility area where it can quickly be accessed in the event of a spill.

Four-inch (10 cm) steel piping able to accommodate a flow rate of approximately 400 m^3/hr leads down to the shore from the diesel tank farm. Conduit from ship-to-shore are connected to the fuel-receiving manifold located onshore using a dry-break coupling(s).

- Complete checklist before / during transfer for the on-land responsible (See Appendix E);
- Complete checklist, provide by Desgagnes, with vessel captain before transfer begin (Appendix E);
- Complete inspection / inventory of spill response sea can before transfer;
- During the transfer, regular monitoring are undertaken for detection of incipient spills and leaks between the tanker and the tank farm;
- Radio test before transfer and at hour intervals during transfer between the personnel on land and the captain of the vessel
- Transfer operations will be suspended should any leak be detected or filling alarm are activated;
- The onshore area and ship deck are well-lit as fuel transfers could continue around the clock;
- Have a good knowledge of the OPEP requirement and protocol to follow in case of a spill by receiving a training / review each year before the transfer season; and
- The regular update of the OPEP.

During the ship-to-shore transfer, Agnico has competent personnel on location at all times to monitor the fuel transfer and maintain contact with the tanker's crew. Should problems arise, the ship can be called to shut down the transfer and onshore piping will be closed down. In the event of a spill that escapes the containment boom, diversion booming will be deployed to minimize migration of a spill throughout Melvin Bay. Adequate lighting is in place during all transfers, to allow for proper inspections of transfer locations around the clock. The lighting system intensity is not less than 54 lx at each transfer connection point of the vessel and OHF and a lighting intensity not less than 11 lx at each transfer operation work area around each transfer connection point of the vessel and OHF.

For more information, please refer to Appendix C: MEL-ENV-0029: OHF / Ship to Shore Fuel Discharge Procedure.

5.4 Permanent Containment Structure

At the connection of the ship's conduit to the OHF manifold, a permanent containment structure was erected for the transfer of product. This structure is capable of holding ~400 L of liquid in the case that there is a leak at the flange or residual drips out of the conduit or hard wall pipe.

Spill "pop-up" pools/secondary containment berms will be in place under each joint for the conduit used to fill the Fuel tanks during fuel transfer. These pop-up pools/berms are only capable of holding 20-50 L of fuel and are in place to catch residual and be a first line of defense in the case of a leak.

SECTION 6. MELIADINE RESPONSE TO EMERGENCIES

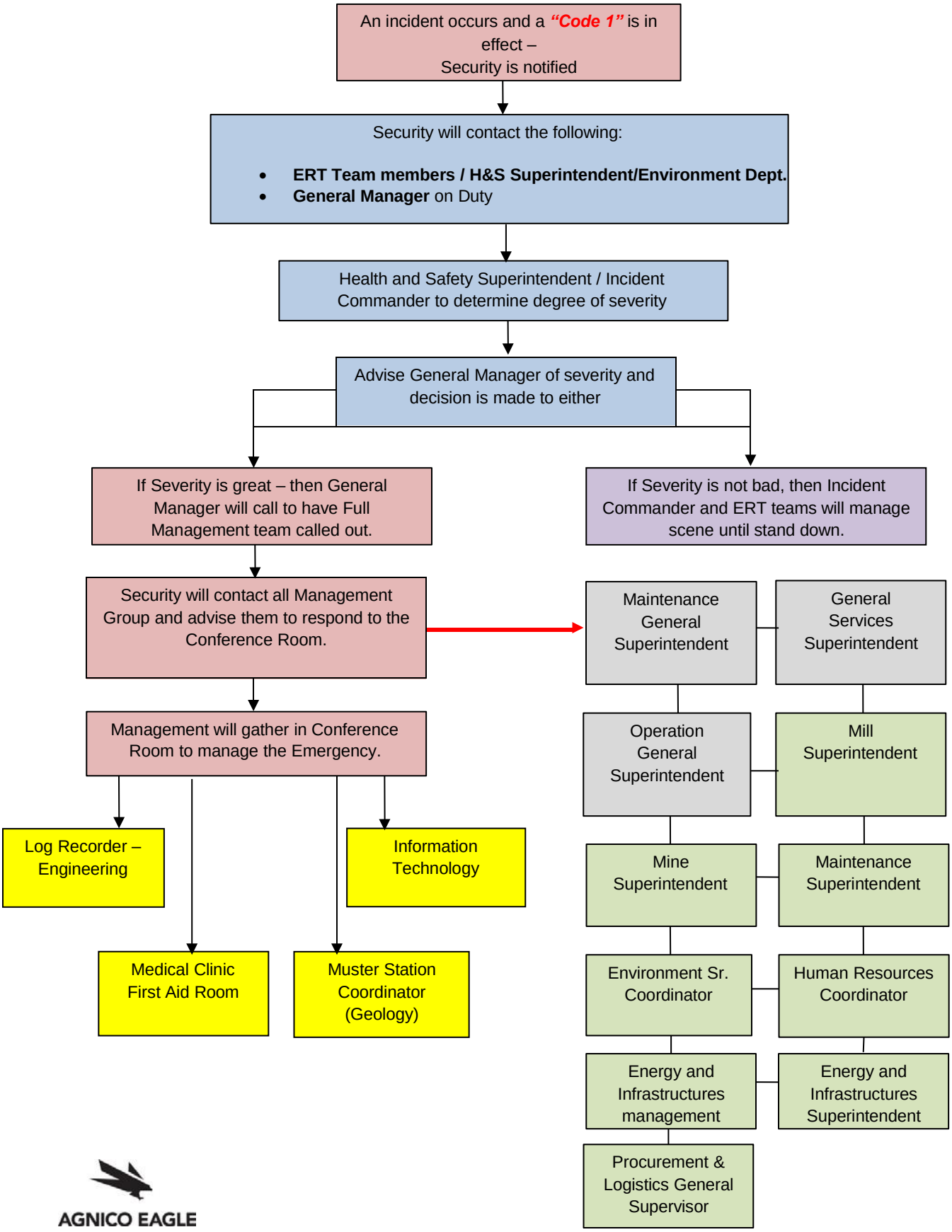
The Itivia Site Fuel Storage and Containment Facility OHF is considered Level 2 Handling facility as indicated in the OHF Standards TP 12402. With a transfer rate of ~400 m^3/hr, Agnico's OHF must have the spill response capacity to respond to a minimum of a 5 m^3 spill.

6.1 Response Management Structure

Agnico has an Emergency Response Team (ERT) at the Meliadine site trained and responsible for controlling Level 2 or greater spills at the Itivia Site Fuel Storage and Containment Facility, and for assisting with medical and other emergencies that may occur at the mine site or the OHF.

Figure 3 depicts the Response Management System.

Figure 3. Response Management System



6.2 Logistics and Planning

The Emergency Measures Counsellor (EMC) ensures that site drawings and equipment lists are posted in key locations throughout the site so that important information is always readily available. This includes the following:

- Location and isolation points of energy sources;
- Location of emergency equipment (e.g., fire water pumps, fire extinguishers, monitors, self-contained breathing apparatus);
- Emergency procedures outlines, such as specialist firefighting, chemical neutralization;
- Location of equipment for combating pollution (e.g., booms, pumps, absorbents, dispersants);
- Availability of internal and external emergency medical support (e.g., hospitals, clinics, ambulances, medical supplies, personnel with medical or first aid training);
- Location of toxicity testing facilities (e.g., gas and water);
- Location of wind direction / speed indicators;
- Directions on how to contact the local or regional weather forecasting service;
- Location of personal protective equipment (PPE) and directions on its proper use; and
- Location of first aid stations and muster areas.

The Incident Commander, EMC, and Health and Safety Superintendent know where, throughout the project site, all of this information is posted and where emergency equipment is stored. These individuals are also trained in the proper use of emergency equipment.

SECTION 7. EQUIPMENT AND PPE

The following sections describe the items that are available in the case of a spill at the Agnico Eagle Mines Limited's Rankin Inlet Fuel Farm OHF. Equipment has been classified into items available for spill sizes either up to or greater than 5 m^3. However, any and all means will always be used to respond to a spill in a timely manner and ensure a prompt clean-up of any spill.

7.1 OHF Response Equipment for spills up to ~5 m^3

The following equipment (Table 2) is available right at the OHF during open water season in a sea can designated for ***Environmental Emergency*** and can be deployed on scene within one hour, if it is safe to do, to contain and control the spill.

Table 2 - Material available in the Spill Response Sea Can at Agnico's OHF

Agnico Eagle Boom Sea Container		
Line #	**Description**	**QTY**
1	Anchor Set; 25kg anchor, 50' x 1/2" chain ballast, 50' rode line and 21" marker buoy	6
2	Tow bridles with bullet float	4
3	8" float x 12" skirt OptiMax II Boom - 25' sections	32
4	Mini Max Hydraulic Skimmer with pump, Power pack	1
5	14' aluminum boat with 15 hp outboard prop motor	1
6	1/2" Polyester Yacht Braid rope (600' rolls)	10
7	Drive pin anchors	5
8	Slater anchors	5
9	Wing anchors	5
10	Sorbent Boom, 5" X 4 per bag	30
11	Mustang Floater Suit	4
12	Personal Floatation Devices (PFD)	8
13	Oil resistant gloves	12
14	Leather gloves	12
15	Sledge Hammer with Fibreglass Handle	2
16	Spade - Long Handle	2
17	Fire Extinguisher - 20lb ABC with brackets	2
18	Tyvex Suit XL	20
19	Alberta Standard #3 First Aid Kit	1
20	Storage Totes for Small Items	4
21	Quick Tank (500 gallon / 1893 ltrs.)	1

7.2 Additional Response Equipment or for Spills >5m^3

All equipment previously mentioned is available for use during any emergency situation for a spill greater than 5 m^3. The following equipment would take time to get to the spill site, time would vary depending on distance from the spill. All these equipment and resources can be deployed on scene in <6 hours for the recovery and clean-up of the spill.

7.2.1 General Equipment

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

7.2.1.1 Mobile Equipment

Mobile equipment available to Agnico, that will be used for spill contingency include:

- Graders-1
- Cranes-3
- Snowmobiles-3
- Vacuum Truck-1
- Loaders-6
- Backhoe-3
- Bulldozer-1
- Forklift & Hysters-4
- Water Trucks-6
- Winch Trucks-2
- Pickup Trucks-40
- Generator Sets/Light tower-26
- Fire Truck-1
- Boats-4
- Fuel Trucks-1
- Bobcat-4
- Haul Trucks-13
- Snow Cat-1

All the previous listed equipment can be found on the Meliadine Project site. Wheeled equipment can be at the OHF in Rankin Inlet in 3-6 hours. Tracked equipment would have to be loaded and transported which would take 5-6 hours.

7.2.1.2 Emergency Transportation

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

- Seasonal Aircraft (fixed wing or helicopter)
- 4-wheel drive vehicles >70
- Snowmobiles x 9
- Boats and motor x 4

7.2.2 Spill Response Kits and Containers

7.2.2.1 Kits

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 for the Meliadine project (including heavy equipment) contains an emergency spill kit. Regular audits are completed to ensure these are in place.

7.2.2.2 Emergency Trailer

Agnico also have an Environmental Emergency Trailer which is easily accessible and mobile. The trailer is located at the Meliadine Project Site east of the Environmental Office. This trailer contains the following items:

2018-Emergency spill trailer equipment	
Items	**Quantity**
Evac system	2
Leak control kit	1
Drum opener	1
Westcott	2
Hammer	2
Scew driver	3
Plier	1
Empty drum	4
Berms 4x4	2
Tarp	2
Spill pad-Universal (bags)	2
Spill roll-Univesal	2
Booms (5x10)-Univesal (bag of 4)	2
Booms (8x10)-Universal (bag of 4)	2
Absorbent (gator)-(Bag)	3
Absorbent (pellet)-(bag)	2
Quatrex-bags	5
Milk crate	1
ty-wrap	Pack
Yellow liner roll	1
Anti-spark Gaz pump	1
Pump Hose	200ft
Shovel 4ft round tip	3
Re-bar 3-4-5ft	14
Sledge hammer	2
Jerry can (full gaz)	2
Crow bar 4 ft	2
Pig tale (3 balls)	1
Pin for pig tale	1

7.2.2.3 AWAR Sea cans

Along the AWAR there are 2 Environmental Emergency sea cans. These sea cans are strategically

placed along the road at water crossings. Each Environmental Emergency sea can contain the following material:

2018-AWAR SPILL SEACAN (KM 7)

Seacan	Items	Quantity
271029-0	Empty drums (Sealed) 45 gal.	10
	Quatrex Bags	10
	Yellow liner (Q-bag liner) Roll	1+1/4
	Mini Berm 3'x3'	2
	Mini berm 2'x3'	4
	Spill Kit (blue drum)	1
	Tarp 8'x10'	3
	Tarp 20'x30'	0
	Tarp 30'x50'	1
	Universal boom 5"x10'	20
	Universal boom 8"x10'	20
	Oil only booms 5"x10'	20
	Maritime barrier (Baffle)	3
	ABS pipe : 10' (4")	0
	Absorbent Sheet (bags)-Universal	10
	Absorbent Roll-Universal	10
	Absorbent pellet (bag)	7
	Oil gator absorbant (bag)	10
	Plug pattie	0
	Fork lift crate (pallets)	6
	Long handle round and sqaure point shovel	6
	Chisel point crow bar 16 lbs 57"	2
	Ice braker chisel	1
	Sledge hammer 12 lbs 36''	3
	Steel Rod bar (4')	16
	Steel Rod bar (6')	10
	stream skimmer	0
	temporary storing device (old bladders, pipes and fitting)	0
	CI agent granules (100lbs)	0
	Oil spill kit (pail)	1
	Yellow Nylon rope (bags)	2
	Mini-Sledge Hammer	1
	Ty-wrap (pack)	1
	26' Tape	1
	Multi-purpose shears	1
	Crescent wrench	1
	Hook knife	1
	Mechanics wire roll	1
	Side cutters	1

2018-AWAR SPILL SEACAN (KM 18)

Seacan	Items	Quantity
278737-1 (KM 18)	Empty drums (Sealed) 45 gal.	10
	Universal boom 5"x10'	12
	Universal boom 8"x10'	12
	Oil only booms 5"x10'	12
	Maritime barrier (Baffle)	3
	Absorbent Sheet (bags)-Universal	10
	Absorbent Roll-Universal	10
	Absorbent pellet (pail)	10
	Fork lift crate (pallets)	6
	Yellow Spill Kit	1
	Evac System	2
	Silt Bags	2
	Silt Fence	2
	Yellow Liner Roll	1
	Q-Bags	10
	Rebar 3''	4
	Rebar4''	10
	Sledge Hammer	1
	Mini Sledge Hammer	1
	Nylon rope roll	1/2
	'Pingouin''	1
	Tarp	4
	Bolt cutter	1
	Side cutters	1
	Knife	1
	Mechanic wire roll	1
	Yellow and red ruban	1 roll each
	Ty-wrap (pack)	1
	Pipe wrenck	1
	Westcott	2
	Crow bar	1

7.3 PPE

7.3.1 PPE at OHF for Spills <5 m^3

The following PPE (Table 3) can be found in the Emergency Trailer and also in sea can at the OHF:

Table 3 - PPE available at OHF

Quantity	Equipment/tool name
3	Rain gear -- Pants and Top (L & 2-XL)
3	Rubber boots (size 8,10,12)
6	Rubber gloves
3	Goggles
3	Tyvex suits (L & 2 XL)
3	Safety glasses
3	Leather gloves

This is adequate PPE intended for 3 persons. Additional PPE will be available from the Meliadine Project site.

7.3.2 PPE for Spills >5 m^3

PPE is stored in bulk quantities at the Meliadine Warehouse. Quantities of each can be found on site using the JD Edwards system. In addition, the community of Rankin Inlet has certain PPE that can be purchased through Agnico Eagle after consulting the Agnico Eagle Procurement and Logistics department; however quantities of this PPE cannot be relied on within Rankin Inlet.

SECTION 8. COMMUNICATION

The primary basis for communication is the phone system; back-up communication is also available via radios or satellite phone. For on-site communication, hand-held radios is mandatory for all employees working or travelling in remote areas from the OHF. Cell phones can be used as an additional means of communication however only CDMA service is available at the OHF. Back-up power sources and replacement batteries for communications equipment is available to provide continuous, uninterrupted operation either at fixed facilities or at emergency sites.

Key site personnel are accessible at all times by either portable radios, radios in vehicles, or office radios. The Health Care Professional carries a hand-held radio and is available at all times. Security personnel monitor the emergency channel twenty-four hours per day. Senior management personnel will rotate as "On-Call Managers" for after-hour emergencies. An accommodations list that highlights key personnel will be posted and updated as required.

In the event of a major emergency, all external communications for the project site and associated areas will be cut and all external contact will take place solely through the Emergency Control Center at the Meliadine Site.

During fuel transfer operation, the vessel master and the operator of the OHF always have a two-way communication on a continuing basis. This two-way communication is the direct communication by radio and the use of the cell phone.

8.1.1 Communication with the Public

Communication with public bodies during the state of emergency is the responsibility of the General Mine Manager or the Communications & Public Affairs Corporate Director.

In the case that the community of Rankin Inlet should need to be evacuated on short notice, the Emergency Response Team will immediately assist in the evacuation of the community. The General Mine Manager will immediately contact the Mayor of the Hamlet to inform regarding the situation. In addition, if safe to do so, a radio notification should be immediately broadcasted on the Rankin Inlet Radio station.

8.1.2 Hand Held Radio Communication

The channels used for hand held radio communication on the Meliadine Project site, the All Weather Access Road, OHF, and associated facilities are as follows in Table 4:

Table 4 - Meliadine Radio Channels

CAMP
CONSTRUCTION
EXPLORATION
ROAD
UG OPERATION
DRILL & BLAST
WAREHOUSE
MAINTENANCE

**Grey represents channels used at Itivia

8.1.3 Contacts

Internal contact information is contained in Table 5 for all Agnico personnel involved in spill recovery. Table 6 contains contact information for contractor contacts which can be called for assistance with spill recovery. Table 7 is a list of government officials and external contacts to notify and provide subsequent reporting.

Table 5 - Agnico Contact

Title	Name	Telephone No.
Sr. Vice President, Environment and Sustainable Development	Louise Grondin	416.847.8656 Cell: 819.724.2020
Vice President of Environment and Sustainable Development	Michel Julien	416-947-1212 ext. 3738 Cell: 514.244.5876
Corporate director, Communications & Public Affairs	Dale Coffin	416.847.8669 Cell: 647.274.4154
Director Shared Services	Jason Allaire	819.759.3555 ext. 4608004 Cell: 819.355.2608
Meliadine General Mine Manager	Martin Plante	819-759-3555 ext 4608058 Cell: 819.856.1873
H&S Superintendent H&S General Supervisor Emergency Measure Counsellor	Dominic Richard Nathalie Ledoux Dave Loder Darren Wilcox	819.759.3555 ext.4603076 Cell: 819.856-4104 819.759.3555 Ext 4603968 819.759.3555 ext.4603113
Environmental Superintendent	Nancy Duquet Harvey	819.759.3555 ext.4603175 Cell: 819.856.4385
Environmental General Supervisor	Kevin Buck	819.759.3555 ext.Cell: 819.860.4515
SR. Environmental Coordinator	Jennifer Brown Daniel Gorton	819.759.3555 ext.4603996
Environmental Department	Environmental Technicians	819.759.3555 ext.4603903 & 4603925

On-site Nurses		819.759.3555 ext.4603011

Table 6 - Contractors / Local Contacts

Title	Telephone No.	Contact in Emergency for:
Nolinor Aviation Services	Protocol Agent (819).759.3555 ext. 8008 Emergency (450) 476.0018 (888) 505.7025	Flight services for additional crew, or additional supplies
Calm Air	(867) 645.2746 Emergency (204) 677.5013 (204) 677.5019	Flight services for additional crew, or additional supplies
Dyno Nobel Explosives Ltd.	(867) 793-4610 ext. 3926	Heavy Equipment, Man power, Emergency Blasting
Desgagnes Group (Shipping)	(867) 979-3799	Fuel Hauler
Sarliaq Holdings Ltd.	Richard- Office 867.645.2653 Cell 867.645.1281 Silu - Office 867.645.2651 Cell 867.645.7645 James - Office 867.645.2759 Cell 867.645.6718 Kilabak - Office 867.645.2759 Cell 867.645.7851 Marvin - Cell 867.645.6799 Shop - 867.645.2753	Equipment, man power, Ground transportation services
M & T Enterprises	Sean Sykes – 250.505.6105 Raymond Boisvert – 250.551.2894	Equipment, man power, Ground transportation services
Inuksuk Construction	John Winter – 902.483.0398 Tony King – 902.478.4700 Inukshuk Construction – 867.645.4032	Man power, equipment, trades personnel i.e. pipefitter, plumber, electrical

Table 7 - External Contacts

All phone numbers will be reviewed each year at the beginning of July and updated.

Organization/Authority	Telephone Number	Fax Number
NT-NU 24-Hour Spill spills@gov.nt.ca	(867) 920-8130	(867) 873-6924
Workers' Safety & Compensation Commission	(867) 979-8500	(867) 979-8501
Kivalliq Inuit Association (KIA)	(867) 645-5725	(867) 645-2348
Nunavut Water Board (NWB)	(867) 360-6338	(867) 360-6369
CIRNAC Inspector (Tim Morton Nunavut Regional Office (NRO) – Indigenous and Northern Affairs Canada (INAC) – Iqaluit	(867) 669-2442 (867) 975-4500	(867) 669-2871 (867) 975-4560
Department of Fisheries and Ocean (DFO) – Nunavut Regional Office - Iqaluit	(867) 979-8000	(867) 979-8039
Manager, Environmental Protection, Government of Nunavut – Kristi Lowe	(867) 975-7748	(867) 975-6099
Kivalliq Health Services – Rankin Inlet Emergency on call Nurse	(867) 645-8300 (867) 645-6700	(867) 645-8304
Rankin Hamlet Office	(867) 645-2895	(867) 645-2146
Rankin Ambulance or Fire Emergency	(867) 645-2525	
RCMP 24 Hour Emergency Number	(867) 645-0123	
Canadian Coast Guard (in the event of a spill to the marine environment 24 hours) Superintendent, Environmental Response Coast guard e-mail for notification iqanordreg@innav.gc.ca	(800) 265-0237 (519) 383-1954 (867)-979-5724	 (519) 337-2498
Transport Canada – Marine Safety Jaideep Johar Ian Salisbury Philip Levesque - Marine Safety Inspector	(204) 880-0754 or (204) 984-8618 (204) 984-2254 (780) 495-8360 (250) 754-0290 (204).984.5786 204.801.6951(cell)	 (780) 495-8607

SECTION 9. ROLES AND RESPONSIBILITIES

9.1.1 First Responder (Third Party Contractor (Intertek Personnel) and Spud Barge Supervisor)

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:

- Oversee the fuel transfer operation;
- Follow procedure set-up in the OPEP to prevent and minimize spill (See Section 5.3)
- In case of spill to land, ice or water, contact the Rankin Inlet Gatehouse to report the incident;
- Identify and contain the spill, IF SAFE TO DO SO; commence preparing spill response equipment, and
- Participate in spill response as a member of the clean-up crew.

9.1.2 Supervisor Fuel Discharge

The responsibilities of the Supervisor are as follows:

- Contact the Rankin Inlet Gatehouse; contact the Environment Department;
- Gather facts about the spill; and
- Participate in spill response.

9.2 Roles & Responsibilities of the Emergency Control Group

Below are the roles and responsibilities of the Emergency control group.

9.2.1 Official In-Charge

The Official In-Charge (General Manager or designate) will take charge for overseeing and approving the overall emergency strategy.

Immediate duties of the Official In-Charge include:

- Consult with the Incident Commander the status of emergency;
- Appoint an Emergency Log Recorder to maintain a written record of the time and events, including all discussions, instructions and decisions made by the Emergency Control Team;
- Issues specific tasks to the members of the Management Team as they arrive at the Control Room, as per this guideline;
- Brief the Emergency Control Team;
- Ensure that the safety of personnel is maintained, throughout the operation;
- Ensure procedures are in place for prompt dispatch of requested personnel, materials and

equipment to the emergency area;

- Arrange for all reports to be presented at specific intervals to the Emergency Control Team;

- Finalize the recommendations of the Incident Commander for rescue and recovery operations;

- The Official In-Charge is the only person authorized to release information to Government Agencies, Corporate Office or the Local Communities. He may delegate this activity to other members of the Emergency Control Team;

    - Verify all information you release;
    - Keep a record of all inquiries (media and non-media);
    - Do not speculate on causes;
    - Do not speculate on resumption of normal operations or when the problem will be solved; and
    - Advise that further updates will be forth coming.

- Notify the corporate management, if the following appear probable:

    - Fatalities;
    - Injuries that could probably become items of local, regional or national media interest;
    - There is a public health or environmental risk;
    - An incident involving chemicals where there is a large volume or the potential for over reaction (e.g., cyanide);
    - A spill of effluent or contaminated water or chemical substance to an area that lies outside the area of drainage control of the mine site (i.e., an external spill);
    - Mine operations may be stopped for more than two (2) days; and
    - Government authorities will become involved.

- Ensure all response teams, regulatory agencies and any other agency on emergency alert notice are advised when the emergency has ended;

- Ensure all documentation (i.e., notes, log sheets, written instructions, etc.) is gathered for the creation of the final report; and

- Participate in debriefing.

9.2.2 General Superintendents

- Energy & Infrastructure, Operations and Maintenance will report to the Emergency Control Room and support the General manager/Designate in whatever capacity required;

- They will also ensure that the Superintendent/Designate in each of their respective Department's is aware of the emergency; and

- They will assist with the investigation and write up of the final report.

9.2.3 Incident Commander: A Trained Staff Member (ERT Coordinators or Supt.)

The responsibilities of the Incident Commander include:

- Ensure Security has been notified of emergency;
- Ensure the evacuation procedures have been activated, if required;
- Ensure that there are sufficient ERT members available to respond to the emergency;
- Ensure that the ERT has back-up support, a standby Team;
- Ensure that ERT Team has refreshments and nourishment (if the emergency requires several hours to resolve);
- Assess the size and severity of the emergency and the likely consequences. Establish response priorities; as well coordinate prevention of fire or explosion;
- Maintain communication with the ERT Captain;
- Advise the Official In-Charge of the ERT Team's activities, regarding the rescue and recovery operations;
- Appoint sufficient personnel, equipment and outside services are available. Utilize the members of the Emergency Control Team to organize these resources;
- Advise Official In-Charge when the emergency situation is under control and give the "All Clear";
- Participate in emergency investigation;
- Coordinate an orderly return to normal operating conditions;
- Arrange for a debriefing session, and utilize the services of all involved in resolving the emergency; and
- Assist to write the final report.

9.2.4 Emergency Response Team (ERT Team) Duties:

- The ERT Team Members must report to the Fire Hall, when paged for a "Code One" emergency;
- ERT Team Members will be given instructions on the emergency by the Incident Commander;
- ERT Team Members will follow instructions from the Incident Commander and will not put the Team at risk; and
- The ERT Team Captain will maintain radio contact with the Incident Commander throughout the emergency.

9.2.5 Environmental Superintendent /Designate Duties:

The following are the responsibilities of the Environmental Superintendent/Designate;

- Provide technical advice on probable environmental effects resulting from a spill and how to minimize them;
- Provide advice to the Official-in-Charge for appropriate spill response procedures;
- Ensure that Environmental Staff are available to direct the spill response action plan; and
- Assist with restoring of the Operations back to normal operating standards.

9.2.6 Health and Safety Superintendent/Designate Duties:

The Health and Safety Superintendent/Designate will be responsible for:

- Ensure that an Incident Commander is in place to oversee the ERT Teams;
- Ensure that all Management respond to the emergency and meet in the emergency control room;
- Oversee all activities that require Security or Nursing and arrange for Medevac transport, if required;
- Assist with getting a “head count” for the Official in-charge; and
- Assist with obtaining outside help if required.

9.2.7 Energy & Infrastructure Superintendent/Designate Duties:

The following are the responsibilities of the Energy & Infrastructure Superintendent/Designate;

- Ensure that all employees are accounted for;
- Ensure that all ERT Crew Members respond to the “ Code One” emergency;
- If the “ Emergency” involves the site facilities, assist the Official-in-Charge with the action plan to deal with the emergency;
- Assist as required by supplying equipment and/or manpower; and
- Assist with restoring of the Operations back to normal operating standards.

9.2.8 Human Resources Coordinator/Designate Duties:

The following are the responsibilities of the Human Resources (HR) Superintendent/Designate:

- Ensure that all HR employees are accounted for; and

- Provide assistance to the Official-in-Charge if there are employee issues, such as injuries, transportation requirements, etc.

9.2.9 Health Care Professional (Nurse/Medic):

The on-site health professionals are responsible for the following:

- Providing on-site first aid and other medical support;
- Establish a triage location if there are multiple casualties;
- Arrange for medevac transportation, if required; and
- Ensuring that the first aid room is maintained at all times, by using First Responders as support.

9.2.10 Security (Sarliaq Holdings Ltd.):

The on-site Security Supervisor is responsible for the following:

- Ensuring that the Security officer has activated the appropriate level of emergency notification;
- Ensure that access points to the emergency are properly guarded;
- Notify the Rankin Inlet Gatehouse if the emergency involves the all-weather private road (AWPR); and
- Assist with other duties as requested by the Emergency Control Group.

9.3 Debriefing

After an incident has taken place and the location is brought back to normal operating standards a debriefing session will occur between ECG, Field Supervisors for the incident, ERT Captain(s), and the supervisor of the department involved with the spill.

The point of this debriefing session to determine the *who, what, where, when, why, and how* the incident occurred. It will also be the time to reflect on the steps that were taken to carry out the response and to determine what was done right and what corrective measures need to be put in place to better the response if needed in the future.

SECTION 10. GENERAL SPILL PROCEDURES

SPILL RESPONSE PRIORITIES

1. **Safety of the personnel working at or around the OHF**
   a. Contact all personnel working around the spud barge area and make them aware
   b. Make contact with the vessels Captain to make aware the ship and stop the transfer of the product
   c. Wear appropriate PPE
   d. STOP the spill
2. **Make safe the facility**
   a. Create a no entry perimeter to ensure unaware persons do not enter the area in which the incident took place.
   b. Barricade entrances to the facility with red danger tape
   c. Have a person designated to watch entrances to ensure no community persons come on to site.
3. **Make the community of Rankin Inlet aware of the Spill to ensure measures can be taken to ensure safety of the community**
   a. Contact Mayor / Hamlet counsel
   b. Fire department
   c. RCMP
4. **Prevent fires or explosions / Stop all ignition sources**
   a. Disconnect power supplies
   b. Do not contain diesel fuel if vapors might ignite
   c. Allow fuel vapors to evaporate before intervention
5. **Minimize the Spill**
   a. When safe to proceed stop the spread of the product
   b. Use spill response equipment in emergency sea cans and ask for additional material if the spill is greater than 5 m^3
6. **Notice and Report the Spill**
   a. Spill needs to be reported to Transport Canada, Coast Guard, Environment and Climate Change Canada and Government of Nunavut immediately
   b. Other governing bodies will also be notified (see section 10.2)
7. **Environmental Impact**
   a. Deter wildlife from entering spill area. Keep track of any wildlife mortalities
   b. Determine what impacts the spill will have on the Environment
8. **Clean-up**
   Commence clean-up of the spill

10.1 Coordination with Government Agencies

10.1.1 Coordination with TC Technical Service Environmental Response

In the event of a marine spill TC Technical Service Environmental Response (TC) will be contacted immediately regarding the incident. Agnico will adhere to further recommendations from TC in response to the spill.

TC will also be contacted annually prior to the deposition of fuel at the OHF. As well, annual approval of this OPEP will be required by TC Pollution Prevention Officer.

10.1.2 Coordination with Canadian Coast Guard

In the event of a marine spill, the coordination with Canadian Coast Guard (CCG)[2] is required and they will be contacted to report the incident. A description of the event will be provided to the CCG Environmental Response. Agnico will adhere to further recommendations from CCG in response to the spill.

On an annual basis prior to the shipment of fuels to the OHF commencing, Agnico will contact the CCG and make them aware that the shipping season will be starting so they are aware that fuels will be travelling to Agnico's Rankin Inlet Fuel Tank Facility constructed in Rankin Inlet.[3] Also Agnico will inquire if there are any updates to "*The Central and Arctic Regional Response Plan (2008).*"

Agnico's Environmental Group will annually, prior to fuel transfer, review "*The Central and Arctic Regional Response Plan (2008).*" A copy of this plan can be found in Appendix F for reference. The plan will be reviewed to ensure that the OPEP and the actions of Agnico's OHF meet all requirements listed for an OHF.

10.1.3 Other Government Agencies

Agnico will contact all government agencies associated with the Meliadine Gold Project as is the norm for any reportable spill. These groups include: Government of Nunavut (GN) via 24 hour spill reporting line, Crown - Indigenous Relations and Northern Affairs Canada (CIRNAC), Department of Fisheries and Oceans Canada (DFO), Environment and Climate Change Canada (ECCC), Nunavut Water Board (NWB), and Kivalliq Inuit Association (KIA).

10.2 Reporting Requirements

As per the Canada Shipping Act. spills to the marine environment will be reported to the TC Technical Service Environmental Response and Canadian Coast Guard (contact numbers in Table 7). Marine spills will be reported in accordance with TC Guideline TP- 9834E, *Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and /or Marine Pollutants*. Others to receive the spill report include the KIA, Hamlet of Rankin Inlet, DFO, ECCC, Canadian Coast Guard and INAC. Incidents that require media communications will be the responsibility of Agnico General Mine Manager or Public Affairs Corporate Director. The copy of NT-NU spill report form is provided in Appendix H.

To ensure compliance with Section 36(3) of the *Fisheries Act*, all spills of fuel or hazardous materials, regardless of quantity, into a water body or onto ice will be reported immediately to the NT-NU 24-HOUR SPILL REPORT LINE (phone: (867) 920-8130, fax: (867) 873-6924, spills@gov.nt.ca).

[2] CCG: 1-800-265-0237, Superintendent Environmental Response Phone: 519-383-1954 Cellphone :519-381-6186

[3] *JJ Brickett with CCG was contacted on July 7, 2015*

Agnico possess a thorough internal spill reporting system that documents all spills for internal tracking. A copy of this Agnico internal spill report can be found in Appendix G, this is this spill report that the first responder will have to complete. Regardless of the volume, these spills are all reported to the Environment Department and if the NT-NU spill limits are exceeded or if the spill occurs in a water body, the Environmental Department reviews the incident, produces the NT-NU spill report and submits the NT-NU spill report to the regulator listed above. Investigation of all reportable spills is completed by the Meliadine Environment Department.

10.3 Treatment and Disposal

All diesel recovered through the spill response and any contaminated material will be taken to the Meliadine Project site for recovery and, if applicable, incineration. It could also be packaged for disposal/recycling by a certified hazardous waste management company in southern Canada.

10.4 Resuming Unloading

The unloading of fuel from the tanker to the OHF will not resume if it hinders the response to the spill in any way. Unloading will resume once all problems are corrected, thus ensuring that the spill will not continue.

SECTION 11. SPILL SCENARIOS AND RESPONSE STRATEGIES

Agnico will strive to prevent any accidental spills and take all reasonable steps to minimize the risk of spill incidents and their impact on the environment. A mock spill exercise is conducted this year and the summary is provided in Appendix I.

11.1 Product Properties and Response Strategy

P50 Diesel is a bright oily substance that has a low viscosity. It spreads rapidly on the water, has a low solubility in salt water (60 mg/L), and a high evaporation rate as described in the text box below.

At Itivia, the wind is largely from the NW to N and the current in the access passage is 0.93 km/h to the south.

Predicted Evaporation Rate of Spilled Diesel

Weight percent Evaporation = (5.8 + 0.045T) in(t)
Where T = water temperature
t = time in minutes

After a time span of 60 minutes at a surface temperature of 5°C, up to 25% weight of the spilled diesel would have evaporated.

After 240 minutes, or 4 hours, the weight percent of the diesel that would have evaporated would be 33%.

Source: *Environment Canada, Emergencies Science and Technology Division*

As a result of the properties of diesel and the environmental conditions that predominate at Itivia, the spill response will aim to stop the spilled product from spreading across Melvin Bay to the south shore and into the access passage. This could include activating the Shipboard Oil Pollution Emergency Plan. The tanker has response equipment on board and a fully trained crew in spill response. This, coupled with a shore-based response under the OPEP, ensures sufficient resources are available to control and recover as much diesel fuel as feasibly possible.

11.2 Pipeline safeguards

There are a number of safeguards in operating the ship-to-shore pipeline; these include:

- Save-all trays to capture any minor spills at the ends of the floating pipeline;
- Dry-break couplings at both ends of the floating pipeline;
- A pressure test is performed before the diesel transfer to confirm the system is free of leaks; and

- Both the crew on the tanker and Agnico's shore based personnel are fully trained in spill response and spill recovery.

11.3 Wildlife

During a spill event, Agnico will take care to deter any animal that will be near the spill area to minimize the risk to wildlife. In a case of mortalities, Agnico will track any mortality and report these numbers to the GN and ECCC.

11.4 Scenarios

Three scenarios are considered, these being:

1. A spill between the ship and the flange of the OHF, the floating pipeline, resulting in a spill smaller than 1000 L of diesel fuel;

2. A major failure between the ship and the flange of the OHF, the floating pipeline, resulting in a spill greater than 1000 L but smaller than 5000 L of diesel fuel; and

3. Spill greater than 5000 litres.

In most instances Agnico personnel and/or contractors will be able to respond to the spill but if necessary, backup can be requested by calling for the assistance of the Agnico Emergency Response Team that is stationed at the Meliadine site located 35 kilometers away. The ERT can be at Rankin Inlet within 60 minutes to take charge of the spill response. Agnico will make every effort to have its equipment and resources deployed within 6 hours of an incident.

Scenario 1: **Loss between the ship and the flange of the OHF, the floating pipeline, resulting in spill smaller than 1000 L of diesel fuel.**

Appropriate Actions	Resources
1. Communicate with vessel and immediately stop the ship-to-shore transfer of fuel, if it's safe to do. The transfer should not restart in a manner that would interfere with the immediate, effective and sustained response to the oil pollution. 2. Make sure that the environment is safe for the facility and vessel personnel, the facility and Rankin Inlet community. 3. Make sure that risk of fire or explosion are minimize. 4. Contact person found on OHF Declaration to initiate the OPEP. 5. Minimize the oil pollution incident by containing the spilled fuel to spreading within the marine environment, if it's safe to do. 6. Notify CCG, local and regulatory authorities. 7. Containment boom is manned to prevent the escape of fuel outside the boom. 8. If necessary, place a diversion boom outside the containment boom to stop the diesel from getting onto the beach. 9. Spread absorbent material on the spill to capture it. 10. Monitor any fuel that could not be recovered and collect water samples near the spill site and in the access passage for analysis. Repeat as necessary. 11. If diesel reaches the beach, excavate the contaminated beach material and take it to the Landfarm area at the Meliadine site.	a. Crew on the tanker trained in spill response. b. Agnico's shore based personnel trained in spill response and recovery. c. Emergency Response Team to take control of the spill response and recovery. d. Spill response equipment and supplies maintained on board the tanker and also in the sea can located on shore of Itivia Site Fuel Storage and Containment Facility. e. Save-alls (Pop-up pools/plastic totes) placed under the pipeline manifolds to collect minor spills. f. Shore-based boat to position booms. g. Absorbent booms to recover spilled diesel on sea water. h. Heavy equipment such as excavators, back hoes, vacuum trucks, and dump trucks available if beach is contaminated.

Scenario 2: **Loss between the ship and the flange of the OHF, the floating pipeline, resulting in spill greater than 1000 L but smaller than 5000 L of diesel fuel.**

Appropriate Actions	Resources
1. Communicate with vessel and immediately stop the ship-to-shore transfer of fuel, if it's safe to do. The transfer should not restart in a manner that would interfere with the immediate, effective and sustained response to the oil pollution. 2. Make sure that the environment is safe for the facility personnel, the facility and Rankin Inlet community. 3. Make sure that risk of fire or explosion are minimized. 4. Contact person found on OHF Declaration to initiate the OPEP. 5. Minimize the oil pollution incident by containing the spilled fuel to spreading within the marine environment, if it's safe to do. 6. Notify CCG, local and regulatory authorities. 7. Containment boom is manned to prevent the escape of fuel outside the boom. 8. If necessary, place a diversion boom outside the containment boom to stop the diesel from getting onto the beach 9. Spread absorbent material on the spill to capture it 10. For larger amounts of spilled materials on water, use absorbent booms to collect the spilled diesel 11. Monitor any fuel that could not be recovered and collect water samples near the spill site and in the access passage for analysis. Repeat as necessary. 12. If diesel reaches the beach, excavate the contaminated beach material and take it to the Landfarm area at the Meliadine site.	a. Crew on the small tanker trained in marine spill response. b. Crew from the large tanker anchored outside the access passage. c. Agnico's shore based personnel trained in near shore spill response and recovery. d. Emergency Response Team trained for near shore spill response. e. Shore-based boat to position booms and spread absorbent material. f. Spill response equipment and supplies maintained on board the tanker, in Agnico sea can locate at Itivia Site Fuel Storage and Containment Facility. g. Additional booms to place outside the containment boom. h. Additional boats can be transported from the Meliadine site as well local boats can be rented from local contracting companies i Heavy equipment such as excavators, back hoes, vacuum trucks, and dump trucks for waste materials. j. in the case of larger spills an Incident Command System will be set up at the Meliadine site as laid out in the Meliadine Emergency Response Plan.

Scenario 3: **A spill >5,000 litres**

In the case of an ***Extreme*** spill, Agnico will follow the actions listed in Scenario 2 to complete the best clean up possible. Between the spill response equipment that the tanker delivering fuel has on board and the spill response supplies at the OHF, a spill up to the size of 5, 000 - 10, 000L will be able to be controlled and cleaned up. However if the spill is greater than 10, 000L, at this point Agnico will require external assistance with the clean-up.

The Canadian Coast Guard (CCG) and Transport Canada are made aware each year prior the fuel transfer, there is a possibility that under direction of CCG that their spill depot supplies located in Rankin Inlet may be used.

SECTION 12. PREVENTIVE MEASURES

Agnico recognises that spill prevention is more desirable than any modern efficient cleanup measures after the fact. Preventive measures have been adopted in relation to any transport, transfer, use and storage of diesel fuel. The tankers carry a Ship Oil Pollution Emergency Plan (SOPEP) (Appendix A) as per the MARPOL 73/78 requirement under Annex I. All ships with 400 GT and above must carry an oil prevention plan as per the norms and guidelines laid down by the International Maritime Organization (IMO).

A SOPEP contains the following things:

- The action plan contains duty of each crew member at the time of spill, including emergency muster and actions;
- General information about the ship and the owner of the ship etc.;
- Steps and procedure to contain the discharge of oil into the sea using SOPEP equipment;
- On-board Reporting procedure and requirement in case of oil spill;
- List of authorities to contact and reporting requirements in case of oil spill. Authorities like port state control, oil clean up team etc. are to be notified;
- Drawing of various fuel lines, along with other oil lines on board vessel with positioning of vents, save-all trays, etc.;
- General arrangement of ship, which includes location of all the oil tanks with capacity, content, etc.; and
- The location of the SOPEP locker and contents of the locker with a list of inventory (Marine Insight 2012).

The Spill Contingency Plan, Emergency Response Plan and the Oil Pollution Emergency Plan identify potential causes of emergencies and provides for the development and implementation of strategies to minimize the likelihood of the same.

As described in the Spill Contingency Plan, exercises are part of training for the Emergency Response Team. This includes comprehensive spill response exercise to practice the use of spill response equipment, including the use of booms and oil water separator.

The OPEP is updated annually based on the results of spill exercises, changes to the infrastructure at Agnico's Fuel Handling Facilities, changes to procedures and other variables. The updated OPEP is distributed to the Agnico Emergency Response Team, TC, the Kivalliq Inuit Association, the Municipality of Rankin Inlet and other agencies as appropriate.

12.1 Training

The environmental department and ERT team received training from a response organization and as a result will be able to respond to or assist with incidents that may occur at the OHF.

12.1.1 Meliadine site Personnel

A designated Emergency Response Team consisting of on-site personnel is established at Agnico's Meliadine Project site. Agnico ensures that the ERT is trained and staffed in sufficient number so that

the ERT is 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 Spill Contingency Plan, the Oil Pollution Emergency Plan and appropriate emergency spill response methodologies. The ERT have up to 20 members, each of whom will be trained.

The training includes the following:

- Worker health and safety during emergency interventions;
- 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;
- Communication methods and signals;
- Desktop exercises of “worst case” scenarios;
- Emergency evacuation;
- Fires or explosions;
- Emergency equipment and use;
- PPE and clothing;
- Marine shoreline recovery operations; and
- The likely causes and possible effects of spills.

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

Basic spill response training is completed by all Agnico employees and contractors working on the Meliadine project as part of the mandatory induction for all personnel arriving on site. ERT members receive more extensive spill response training and learn how to respond while wearing personal protective clothing, use of specific spill response gear, proper deployment of absorbents and maritime boom.

12.1.2 OHF Personnel Training

Prior to the first discharge of fuel from the vessel to the OHF, a mandatory training takes place. This is a review with all the personnel responsible for the shore based portion of the fuel transfer, including the third party contractor and the Rankin Inlet supervisor, the current OPEP and make them aware of the procedures to follow in case of a spill before the first fuel barge arrives. A copy of the 2018 log sheet is provided in Appendix I.

A mock spill training is planned for the summer of 2019 to practice the response of all involved personnel to a hypothetical spill situation.

12.1.3 Boat Operators

All people involved in the supervision during operation and / or on the spill response has complete the training course for the pleasure craft operator. Records of pleasure craft operator certification is retained by the Meliadine Training department.

All concerned persons working for Agnico Eagle Mines Ltd. must possess a pleasure craft operator card and provide proof of this certification prior to operating any boat relating to the Meliadine project which includes the Rankin Inlet Marshalling facility. This includes emergency responders.

SECTION 13. COASTAL SHIPPING

13.1.1 Coastal Shipping

Please refer to Appendix A - 1.2 for the 2018 contact information for Coastal Shipping during the barge season. This is reviewed with Coastal Shipping on an annual basis.

SECTION 14. REFERENCES

Transport Canada *Oil Handling Facilities Standards*, TP12402E.

Canadian Coast Guard, Central & Arctic Region, 2008. *Regional Response Plan.*

Marine Insight, 2012. What is Ship Oil Pollution Emergency Plan (SOPEP)?
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Moller, T.H. & Santner, R.S. 1997. *Oil Spill Preparedness and Response: the Role of Industry,* 1997 International Oil Spill Conference, Technical Report IOSC-005.

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Transport Canada, TP-10783, 1997. *Arctic Waters Oil Transfer Guidelines.*

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Transport Canada, TP-13585, 2008. *Environmental Prevention and Response National Preparedness Plan.*

Transport Canada Guideline TP- 9834E, 2009. *Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and /or Marine Pollutants*.

Journal of Petroleum Science Research (JPSR) Volume 2 Issue 3, July 2013 - Modeling Oil and Petroleum Evaporation by Merv F. Fingas

APPENDICES

APPENDIX A – SOPEP and Contact info – Desgagnes Group

Transport Desgagnés Inc.

21, rue du Marché-Champlain
Québec (Québec) G1K 8Z8
Canada

Téléphone : (418) 692-1000
Télécopieur : (418) 692-6004
info@desgagnes.com

M/T *Dara Desgagnés*

Shipboard Marine Pollution Emergency Plan

For Oil and Noxious Liquid Substances

As defined by MARPOL 73/78, Annex I, Regulation 37 and annex II, Regulation 1

Prepared by Transport Desgagnés In

October 31, 201

Distribution List

M/T Dara Desgagnés (1)
M/T Esta Desgagnés (1)
M/T Jana Desgagnés (1)
Transport Desgagnés Inc. Emergency Room (1)
Transport Canada, Marine Safety (1)

SHIPBOARD MARINE POLLUTION EMERGENCY PLAN

In accordance with Regulation 37 of Annex I and Regulation 17 of Annex II of MARPOL 73/ 78

SHIP'S IDENTIFICATION

GL-Register-Number	33862
Name of Ship	DARA DESGAGNES
Distinctive Number or Letters (Call Sign)	VCBW
IMO-Number	9040089
Type of Ship	Chemical Tanker
Port of Registry	Quebec
Gross Tonnage	6262
Flag	CANADA

Owner / Managers: see „Ship Interest Contacts“

GL **Approved**

as being in compliance with
MARPOL 73/78 Annex II Reg. 17 and Annex I Reg. 37
(former Reg.16 and Reg. 26)
authorised by the Government of Canada

EdM

Hamburg **2013-01-07** **Ref.-No. 13-001410**

Table of Contents

Foreword

1. This Plan is available to assist the ship's personnel in dealing with an unexpected discharge of oil or noxious liquid substances. Its primary purpose is to set in motion the necessary actions to stop or minimize the discharge of those substances and to mitigate its effects.

1.2 Effective planning ensures that the necessary actions are taken in a structured, logical and timely manner.

1.3 The primary objectives of this Plan are to :

- prevent pollution;
- stop or minimize outflow when a damage to the ship or its requirements occurs;
- stop or minimize outflow when a operational spill occurs in excess of the quantity or instantaneous rate permitted under the present Convention.

1.4 Further, the purpose of the Plan is to provide the Master, officers and certain crew members with a practical guide to the prevention of marine spills and in carrying out the responsibilities associated with regulation 37 of Annex I and Reg. 17 of Annex II of MARPOL 73/ 78:

- procedures to report an oil / marine pollution incident;
- Coastal State contacts (Focal Points) and Port Contact Lists to be contacted in the event of any pollution incident;
- response actions to reduce or control the discharge of substances following an incident;
- co-ordination with national and local Authorities in combating a pollution.

1.5 In summary, the Plan will serve to promote a practised response when the ship's personnel is faced with a spill.

1.6 Although the Plan is designed as a ship-specific tool it must also be considered as an additional instrument and as a link to shore-based plans. With this the Plans allows an efficient co-ordination between the ship and shore-based Authorities/ Organizations in mitigating the effects of any pollution incident.

1.7 The Plan includes a summary flowchart (see under iii) to guide the Master through reporting and acting procedures required during an oil pollution incident response.

1.8 The Plan is likely to be a document used on board by the Master and officers of the ship and must therefore be available in the working language used by them.

Summary Flowchart

Discharge of Oil
Probable or Actual

⇩

Assessment of the Nature of Incident

⇩

Actions required

Alert crew members
Identify spill source
Personell Protection
Spill Assessment
Vapour Monitoring
Evacuation

REPORTING	**ACTION TO CONTROL DISCHARGE**
By Master and/ or designated crew member	**Measures to minimize the escape of oil and threat to the marine environment**

REPORTING

By Master and/ or designated crew member

When to report
All probable and actual spills

How to report
- By quickest means to coastal radio station
- Designated ship movement reporting station or
- Rescue Co-ordination Centre (at sea)
- By quickest available means to local autho-rities

Who to report
- Nearest Coastal State Harbour and termi-nal operators (in port)
- Shipowner´s manager; P & I insurer
- Head Charterer; Cargo owner
- Refer to contact lists

What to report
- Initial report (Res. A.851(20))
- Follow-up reports
- Characteristics of material spilled
- Cargo/ ballast/ bunker dispositions
- Weather and sea conditions
- Slick movement
- Assistance required
  - Salvage
  - Lightening capacity
  - Mechanical equipment
  - External strike team
  - Chemical dispersant/ degreasant

ACTION TO CONTROL DISCHARGE

Measures to minimize the escape of oil and threat to the marine environment

NAVIGATION MEASURES

- Alter course/ position and/ or speed
- Change of list and/ or trim
- Anchoring
- Setting aground
- Inititate towage
- Assess safe haven require-ments
- Weather/ tide/ swell fore-casting
- Slick monitoring
- Record of events and commu-nications taken

SEAMANSHIP MEASURES

- Safety assessment and pre-caution
- Measures for safety of crew
- Advice on priority countermea-sures/ preventive measures
- Get vapours off deck
- Damage stability and stress consideration
- Ballasting/ deballasting
- Internal cargo transfer opera-tions
- Emergency ship-to-ship trans-fers of cargo and/ or bunker
- Set up shipboard response for:
  - Leak sealing
  - Fire fighting
  - Handling of ship-board response equipment (if available)

⇩

STEPS TO INITIATE EXTERNAL RESPONSE

- Refer to Costal Port State listings for local assistance
- Refer to ship interest contact list
- External clean-up resources required
- Continued monitoring of activities

⇩

Introduction

1. This Plan is written in accordance with the requirements of the Canadian Regulations for the Prevention of Pollution from ships and for Dangerous Chemicals SOR/2012-69, regulation 37 of Annex I and regulation 17 of Annex II of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto. As recommended by IMO this plan is a combination of a SOPEP and a Shipboard Marine Pollution Emergency Plan for noxious liquid substances.

2. The purpose of the Plan is to provide guidance to the master and officers on board the ship with respect to the steps to be taken when an oil and/or noxious liquid substance pollution incident has occurred 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 approved by the Classification Society for the Administration and, except as provided below, no alteration or revision shall be make to any part of it without the prior approval of the Classification Society for the Administration.

5. Changes to Section 5 and the appendices will not be required to be approved by the Classification Society for the Administration. The appendices will be maintained up to date by TRANSPORT DESGAGNÉS INC.

Regulatory Requirements

The Canadian Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals SOR/2012-69 and Regulation of Annex I of MARPOL 73/78 require every oil tanker of 150 gross tons and above, and every vessel other than an oil tanker of 400 gross tons and above, to have a shipboard emergency plan with four elements:

1) Procedures for reporting oil pollution incidents;
2) A listing of authorities to be notified;
3) A detailed description of actions to be taken by a vessel's crew to reduce or control an oil discharge; and
4) Procedures for co-ordinating onboard activities with national and local authorities.

This Shipboard Marine Pollution Emergency Plan meets the MARPOL requirements.

The plan required by Regulation 37 of Annex I and Regulation 17 of Annex II of MARPOL 73/78 will **not** fully meet the US regulations under the Oil Pollution Act of 1990 (OPA 90). However, OPA 90 regulations only pertain to tankers and other vessels that carry oil either as primary or secondary cargo.
They do not apply to dry cargo vessels such as freighters, containerships, Ro/Ro, etc. While there is no requirement to do so, operators of these vessels are encouraged to develop Vessel Response Plans (VRP) in the unlikely event of a pollution incident as the result of bunker transfer operations or other incidents involving fuel. The OPA 90 VRP for this vessel meets the intent of OPA 90 for operations in US navigable waters.

Under OPA 90 each state is allowed to develop more stringent regulations for spill prevention and spill response activities. As such, some states also require owners and operators of dry bulk vessels to develop and maintain Vessel Response Plans. One state also requires owners and operators of tank and dry cargo vessels to develop and maintain Spill Prevention Plans.

US WATERS NAVIGATION
Then In case of navigation in US waters Masters and Officers must refer to the US VRP Prepared by Hudson Marine for the company and follow the instructions available in case of an emergency situation in US waters.

Safety and Environmental Policy

POLICY STATEMENT

It is the policy of the Company to provide healthy and safe working conditions, and to maintain a safe pollution-free operating practice that complies with national and international regulations and relevant standards and guidelines.

Company objectives are to:

- provide for safe practices in ship operation and a safe working environment;
- establish safeguards against all identified risks; and
- Continuously improve the safety management skills of personnel ashore and aboard ship, including preparing for emergencies related both to safety and environmental protection.

The objectives will be achieved by:

- maintaining high standards of safety consciousness, personal discipline and individual accountability by adherence to a comprehensive and documented system of training;
- actively promoting employee participation in measures aimed at improving safety and protecting the environment;
- keeping all personnel fully informed of any known or potential hazards that may affect themselves, their colleagues, the ship or the environment by transmittal of pertinent documentation;
- ensuring adherence at all times to the documented operating procedures by a system of internal verification of procedures and activities; and
- continuously reviewing all mandatory rules, regulations industry codes and guidelines that are relevant to specific vessel types and trades.

All employees are expected to comply with Safety and Pollution Prevention Regulations and Procedures at all times, and to take the necessary precautions to protect themselves, their colleagues, the ship, its cargo and the environment.

Plan Approval
M/T *Dara Desgagnés*

Original Plan Approved by:	Date:	Document No.
Official Stamps:		

Revised Plan Approved by:	Date:	Revision No.
Official Stamps:		

Revised Plan Approved by:	Date:	Revision No.
Official Stamps:		

Revised Plan Approved by:	Date:	Revision No.
Official Stamps:		

Record of Changes

Revision Number	Date of revision	Section revised	Initials	Remarks
0	25-10-2012	New Manual	DC	All Sections revised

Section 1 — Generalities

This Shipboard Marine Pollution Emergency Plan should be used for response to oil/noxious liquid substances (NLS) spill incidents and other vessel casualties that occur in any part of the world that is located *outside* of the navigable waters of the United States, including the Exclusive Economic Zone (EEZ, or 200 Mile Limit).

While within the navigable waters of the United States, including the Exclusive Economic Zone (EEZ, or 200 Mile Limit), use the OPA 90 Vessel Response Plan (VRP) , which is prepared in accordance with the Oil Pollution Act of 1990 (OPA 90), the requirements of Title 33 Code of Federal Regulations (CFR) Part 155, and the requirements of each state, and approved by the U.S. Coast Guard.

1.1. CONCEPT OF PLAN

This Shipboard Marine Pollution Emergency Plan is intended to provide the Master and his crew, as well as shore-based personnel, with the necessary information on how to deal with oil/NLS spills and threats of oil/NLS spills, and other vessel casualties, anywhere in the world, except in the navigable waters of the United States. *(See OPA 90 Vessel Response Plan (VRP) for similar information while in U.S. waters.)* It is also intended to guide personnel in taking the necessary actions to stop or minimise the discharge through:

- Response procedures;
- Reporting procedures;
- Contact points;
- Co-ordination with national authorities; and
- Training and drills.

Where possible, this Plan makes use of flow charts and checklists to guide the Master through the various actions and decisions that will be required in an incident response. Flow charts and checklists provide a visible, and logically sequenced, form of information, thus reducing the chance of oversight or error during the early stages of dealing with an emergency situation.

Personnel with key functions on board and ashore must be familiar with the plan. For any plan to be effective, it has to be reviewed and updated regularly, and it has to be tested in drills and regular practices. Exercises in implementation of the plan as part of the shipboard mitigation procedures must be held at regular intervals. In the same way, exercises in the communications procedures are necessary in order to verify that the shore-side plans are also working properly.

It is recognised that no plan can foresee the many circumstances and combinations of events that may arise with respect to a particular incident. It is accepted that the Master and officers of the vessel will exercise prudent judgement, assess risk factors, and make decisions under emergency conditions on the basis of incomplete information. The guidance contained herein is always subject to events beyond the control of the parties named.

1.2. COMPANY POLICY

Quality is an integrated part of the Transport Desgagnés Inc.'s business idea and operating philosophy. Quality reflects the approach to all aspects of conduct and policy in ship owning, ship operation, and ship management. Quality means Safety, Punctuality, and Efficiency in securing the requirements of our customers. The final measure of quality is customer satisfaction.

In pursuing the objectives, Transport Desgagnés Inc. has outlined the following main policies to be known and observed by all personnel:

- Maximum safety for personnel, environment, ship and cargo in all operational activities shall always be the overriding consideration;
- Strict observation of relevant regulations shall always be the rule;
- Maximum emphasis shall be put on proper and careful planning of operations as insufficient planning and preparation is the most frequent reason for operational irregularities; and
- Transport Desgagnés Inc.'s management expertise and market knowledge shall be fully utilized in the structuring and management of vessel operations and crew training.

Transport Desgagnés Inc.'s Quality and Safety Management System has been established to enable the company's management to implement the above objectives in a consistent manner. In this context, Quality and Safety Management becomes an important means of achieving the objectives.

All Company personnel will adhere to this policy and will correct, or identify to appropriate supervisory levels, situations that will run counter to this policy.

This Shipboard Marine Pollution Emergency Plan is describing in details the procedures to be followed in any oil/NLS spill incident or threats of spills.

1.3. ADMINISTRATION AND UPDATING

This Shipboard Marine Pollution Emergency Plan should be reviewed by the company annually, and as needed in light of changes in local law or regulation, contact names and numbers, and company policy. In addition, this Plan should be reviewed and evaluated after every drill, exercise, and spill, and where lessons learned requires changes.

The Quality, Safety, Security and Environment Department is responsible for revising the Plan.

The Master should submit to the company any additional or updated information involving the vessel, the shipboard personnel, and on-board equipment. In addition, the Master and his officers are encouraged to submit proposals for changes to the Plan.

1.4. DISTRIBUTION LIST

The Shipboard Marine Pollution Emergency Plan is distributed as follows:

RECIPIENTS	NUMBER OF COPIES	LOCATION
M/T *Dara Desgagnés*	1	Master's office
M/T *Esta Desgagnés*	1	Master's office
M/T *Jana Desgagnés*	1	Master's office
Transport Desgagnés Inc.	1	Transport Desgagnés Emergency Room
Flag State Administration	1	Transports Canada, Marine Safety

Shipboard Marine Pollution Emergency Plan

Section 2 — Reporting Requirements

GENERAL

A. The Canadian "Pollutant Discharge Reporting Regulations", SOR 95-351 and, Article 8 and Protocol I of MARPOL 73/78, require that the nearest coastal state should be notified of actual or probable discharges of oil/NLS to the sea. The intent of the requirement is to ensure that coastal states are informed without delay of any incident giving rise to pollution, of the marine environment, as well as the need for assistance and salvage measures, so that appropriate action may be taken.

B. The reporting requirements of this section comply with those of regulation 37 Annex I and 17 Annex II of MARPOL 73/ 78.

C. When the ship is involved in an incident which results in the discharge of oil or NLS, the Master is obliged under the terms of MARPOL 73/ 78 to report details of the incident, without delay, to the nearest Coastal State by means of the fastest telecommunication channels available. Transport Canada's Publication – *Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful substances, and Marine Pollutants* (TP 9834) gives detailed reporting procedures when the incident occurs in Canadian waters or fishing zones.

D. The intent of these requirements are to ensure that Coastal States are informed, without delay, of any incident giving rise to pollution, or threat of pollution of the marine environment, as well as of assistance and salvage measures, so that appropriate action may be taken.

E. Without interfering with shipowners' liability, some coastal states consider that it is their responsibility to define techniques and means to be taken against a marine pollution incident and approve such operations which might cause further pollution, i.e. lightening. States are in general entitled to do so under the International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969 and the Protocol relating to Intervention on the High Seas in Case of Pollution by Substances other than Oil, 1973.

2.1 WHEN TO REPORT

All oil/NLS discharge in excess of the quantity permitted by laws and regulations must be reported.

2.1.1 ACTUAL DISCHARGE

The Master is obliged to report to the nearest Coastal State whenever there is a discharge of oil resulting

- from damage to the vessel.
- from damage to the vessel's equipment.
- for the purpose of securing the safety of a ship or saving life at sea.
- during the operation of the vessel in excess of the quantity or instantaneous rate permitted under the present Convention.
- During the operation of the ship, a discharge of oil/NLS in excess of the quantities permitted by the Canadian Regulations for the Prevention of Pollution from Ships and for Dangerous Chemicals SOR/2007-86, and the Arctic Shipping Pollution Prevention Regulations, e.g.:

    - 0 PPM Arctic waters
    - 5 PPM Inland waters
    - 15 PPM Outside inland waters

Reports to coastal states should be in the style given in Section 2.2.

2.1.2 PROBABLE DISCHARGE

The Master is obliged to report even when no actual discharge of oil or NLS has occurred but there is a probability that one could.

However, as it is not practicable to lay down precise definitions of all types of situations involving probable discharge of oil/NLS which would warrant an obligation to report the Master is obliged to judge by himself whether there is such a probability and whether a report should be made.

Therefore, it is recommended that, at least, the following events

- Damage, failure or breakdown which affects the safety of the ship (e.g. collision, grounding, fire, explosion, structural failure, flooding, cargo, cargo shifting etc.)

or

- Failure or breakdown of machinery or equipment which results in impairment of the safety of navigation (e.g. failure or breakdown of steering gear, propulsion, electrical generating system, essential shipborne navigation aids etc.)

are carefully considered by the Master – taking into account the nature of the damage failure or break- down of the ship, machinery or equipment as well as the ship's location, proximity to land, weather, state of the sea and traffic density – as cases in which a probable discharge is most likely.

If in doubt, the Master should always make a report in cases aforementioned.

In all cases the Authorities should be kept informed by the Master as how the situation progress and be advised when all threat of pollution has passed.

2.1.3 FOLLOW UP REPORTS

Once the vessel has transmitted an initial report, further reports should be sent at regular intervals to keep those concerned informed of developments.

Follow up reports to coastal states should always be in the style given in Section 2.2, and should include information about every significant change in the vessel's condition, the rate of the release and spread of oil/NLS, weather conditions, and details of agencies notified and clean-up activities.

2.2 INFORMATION REQUIRED

As required in article 8 and Protocol I of MARPOL 73/ 78 Convention the Master or other persons having charge of the ship should report the particulars of any pollution incident. In this context the International Maritime Organization (IMO), in 1997, adopted Resolution A. 851 (20) "General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents involving Dangerous Goods, Harmful Substances and/ or Marine Pollutants".

The intent of the Resolution aforementioned is to enable Coastal States and other interested parties to be informed, without delay, of any incident giving rise to pollution, or threat of pollution of the marine environment, as well as of assistance and salvage measures, so that appropriate action may be taken.

Nothing in this chapter relieves the Master in using sound judgement to make sure that any incident or probable discharge is reported as quickly as possible in the prevailing situation.

When transmitting initial reports to the authorities of the nearest Coastal State the Master or other persons dealing with such a transmission should take note of Resolution A. 851 (20).

Especially, the format of the initial report as well as supplementary of follow-up reports should conform to the guidance contained in Res. A. 851 (20).

All reporting whether initial or follow-up, should follow IMO´s reporting format as outlined below and should contain the following information

LABEL	FUNCTION	EXPLANATION
A	Ship	Name, call sign and nationality
B	Date and time (UTC) of event	A 6-digit group giving day of month (first two digits), hours & minutes (last four digits)
C or:	Position	A 4-digit group giving latitude in degrees and minutes suffixed with N or S, and a 5-digit group giving longitude in degrees and minutes suffixed with E or W
D	Position	True bearing (first 3 digits) and distance (state distance) in nautical miles from clearly identified landmark (state landmark)
E	True course	A 3-digit group
F	Speed at time of incident	In knots and tenths of knots as a 3-digit group
L	Route information	Details of intended track
M	Radio communications	Full details of radio stations (names) and frequencies being guarded
N	Time (UTC) of next report	A 6-digit group as under BB above
P	Cargo on board: can be included in "RR" as relevant	Type(s) and quantity(ies) of cargo/ bunker on board and brief details of any harmful substances and gases that could endanger persons or the environment, pollution category, manufacturer, etc.
Q	Defects, damage or deficiencies or other limitations	Brief details of conditions of the ship as relevant; ability to transfer cargo/ ballast/ bunker fuel
R	Description of pollution or possible overboard discharge	Brief details of pollution; this should include the type(s) of oil or NLS, an estimate of the quantity discharged, whether the discharge is continuing, the cause of the discharge and, if possible, an estimate of the surface area of the spill and the movement and area

S	Weather conditions	Brief details of weather and sea conditions prevailing including wind force and direction and relevant swell details
T	Ship's representative and/ or owner	Name, address, telex and telephone number of the ship's owner and representative (charterer, manager or operator of the ship or their agents)
U	Ship's size and type	Details of length, breadth and type of ship as well as draught
X	Miscellaneous and additional information	Any other information including relevant details such as brief details of incident, need for outside assistance, action being taken to limit further discharge; details of any personnel injuries sustained, details of P & I Club and local correspondent.

Note: See blank form at the end of this section.

All follow-up reports by the Master should include information relevant to the Coastal State Authorities to keep them informed as the incident develops.

Follow-up reports should include information on any significant changes in the ship's condition, the rate of release and spread of the substances, weather and sea conditions and clean-up activities underway.

In this context details of bunker and cargo disposition, condition of any empty tanks and nature of any ballast carried are information needed by those involved in order to assess the threat posed by an actual or probable discharge from the damaged ship.

The following additional information should be sent to TRANSPORT DESGAGNÉS INC. either at the same time as the initial report or as soon as possible thereafter:

- Number of casualties;
- Further details of damage is still sustained;
- Whether damage is still sustained;
- Assessment of fire risk and precautions taken;
- Damage to other ships or property;
- Disposition of cargo on board and quantities involved;
- Time (UTC) assistance was requested and time (UTC) assistance expected to start;
- Name of salvor and type of salvage agreement;
- Whether further assistance is required;

- Priority requirements for spare parts and other materials;
- Details of outside parties advised or aware of the incident;
- Any other important information.

After transmission of the information contained in an initial report, as much as possible of the information essential for the safeguarding of life and the protection of the ship and the marine environment should be reported to the coastal state, owner and/or operator, in order to keep them informed of the situation as the incident develops. This information should include items P, Q, R, S and W, as appropriate.

Blank forms are available at the end of section as well as in the Master's office.

2.3 WHOM TO CONTACT

The Master is responsible for reporting any incident involving an actual or probable discharge of oil or NLS.

Nothing in this chapter relieves the Master from using sound judgement to make sure that any incident is reported as quickly as possible in the prevailing situation.

2.3.1 COASTAL STATE CONTACTS

In order to expedite response and minimize damage from a pollution incident, it is essential that appropriate coastal states are notified without delay. This process is begun with the Initial Report. Guidelines for compiling reports are provided in Section 2.2.

The report should be transmitted in one of the following manner:

1. If the incident occurs in Canadian waters or fishing zone, the report shall be made with the highest possible priority and using the quickest means available, to a pollution prevention officer.

2. If the vessel is in area governed by Vessel Traffic Services (VTS) Standards, the report should, where expedient, be routed through that system. If area not covered by VTS but covered by Coast Guard radio station system, the report should, where expedient, be routed through the latter system.

3. If the incident occurs outside Canadian waters and fishing zones, the report should be made to the nearest coastal state through an appropriate coast station, preceded by the safety signal (if the incident affects the safety of the navigation), or by the urgency signal (if the incident affects the safety of the ship or persons);

4. On appropriate frequencies in the band 405-525 kHz, 1605-2850 kHz or 156-174 MHz;

5. If the ship is not within reach of an MF or VHF coast radio station, to the most appropriate HF coast radio station or on the maritime satellite communication system.

6. When the ship is within or near an area where a ship movement reporting system has been established, to the designated radio station of that system.

This Plan includes, in APPENDIX 1, a list of agencies or officials of administration responsible for the receipt, transmission and processing of urgent reports of incidents involving harmful substances including oil or noxious liquid, E.G., ships to coastal state.

2.3.2 PORT CONTACTS

Notification of local agencies will speed response. However, the variety of trades in which ships engage may make it impractical to list local agencies in the Plan. Where this is feasible, the Master should obtain details concerning local reporting procedures upon arriving in port.

Nevertheless, a list of Coastal State Contacts is available in Appendix 1 as required by article 8 of MARPOL 73/78 and a list of National Operational Contacts is available in Appendix 2.

If an oil/NLS spill occurs, whatever the cause, it is the Master's duty to immediately activate the vessel's Oil/NLS Pollution Team, and report the incident. Precise details of whom to notify locally should be obtained on arrival, but the following is a guide:

a) Local Authority (Coast Guard/Government);
b) Owners/Owners' Managers;
c) Owners Local Representatives / Spill Manager;
d) Terminal / Loading Master;
e) Local State (Environmental) Authority and, if time permits;
f) Local Fire Department (in case of explosion and/or fire);
g) Agent;
h) Port Authority;
i) The vessel's local P&I representative (P&I Club List of Correspondents is filed in the Master's office);
j) Charterer; and
k) Clean-up Contractor.

If a change in the ship's range of trade or a change in the addresses of persons/ Authorities of the ports/ terminals served regularly takes place the Master or any other person aboard delegated by the Master is required to issue a new list.

2.3.3 SHIP INTEREST CONTACTS

The Plan provides details of all those parties with an interest in the ship who should be advised in the event of an incident. While reporting an incident to other interests, it should be remembered that in the event of a serious incident, the ship's personnel may be fully engaged in saving life and taking steps to control and minimise the effects of the casualty. They should therefore not be hampered by having non-essential communications requirements imposed upon them. Thus, Transport Desgagnés Inc. officials should ensure these communications are made.

The Plan clearly specifies who will be responsible for informing the various interested parties such as cargo owns insurers and salvage interests. It is also essential that both the ship's plan and the company's corporate plan are coordinate d to guarantee that all parties having an interest are advised and that duplication of reports is avoided.

A list of ship interest contacts is detailed in Appendix 3, which also indicates the order of priority for notifying those concerned. Out-of-hours contacts are included.

Precise details of whom to notify will vary from company to company, but the following is a guide:

- Head Office;
- Charterer;
- Classification Society; and
- P & I Club.

All further reports and copies of messages sent to coastal states and/or port authorities should be sent to the company. If required, the company's office will be staffed as soon as possible after receipt of an initial report.

Once the initial report has been made, the company's corporate plan (Office Contingency Plan) will ensure that other interests such as Flag State authorities, P & I Club, Classification Society, and others, are notified and kept up to date on the incident.

These updating reports are a vital necessity to ensure appropriate measures are being taken whilst unnecessary risks and expenses are avoided.

The master or owner of a ship must report, without delay, any discharge or anticipated discharge of a pollutant to a Pollution Prevention Officer (PPO). These initial reports should be made to any Marine Communications and Traffic Services (MCTS) on the frequencies listed in the publication, Radio Aids to Marine Navigation (RAMN) - DFO 5470 (Great Lakes and Atlantic) and DFO 5471 (Pacific).

In addition to the above process for reporting spills from a ship to PPO's through the Marine Communications and Traffic Services (MCTS), the Coast Guard maintains a 24-hour Duty Manager alerting process which can be contacted at the numbers listed below.

Canadian Coast Guard
Safety & Rescue Environmental Response Systems Marine Programs
Department of Fisheries and Oceans
200 Kent Street,
Ottawa, Ontario, K1A 0E6
Pager: +1 613 751 0605 (24 hours)
Fax: +1 613 998 0434 Note: This number is operational on a 24-hr basis but is only monitored during business hours.
E-mail: erhqsr@dfo-mpo.gc.ca
Languages understood: ENGLISH/FRENCH

Enquiries regarding pollution preparedness and response should be directed to:

Manager, Environmental Response
Canadian Coast Guard
Safety & Rescue Environmental Response Systems Marine Programs
Department of Fisheries and Oceans
200 Kent Street, 5th Floor
Ottawa, Ontario K1A 0E6

Phone: +1 613 990 7011
Fax: +1 613 996 8902
E-mail: melhuish@dfo-mpo.gc.ca
Languages understood: ENGLISH/FRENCH

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

Director, Ships & Operations Standards
Transport Canada

Tower C, Place de Ville
330 Sparks Street, 11th floor
Ottawa, Ontario K1A 0N8

Phone: +1 613 991 3131
Fax: +1 613 993 8196
E-mail: dayrh@tc.gc.ca
Languages understood: ENGLISH/FRENCH

SHIPBOARD MARINE POLLUTION EMERGENCY PLAN
Initial Notification

A	(Ship name, call sign, flag)
B	(Date and time of event, UTC) _____ _____ _____ D D H H M M
C D	(Position: Lat, Long.) or (Bearing x dist Landmark) (dd mm) _____N/S _____ (ddd mm) _____E/W ddd N miles
E F	(Course) (Speed) _____ _____ d d d kn kn 1/10 kn
L	(Intended track)
M	(Radio station guarded)
N	(Date and time of next report, UTC) _____ _____ _____ D D H H M M
O P	(Type and quantity of cargo / bunker on board) Draught _____fwd _____ aft
Q	(Brief details of defects / deficiencies / damage)
R	(Brief details of pollution, including estimate of quantity lost)
S	Wind dir._____(ddd) Swell dir. _____(ddd) Speed _____(beaufort) Height _____(m)
T	(Contact details of ship's owner operator, agents) Transport Desgagnés Inc. Tel: (418) 692-1000 21 Marché-Champlain Street Fax: (418) 692-6044 Québec, Québec G1K 8Z8 E-Mail: info@desgagnes.com Agent: _____
U	(Ship size and type) Length: Breadth: Tonnage:
V W	(Add'l information) Details of incident: _____ _____ Need for outside assistance: _____ Action to be taken: _____ Number of crew and details of injury: _____ Details of P & I club and correspondent: _____ _____ Others: _____

The alphabetical reference letters in the above format are from the guidelines for reporting incidents involving dangerous goods, harmful substances and /or marine pollutants. The letters do not follow the complete alphabetical sequence as certain letters are used to designate information required for other standard reporting formats, e.g., those used to transmit route information.

Section 3 — Steps to Control Discharge

Whenever an oil/NLS spill occurs, it is the duty of the person finding the spill to inform immediately the Master of responsible officer, who should call out the vessel's Oil/NLS Pollution prevention team (see Appendix 4). Remember that an oil/NLS spill may create a fire or explosion hazard, requiring safety precautions to be observed.

Ship personnel will most probably be in the best position to take quick action to mitigate or control the discharge of oil or noxious liquid substances from their ship.

Therefore, this Plan provides the Master with clear guidance on how to accomplish this mitigation for a variety of situations.

It is the Master's responsibility to initiate a response in the event of a discharge of oil/NLS or substantial threat of discharge – actual or probable – into the waters.

In no case action should be taken that in any way could jeopardize the safety of personnel either onboard or ashore.

In cases of a discharge of noxious liquid substances the Master has to refer to the "Characteristics of Liquid Chemicals Proposed for Marine Transport in Bulk" (Data Sheets) provided onboard for any NLS cargo. Considerations have to be made to any danger resulting from discharge of such substances, i.e. mixing with water, air and other materials/substances.

Special consideration is to be taken in case of the necessity to transfer cargo into another compartment onboard the compatibility of the material to be transferred and the material of pipes and tanks to be used for such action.

The following enumeration specifies different kinds of possible operational spills with regard to reactions to be taken.

3.1 OPERATIONAL SPILLS

3.1.1 OPERATIONAL SPILL PREVENTION

Crew members shall maintain a close watch for the escape of oil or NLS during bunker or cargo operations.

Prior to bunker or cargo transfer the competent crew members should mobilize the spill equipment, as far as available on board, and place it close to the planned operation, e.g. along the railing on the side at which bunker operation takes place.

Before bunker or cargo handling commences, all deck scuppers and open drains must be effectively plugged. Accumulations of water should be drained periodically and scupper plugs replaced immediately after the water has run off. Any free floating substances should be removed prior to draining.

Bunker or cargo tanks which have been topped up should be checked frequently during the remaining operations to avoid an overflow.

Unless there are permanent means for retention of any slight leakage at ship/ shore connections for bunker or cargo transfer, it is essential that a drip tray is in place to catch any leaking substance.

3.1.2 PIPELINE LEAKAGE DURING CARGO AND BUNKER TRANSFER

Measures to implement immediately:

- Stop all cargo and bunkering operations and close manifold valve;
- Sound general alarm bell; notify situation by public address system;
- Initiate emergency response procedures;
- Inform terminal/bunkering personnel of incident

Further measures:

If a leakage occurs from a pipeline, valve, hose or metal arm, operations through that connection should be stopped immediately until the cause has been as contained and the defect remedied.

The defective pipe section should be isolated. Affected sections should be drained down to an available empty or slack tank.

If there is any possibility of released vapours entering an engine room or the accommodation intake, appropriate preventive steps must be taken quickly.

If a leakage occurs from a hydraulic pipeline, operations should be stopped immediately.

Initiate clean-up procedures.

The removed substances and the used clean-up material should be retained on board until it can be discharged to a reception facility.

Inform in line with Section 2 all parties interested about Pipeline Leakage and the actions taken so far.

Refer to checklist in Appendix 5.

3.1.3 TANK OVERFLOW DURING LOADING OR BUNKERING

If there is a tank overflow all bunker/cargo operations should be stopped immediately and should not be restarted until the fault has been rectified and all hazards from the released substances have been eliminated.

If there is any possibility of released vapours entering an engine room or the accommodation intake, appropriate preventive steps must be taken quickly.

As far as the substance permits in view of the material compatibility of tanks/pipes, shift liquid from the tank overflowed to an available empty or slack tank or prepare pump(s) or transfer the excess ashore.

Initiate clean-up procedures.

The removed substances and the used clean-up material should be retained on board until it can be discharged to a reception facility.

Inform in line with Section 2 all parties interested about Tank Overflow and actions taken so far.

AFTER DEALING WITH AN OIL/NLS SPILL, ONCE CLEANUP OPERATIONS ARE COMPLETED, REQUEST PERMISSION TO RESUME OPERATIONS FROM PROPER AUTHORITIES.

Refer to checklist in Appendix 5.

3.1.4 HULL LEAKAGE

Signs leading to the suspicion of hull fractures:

- Excessive list;
- Oil/NLS in water around the vessel.

Measures to implement:

- Stop all cargo and bunkering operations and close manifold valve;
- Sound general alarm bell; notify situation by public address system;
- Initiate emergency response procedures;
- Inform terminal/bunkering personnel of incident

Further measures:

- Use the Oil/NLS Pollution Prevention team in an attempt to locate the source of leakage;
- Consider whether to stop air intake into accommodation and non-essential air intake in engine room.

When the source of leakage is identified:

- Reduce the hydrostatic head of leaking cargo/bunker tank by transferring in an empty or slack tank;
- Consider changing trim/list condition to use seawater as equalising or exceeding bunker tank hydrostatic pressure;
- Consider possibility of pumping water in ballast tank to change effect of hydrostatic pressure;
- Consider possibility of pumping water into leaking cargo/bunker tank to create a water cushion to prevent further oil/NLS loss;

- If the leakage is located below the waterline, call in divers for further investigation.

If it is not possible specifically to identify the tank:

- The level of oil/NLS in the vicinity of the suspected area should be lowered. Remember to consider the effect of hull stresses and stability of the vessel.

AFTER DEALING WITH AN OIL/NLS SPILL, ONCE CLEANUP OPERATIONS ARE COMPLETED, REQUEST PERMISSION TO RESUME OPERATIONS FROM PROPER AUTHORITIES.

Refer to checklist in Appendix 5.

3.1.5 SPILLS CAUSED BY EQUIPMENT IN MACHINERY SPACES

If operational spills are caused by a failure of equipment in machinery spaces any further operations of this equipment should be stopped immediately or measures are to be taken to avoid a spill.

Such equipment may be:

- Oily-water separating equipment or oil filtering equipment to oil bilge water from the engine room bilges
- Valves in pipes connecting ballast/ bilge/cargo systems
- Cooling pipes in cooler systems
- Gearing of bow thrusters
- Stern tubes

3.2 SPILL RESULTING FROM CASUALTIES

Priority actions

In responding to a casualty, the master's priority will be to ensure the safety of personnel and the ship 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, personnel exposure to toxic vapours, and explosion, such as altering course so that the ship is upwind of the spilled cargo, shutting down non-essential air intakes, etc. If the ship is aground, and cannot therefore manoeuvre, all possible sources of ignition should be eliminated and action should be taken to prevent toxic vapours or flammable vapours entering accommodation and engine-room spaces. When it is possible to manoeuvre, the master, in conjunction with the appropriate shore authorities, may consider moving his ship 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 manoeuvring may be subject to coastal State jurisdiction
Prior to considering remedial action, the master will need to obtain detailed information on the damage sustained by his ship. A visual inspection should be carried out and all cargo tanks, bunker tanks, and other compartments should be sounded. Due regard should be paid to the indiscriminate opening of ullage plugs or sighting ports, especially when the ship is aground, as loss of buoyancy could result.

Having assessed the damage sustained by the ship, the master will be in a position to decide what action should be taken to prevent or minimize further discharge. When bottom damage is sustained, hydrostatic balance will be achieved (depending on physical properties) fairly rapidly, especially if the damage is severe, in which case the time available for preventive action will often be limited. When significant side damage is sustained in the way of fuel/lubrication and/or cargo tanks, bunkers or cargo will be released fairly rapidly until hydrostatic balance is achieved and the rate of release will then reduce and be governed by the rate at which bunkers or cargo is displaced by water flowing in under the bunkers or cargo. When the damage is fairly limited and restricted, for example, to one or two compartments, consideration may be given to transferring the substance involved internally from damaged to intact tanks. When considering the transfer of oil or noxious liquid substances from a damaged tank to an intact tank, the master should consider:

1. the extent of the damage;
2. hydrostatic balance;
3. the ship's ability to transfer cargo; and
4. the physical properties of the substance(s) (for ships certified to carry NLSs) involved such as:
    - solubility;
    - density;
    - water reactivity
    - solidification; and
    - compatibility.

Great care in casualty response must be taken to consider stability and strength when taking actions to mitigate the spillage of oil or noxious liquid substance or to free the ship if aground. The Plan provides the master with detailed guidance to ensure that these aspects are properly considered. Nothing in this section shall be construed as creating a requirement for damage stability plans or calculations beyond those required by relevant international conventions.

Internal transfers should be undertaken only with a full appreciation of the likely impact on the ship's overall longitudinal strength and stability. When the damage sustained is

extensive, the impact of internal transfers on stress and stability may be impossible for the ship to assess. Contact may have to be made with the owner or operator or other entity in order that information can be provided so that damage stability and damage longitudinal strength assessments may be made. These could be made within the head office technical departments. In other cases, classification societies or independent organizations may need to be contacted. Additionally, in the case of ships certified to carry NLSs, consideration as to the compatibility of all substances involved such as cargoes, bunkers, tanks, coatings, piping, etc., must also be considered before such an operation is undertaken.

Mitigating Activities

If safety of both the ship and the personnel has been addressed the Master shall care for following issues:

- Assessment of the situation and monitoring of all activities as documented evidence
- Care for further protection of the personnel, use of protection gear, assessment of further risk for health and safety
- Containment of the spilled material by absorption and proper and safe disposal of all material onboard until proper delivery ashore under close guidance of the safety information given by the Product Data Sheet
- Decontamination of personnel after finishing the cleanup process

3.2.1 LIGHTERING / SHIP-T0-SHIP TRANSFER

If a ship becomes disabled or stranded, it may be necessary to transfer all or part or her cargo/bunker to another ship. In the case of tankers, reference should be made, to the *Ship-to-Ship Transfer Manual* available onboard and approved by the Classification Society.

In Ship-to-Ship transfer operations involving a specialized ship, the Master of that ship will normally be in overall charge.
In the case of non-specialized ships, the Master or other person in overall charge of the operation should be mutually agreed and clearly established by the Masters concerned prior to the start of operations. In all cases each master remains responsible for the safety of his own ship, its crew, cargo/bunker and equipment and should not permit their safety to be jeopardized by the action of the other Master, his owner, regulatory officials or others.

The Ship-to-Ship transfer operations should be coordinated with the appropriate responsible local Authority. In addition, the Master should take note of supplemented instructions issued by the Company.

The operation will be greatly expedited if the ship to be lightened makes the following preparations where possible:

a) Establish contact with the lightening ship and makes a detailed plan of the proposed operation including the designation of a communication channel. Fixed or portable hand-held radio telephones may be usefully employed;

b) Lay out mooring lines, heaving lines, messengers, stoppers, fenders, etc. If no large fenders are available, mooring ropes and any other soft material should be strung over the ship's side in strategic positions;

c) Prepare the cargo manifold and have reducers ready available to facilitate the connection of a wide range of hoses (from 200mm to 400mm) on both sides of the ship. In most cases the lightening ship will prefer to berth with her port side to the disabled ship's starboard side, if this is practicable;

d) Top-up derricks or cranes to assist in hose connection. Also have messenger ropes, lifting tackles, etc. available;

e) Have the anchors cleared ready for use, if in waters where use may be possible;

f) Brief the officers and crew on the operation, with particular reference to the safety aspects and complete the appropriate safety check list if possible.

Cargo transfer:

If the disabled ship has power and its cargo piping system is intact, transfer should be made in the usual way.

If the ship's pipelines are not intact, approved portable submersible pumps with power packs should be obtained. The power for submersible pumps may be electric, air or hydraulic. When using submersible pumps, the tanks being emptied of cargo may be counter-flooded with water in order to reduce the head. This may also assist in preventing pollution.

3.2.2 GROUNDING OR STRANDING

The GENERAL ALARM must be sounded immediately for the personnel to muster at their designated positions.

If the vessel is aground and therefore cannot manoeuvre, all possible sources of ignition must be eliminated and action taken to prevent flammable vapours from entering the engine room spaces or the accommodation.

The Master's next priority should be to ensure that he as soon as possible receives detailed information on the damage that the vessel has sustained, in order to find out what remedial action needs to be taken to ensure the safety of the vessel and its crew.

- A visual inspection should be carried out.
- All cargo and bunker tanks to be sounded (ullage)
- All other compartments which have contact with the sea should be sounded to ensure that they are intact.
- Soundings of cargo tanks are to be compared with last soundings to check for possible leaks.
- Any list shall be noted and included in the report for assistance.

Also consider:

- Danger to the vessel's complement if the vessel should slide off grounding site.
- Danger of vessel being broken down by heavy seas or swells.
- Health hazards to the vessel's complement and surrounding population due to release of hazardous substances is dangerous concentrations.
- That fire may start due to released flammable substances due to uncontrolled ignition sources.
- Furthermore, the vessel's Master must take into account the following considerations:
- Is the vessel constantly being struck in the seaway?
- Is the vessel exposed to torsion?
- Sounding to be taken around the vessel to establish the vessel's position on the bottom.
- Are there strong tidal currents in the grounding area?

- May the vessel drift further up on the shore, due to high tides, wind and waves?

3.2.2.1 PREVENTION OF FIRE AND EXPLOSION

If the ship is aground and therefore cannot manoeuvre, all possible sources of ignition should be eliminated and action taken to prevent flammable vapours from entering the machinery spaces or the accommodation.

3.2.2.2 EXTENSION OF HULL DAMAGE

First, a visual inspection should be carried out.

Check for visible oil along hull or in wake of the ship during day time. At night a stick with white cloth (or sheet of sorbent) around it may be lowered into the water alongside the ship to check for oil leakages.

All ballast/ bunker tanks to be sounded (ullage).
All other compartments which may have contact with the sea should be sounded to ensure that they are intact.

Soundings of ballast/cargo/bunkers tanks are to be compared with last soundings to check for possible leaks.

Sounding to be taken around the ship establish the ship's position on the grounding area.

When the ship is aground, due regards should be given to the indiscriminate opening of ullage plugs, sighting ports etc. as loss of buoyancy could be the result of such actions.

Any list of the ship shall be noted and included in the report for assistance.

3.2.2.3 PROCEDURES TO REDUCE OR STOP OUTFLOW OF OIL OR NLS

The Master should assess the possibility of damage to the environment and whatever action can be taken to reduce further damage from any release, such as:

- Transfer of bunkers/cargo internally, provided shipboard piping system is in an operational condition and in careful view of the compatibility of the substance and the tanks/pipes used for transfer, and taking into account the impact on the ship's overall stress and stability
- Isolate damaged/ penetrated tank(s) hermetically to ensure that hydrostatic pressure in tanks remains intact during tidal changes

- Evaluate the necessity of transferring bunkers/cargo to barges or other ships and request such assistance accordingly
- Evaluate the possibility of additional release of oil or NLS in close co-operation with coastal states.

In case of large differences between the tide levels, the Master should try to isolate the damaged tank(s) to reduce additional loss of substances.

3.2.2.4 REFLOATING BY OWN MEANS

The Master should also evaluate the question of refloating the vessel by own means. Before such an attempt is made, it must be determined:

- whether the ship is damaged in such a way that it may sink, break up or capsize after getting off
- whether the ship after getting off may have manoeuvring problems upon leaving the dangerous area by own means
- whether machinery, rudder or propeller are damaged due to grounding or may be damaged by trying to get off ground by own means
- whether the ship may be trimmed or lightened sufficiently to avoid damage to other tanks in order to reduce additional pollution
- weather evaluation: whether there is time/ reason to await improvements in weather or tide.

3.2.2.5 SECURING THE SHIP

The risk of further damage to the ship is greater in an attempt to refloat the ship by own means, than in remaining aground until professional assistance has been obtained, the ship's Master should try to secure the ship as much as possible by:

- Trying to prevent the ship from moving from is present position
- By dropping anchors (adequate water depth and anchor ground provided)
- By taking ballast into empty tanks, if possible
- Trying to reduce longitudinal strain on hull by transferring ballast or bunkers internally
- Reducing fire risk by removing all sources of ignition.

Inform in line with Section 2 all parties interested about the Grounding and the actions taken so far.

3.2.3 TOUCHING BOTTOM

Should the vessel experience unusual shaking or vibrations of the hull, unexplained movements or changes in engine revolutions, it may be suspected that the vessel has touched bottom. Procedures should be initiated to ensure that vessel is intact and that there is no oil/NLS leakage.

- If vessel has pilot on board, ask for possible explanation.
- Stop engine immediately, and observe any unexpected speed reduction.
- Consult vessel's charts for area and check depth information.
- Observe accurate position by bearings of fixed points.
- Check for visible oil/NLS along hull or in wake of vessel during day time. At night a stick with white cloth (or sheet of sorbent) around it may be lowered into the water alongside the vessel to check for oil/NLS leakage.
- Take soundings of all tanks, cargo/bunkers and other compartments (ballast tanks etc) to ensure that the vessel has not sustained any damage.
- Isolate penetrated tank by closing the tank hermetically. Very important when large differences in tides occur.

If the vessel is aground, follow instructions provided in 3.2.2

3.2.4 COLLISION

Should the ship be involved in a collision with another ship, the Master should as soon as possible identify the extent of damage to his own vessel.

When a collision occurs, the GENERAL ALARM should be sounded immediately for the personnel to muster at their designated Muster Stations.

The following check list should assist the Master in assessing the situation:

- Are any tanks penetrated above or below the waterline?
- If ships are dead in the water and interlocked, what is most prudent, to stay interlocked or separate?

- Is there any spill at present – small or large? Will a separation of the interlocked ships create a larger spill than if the ships stay interlocked?
- If there is a spill, will the separation of the ships cause sparks that can ignite the spilled material or other flammable substances leaked out from the ships?
- Are the ships creating a greater danger to other traffic in the area if the are interlocked than if separated?
- Is there a danger to either ship of sinking after being separated?
- If the ships are separated, how is the manoeuvrability of the own ship?

Shut down all none essential air intakes.

Isolate damaged/ penetrated tank(s) by hermetically closing the tank(s), if possible.

When it is possible to manoeuvre, 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.

Inform in line with Section 2 all parties interested about the collision and the actions taken so far.

3.2.5 FIRE AND EXPLOSION

When a fire and/or explosion occur, the FIRE ALARM must be sounded immediately for the personnel to muster at their designated positions.

Chemical fires produce additional hazards and great care is necessary when fighting them. The data sheets of all chemical cargoes must be carefully studied before and during carriage, so that all personnel are familiar with their properties.

- Water may react with some chemicals with the following results:
  - Productions of flammable solutions;
  - Production of toxic vapours;
  - Re-ignition due to low auto-ignition temperature;
  - Production of heat and increased amounts of flammable gases.
- Chemicals soluble in water will destroy normal foam.
- Some chemicals produce toxic vapours when heated. While burning a chemical transformation may produce highly toxic vapours of a different chemical composition.
- Some chemicals that are heavier than water can be blanketed with water if the jet stream is applied slowly and carefully.
- All personnel are to wear breathing apparatus ready for immediate use should toxic vapours or fumes be produced.
- The Emergency Team should always wear breathing apparatus at fire practices.
- The Emergency Team should supplement any fixed fire fighting system with foam or water sprays, if appropriate.
- Small fires in scuppers or around decks should be fought with appropriate portable extinguishers.
- Any sealed space in which a fixed fire fighting system has been used should be entered only after thorough ventilation and testing of the atmosphere.

Should an explosion and a fire occur on board; the vessel's Emergency Teams will under the leadership of the Chief Officer initiate the necessary steps to bring the situation under control.

Such steps shall be:

- Find out immediately where the fire/explosion has taken place.
- Try to determine the extent of damage, and if anyone of the compliment is injured or dead.
- Deploy the members of the vessel's Emergency Teams to the positions deemed best for fighting the fire.
- Use all available means to fight the fire such as:
- Water w/spray nozzles
- Water cannons (monitors)
- Foam cannons (monitors)
- CO2
- Try to contain the fire and prevent it from spreading to other parts of the vessel.

The occurrence shall be reported to the local authorities, informing them about the situation and if the fire cannot be controlled by the complement, request outside assistance as per section 4.

In case of fire and explosion the following priorities exist when the Damage control measures are initiated:

- Rescue lives.
- Limiting the damage to vessel and cargo.
- Preventing environnemental pollution.

When alerting the local authority and firefighting contractors, report as per IMO-format (Section 2), but most important give:

- Name of vessel and nationality.
- Location.
- Type of incident and cargo on board.
- If anyone is injured or missing.
- Any oil/NLS spill or threat of spill.

3.2.6 HULL FAILURE

Should the ship loose one or more shellplatings, develop major cracks, or suffer severe damage to the hull, the Master should immediately sound the GENERAL ALARM to call the crew members to their Muster Stations, and inform them of the situation, and prepare lifeboats for launching if necessary.

The Master should then asses the situation, and confers with his senior officers.

The Master should obtain the latest weather forecast and asses its impact on the present situation.

Furthermore, the following questions should be considered and should be asked:

- Is the ship in any immediate danger of sinking or capsizing?

If YES:

- Send distress message
- Immediately abandon the ship

If NO, initiate damage control measures as found necessary by considering the following points:

- Can the vessel manoeuvre on its own?
- Has the ship lost buoyancy?
- If the ship has a list due to loss of ballast, cargo/ bunker or buoyancy, is it necessary and possible to rearrange the bunker or ballast by internal transfer operation in order to bring the ship to an even keel?
- Is it necessary to dump cargo in order to maintain stability without changing the stress situation?

- Can this operation wait till another ship/ barge can receive that cargo?
- Is there any abnormal change in the ship's stability and stress situation?
- Can the change in the ship's stability and stress situation be monitored and calculated on board? If not, the Master should seek assistance.
- Does the ship need assistance or escort to nearest port of refuge or repair port?
- Might it be prudent to salve part of the crew members in case the situation should worsen, or is it necessary to abandon the ship totally?

Inform in line with Section 2 all parties interested about the Hull Failure and the actions taken so far.

3.2.7 EXCESSIVE LIST

Should the ship for some reasons suddenly start to list excessively during discharging/ loading operations, or bunkering, all ongoing operations should be stopped immediately until the cause has been determined.

The Officer on Duty should inform the Master and/ or Chief Officer without delay.

The Master should try to determine the reason for the excessive list, and take steps to rectify the situation and to stabilize the ship's condition:

- Check reason(s) for list;
- Soundings/ ullage to be taken in all tanks;
- Bunker/ ballast/cargo pumps to be made ready;
- Consider measures to minimize list in transferring liquid from one compartment to another;
- Ensure water tightness of empty spaces;
- Close all openings;
- Secure vent pipes to avoid ingress of water;
- If bunkering: Change to corrective tanks for rectifying the situation;
- If ballasting/ deballasting: Change to corrective tanks to rectify the situation;
- If there is reason to believe that the list may cause any spill, notify as per Section 2;
- If the ship's crew is in jeopardy, prepare lifeboats for launching, and notify as per Section 2.

If the situation is brought under control, inform all parties interested.

3.2.8 EQUIPMENT FAILURE

If the main engine stops or steering gear fails, the bridge watch shall immediately:

- Call Master and Chief Engineer.
- If vessel is considered to be in immediate danger, prepare for dropping an anchor.

When the Master comes to the bridge, his first priority shall be to assess the situation and get a complete picture of the situation, and base his further action based on:

- Position of the vessel relative to shore, shallows or installations.
- Weather and drift (speed and direction).
- Estimated time to get engine or steering gear back into operations.

Action should be taken according to worst case scenario development of the situation.

Main engine failure:

The main engine instruction book failure search list should be used to locate the failure. If the engine cannot be repaired within the permissible time given by the Master, emergency operation of the main engine should be considered on the Master's order.

Steering gear failure:

For location of the steering gear failure, the ICS "STEERING GEAR GUIDANCE ON TEST ROUTINES AND CHECK LISTS" can be used in addition to the steering gear instruction book.

3.2.9 DANGEROUS REACTIONS OF CARGO (for vessels certified to carry NLSs)

In case of spillage of NLS cargo on deck, in the water or incidental mixture with other cargo through internal tank leakage consider dangerous reactions of such mixture. Promptly consult the Data Sheet available for the cargo shipped onboard about possible hazards and necessary precautions/actions to be taken according to the information provided.

Take necessary actions for the safety of the crew for the case of (possible) contamination with the spilled material or its vapours.

3.2.10 DANGEROUS CARGO RELEASE (for vessels certified to carry NLSs)

When a dangerous cargo release is detected, the vessel's emergency team must, under the leadership of the chief officer initiate the necessary steps to bring the situation under control.

Such steps should be:

If at sea or at berth

- First to Raise the alarm

The leaking product must be identified as soon as possible so that potential hazards to the vessel, crew and the environment can be determined by checking with the Material Safety Data Sheet for the substance involved. Particular concern is to be given to flammability and toxicity of vapours.

Engine room personnel should be instructed to switch ventilation to the re-circulation mode and to close air intakes. All non-essential water intakes should be closed after having determined which ones must remain open.

As soon as a source of leakage has been determined, steps to minimise/stop leakage are to be established. This may include discharging, internal cargo transferring and adjusting list and trim.

Radio warnings should be broadcast.

Spills, and probable spills, must be reported immediately to the company and to the authorities in accordance with the rules and regulations.

If at Terminal

- Stop cargo transfer, if any, and raise the alarm.

Ensure that ventilation is switched to the re-circulation mode and that all air intakes are closed. All non-essential water intakes should be closed after having determined which ones must remain open.

Be ready to leave berth without assistance in case of an emergency. Consideration should be given as to lifeboat use in case of vessel evacuation.

3.2.11 LOSS OF TANK ENVIRONMENTAL CONTROL (for vessels certified to carry NLSs)

Consider any hazards arising out of loss of environmental control in view of possible explosion dangers by contacting the Data Sheets of the cargo concerned.

Avoid any intake of air into the uncontrolled spaces to avoid a dangerous mixture to be built up within the respective space.

3.2.12 CARGO CONTAMINATION YIELDING A HAZARDOUS CONDITION (for vessels certified to carry NLSs)

Normally proper cargo stowage should have reduced this eventuality to a minimum.

Measures to be implemented immediately:

- Sound emergency alarm.
- Turn ship off wind.
- Shut accommodations ventilation.
- Eliminate all sources of ignition.
- With the help of M.S.D.S. (reactivity) try to evaluate the type of reaction you can expect.
- Records events and communications.

Personnel Safety:

- Refer to Emergency Procedure for Ship Carrying Dangerous Goods (Ems). If personnel to work in vicinity of noxious substance, they must be protected by required equipment.
- Check cargo(es) against IBC code chapter 17 column "n" if letter E is present, respiratory equipment is necessary for escape purposes. Advices crew by Public Address (P.A.) accordingly.

Further measures:

- Monitor toxic vapours.
- Assess the extend of reaction.
- Initiate mitigation of hazardous cargo contamination release if practicable (if limited quantity on deck, consider washing overboard with copious amount of water).

3.2.13 HAZARDOUS VAPOUR RELEASE (for vessels certified to carry NLSs)

Measure to be implemented immediately:

- Sound Emergency Alarm.
- Shut accommodations ventilation.
- Eliminate all sources of ignition.
- Turn vessel off wind.
- With the help of M.S.D.S. assess if fire, explosion or toxic vapours risk are present.
- Assess cause of vapour release.
- Record events and communications.

Personnel Safety

- Refer to Emergency Procedures for Ship Carrying Dangerous Goods (EmS). If personnel to work in vicinity of noxious substance, they must be protected by required equipment.
- Check cargo(es) against IBC code chapter 17 column "n" if letter E is present, respiratory equipment is necessary for escape purposes. Advices crew by Public Address (P.A.) accordingly.

Further measures:

- Monitor toxic vapours.
- Initiate mitigation of hazardous vapour release if practicable
- A very isolated source of hazardous vapour can be directed away with the air draft of an open, high pressure, fog nozzle.

When a spill on board creates toxic, corrosive or flammable vapours, the master should consider manoeuvring the vessel to the extend that, in his judgment, spill and weather conditions permit, so that vapours move away from vessel accommodation and operation spaces.

Entry into spaces with suspected gas leaks should always be with a self-contained breathing apparatus (SCBA) and protective clothing, monitoring equipment and under supervision by a responsible vessel's officer. Gases that are inert and normally considered to be non-flammable and non-toxic may cause an oxygen deficient atmosphere in compartment spaces. Other gases have narcotic effects while others change composition and produce highly poisonous gas when in contact with fire.

Ventilation to remove leaking of gases may not always be effective, particularly with heavier-than-air gases that settle and accumulate in low spaces. When dealing with flammable vapours and gases, ignition sources (naked lights, electric tools, etc.) should be prohibited.

3.3 OTHER CONSIDERATIONS

3.3.1 STRESS AND STABILITY – GENERAL CONSIDERATIONS

a. Great care must be taken when taking actions to mitigate the spillage of oil or free the ship if aground.

b. Internal transfers should only be undertaken when the overall impact on stress and stability has been calculated.

c. When damage is extensive, the impact of internal transfers on stress and stability may be impossible for the Master to assess. Contact should be made with the technical manager for the necessary calculations to be carried out.

d. Information required by the Technical Manager will include:

1) Intact Ship's condition.

2) Damage - location and extent.

3) Condition of ship- draft- cargo fuel loss or change in amount and disposition

4) Local Conditions- tide- wind- sea state- weather forecast If the ship has sustained extensive structural damage consideration may be given to transfer all or part of the cargo /bunkers to another ship. This should not be undertaken without a full assessment of the impact this will have on the stability and stress of the ship at all stages of the transfer The ship to ship transfer operations should be co-ordinated with the appropriate local authority. Current cargo, bunker and ballast information, including quantities and specifications, is available in the ships office.

3.3.2 MITIGATING ACTIVITIES

If safety of both the ship and the personnel has been addressed the Master shall care for following issues:

- Assessment of the situation and monitoring of all activities as documented evidence.
- Care for further protection of the personnel, use of protection gear,
- Assessment of further risk for health and safety.
- Containment of the spilled material by absorption and safe disposal

- Within leakprof containers of all onboard until proper delivery ashore with due consideration to possible fire risk.

- Decontamination of personnel after finishing the cleanup process.

- Disposal of removed oil and clean-up material.

- Isolation procedures.

Shipboard Marine Pollution Emergency Plan

Section 4 — National and Local Coordination

Quick efficient co-ordination between the ship and Coastal States or other parties involved becomes vital in mitigating the effects of any pollution incident.

As the identities and roles of various national and local Authorities involved vary widely from state to state and even from port to port, the Master should take note of these particularities, as far as possible. In this context the Master should call upon the owner's representatives in the state/ port of question to receive the relevant information.

Prior to undertaking mitigation actions – especially in cases of an actual discharge due to casualties in the territorial waters of a Coastal State – the Master should contact the Coastal State for authorization of his action.

The Master should co-ordinate all his activities with the Coastal State.

The Master should call the Coastal State for allowance to use chemical agents for response to pollution on the sea. Without authorization of the Authorities of the appropriate Coastal State no chemical agents should be used.

Where no responsibility for discharge response by a Coastal State is noticed the Master should take all the necessary steps as deemed appropriate to minimize the escape of oil or NLS.

With respect of the accident happened the Master should take measures as stated in Section 2 and Section 3 of this Plan.

a) Canada

Canadian Coast Guard Pollution Prevention Officer in the area that the vessel is in; Contact of a PPO can be made via any CGRS or VTS.

Operation Centre, H.O.
Phone: (613) 990-5600 – 24 hrs/day
Fax: (613) 995-4700
TLX: 0053 3128

East Coast, ECAREG VTS Centre, Dartmouth, N.S. (1-800-565-1633)
Or via any Coast Guard radio station.
Phone: (902) 426-5664/5
TLX: 019-22625 or 019-22510, Cable: ECAREG Canada

West Coast, WESTREG via any Coast Guard radio station
Phone: (604) 661-6011
TKX: 043-52586, Cable: WESTREG Canada
Arctic, NORDREG or via any Coast Guard radio station.
Phone: (819) 979-5724
TLX: 063-15529, Cable: NORDREG Canada

b) United States

U.S. Coast Guard Captain of the Port in the area that the vessel is in and National Response Centre (1-800-424-8802) as required by federal regulations. Telex: 892427

Failure to notify the National Response Centre in addition to the local Coast Guard is punishable by a fine up to $10,000 or one year in prison. It is important that both the Coast Guard and the National response Centre be notified at the toll free number whenever a spill occurs in U.S. waters.

See Vessel Response Plan Procedures

c) International Port / Waters

Appropriate equivalent government body for that particular country the vessel is in (see Appendix 1).

Section 5 — Additional Information

5.1 PLAN REVIEW PROCEDURES

This plan can only be changed and/or updated by the Quality, Safety, Security and Environment Management Team.

All comments, corrections and suggestions shall be directed to the above department through the qsse@desgagnes.com email address. All users of the plan have the responsibility of pointing out changes that affect the validity and/or use of the plan.

Major changes on the plan shall be made as soon as possible.

Any change or update which requires a page change shall be entered in the "Record of changes".

All approved changes shall be sent, without delay to the registered copy holders, as follows:

- Owners Emergency Response Room
- Vessel;
- Canadian Coast Guard, Marine Safety.

5.2 REVISION OF PLAN

The plan must be kept updated at all times which means that if any changes occur during the operation and which may affect this document, it must be corrected and recorded and all parties concerned must be advised.

5.3 ON BOARD SPILL EQUIPMENT

5.3.1 INVENTORY

To get the inventory and the storage location for all spill kit materials, consult appendix 7.

If your Vessel is also equipped with an Emergency Air Pump, please consult appendix 8 to familiarize with the Procedure and Piping Arrangement for Oil Spill Air Pump.

5.3.2 PLANNED VERIFICATIONS & MAINTENANCE SCHEDULE

1. Prevention equipment

1.1 Tank lids, checks

- Tank lids sit squarely on coatings
- Packing is in good condition
- Cleats have sufficient movement
- Ullage ports are tight
- Packing of ullage ports in good condition
- Drain valve closed and plug fitted on manifold drip trays

1.2 Deck pipelines (cargo, bunker, thermal oil and hydraulic)

- General condition of deck lines, no apparent leakage
- State of temporary repairs, if any; head office informed of situation
- Check expansion joints for signs of leakage
- All manifolds and unused hoses blanked and fully bolted
- Sample/pressure cocks fitted tightly, no leakage

1.3 Hull plating check

- Assessment condition of hull for signs of damage or possible weak spots, notify Head office of areas of concern.

1.4 Miscellaneous

- Proper opening/closing of pressure/vacuum valves on tanks
- Proper operations of Wessoe gauges

2. Containment equipment

Check:

- Drip trays are sound with no obvious cracks or holes
- Save-alls around bunker tanks are sound and drain plugs fitted
- Condition of scupper plugs
- Proper operation of diaphragm pumps
- Sufficient inventory on board at all times

3. Spillage equipment

Check:

- Oil dispersant and solvant available. USE AS DIRECTED ONLY
- Foam & dry powder fixed extinguishing systems are operational and ready for immediate use
- Company's Oil/NLS Response Plan has been brought to attention of all involved parties
- All communication methods have been proved satisfactory

4. Equipment

Check:

- All components of bilge oily separator work satisfactorily
- A sign is in place in vicinity of overboard discharge relating to use of valves and the need for them to be sealed in port
- All components of the ballast discharge monitoring system works satisfactorily
- Oil/Water interface detector is in good working order and readily available.

WARNING:

THE MASTER SHOULD ENSURE THAT BEFORE ANY DISPERSANTS OR DETERGENTS ARE USED, LOCAL AUTORISATION IS OBTAINED AS INDISCRIMINATE USE OF SUCH MATERIALS MAY BE HARMFUL TO ENVIRONMENT.

5.4 EVIDENCE REQUIRED FROM THE VESSEL

(Text extract from The Nautical Institute's The Master Role in Collecting Evidence, 1989)

"In order to defend claims of oil/NLS pollution and to prevent future spills, owners and their insurers will require a detailed account of how the spill occurred, the steps taken to prevent the spill, and the efforts made to minimise damage. Such an account should be supported by the items of evidence listed below, and the Master should ensure that such information and documents are retained and available. This information includes the following:

1. Log books in which the following information should be recorded:

    a) Use of such equipment as scupper plugs and drip trays,
    b) Carrying out of oil/NLS spills drills
    c) The procedures followed during transfer of oil/NLS within the vessel
    d) Evidence of previous oil/NLS pollution in berth or port area

2. Engine Room logs in which the following information should be recorded:

    a) Bunkering procedures
    b) Members of the crew in charge of bunkering operations
    c) Methods of effecting emergency stops
    d) Times and results of inspections of equipment used in cargo and bunkering operations, and
    e) Rates and sounding / ullages during loading and discharging operations

3. A copy of the bunkerer's instruction or delivery note containing an acceptable loading rate.

4. Records of stocks of cleaning materials such as sprayers and absorbent material

5. Samples of any oil/NLS that has been discharged from the vessel

6. Video films of the extent of the film (if possible)

7. A record of the quantity of pollutant

8. If the pollution was caused by broken equipment on board the vessel, the broken parts should be preserved

9. Accounts of the events from all the members of the crew involved in the incident

10. Oil record book

11. Cargo loading / discharge plan

12. Owners / charterer's instructions

13. Tank and pipeline diagrams

14. Sounding pipe and ullage plug diagram

15. Vessel's Contingency plan

16. All relevant telexes, cables and other correspondence

In addition of the information listed above, the Master should ensure that a record is made of the following information:

1. The operation being carried out at the time of the spill and the grades of oil/NLS involved

2. The type of oil/NLS which went over the side

3. The quantity of pollutant on deck, and the quantity which went over the side

4. Actions taken to report the spill

5. Action taken to commence cleaning operations

6. The state of the tide at the time of the spill

7. The extent of the pollution, the extent of the area which the spill covered and whether it affected other vessels or properties

8. The weather condition at the time of spill

9. The identity of any vessels in the vicinity when the oil/NLS spill occurred

10. The date, time when, and place where the spill occurred

11. Details of the action taken on board to contain and clean up the pollutant

12. Details of the action taken on shore to contain and clean up the pollutant

13. The type and industrial name of the oil dispersant or any other chemical used

Appendix 1
List of Coastal State Contacts

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Regulation ~~26~~ of Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) (Shipboard Oil Pollution Emergency Plan), entered into force on April 4, 1993. The Shipboard Marine Oil Pollution Emergency Plan should include as an appendix the list of agencies or officials of administrations responsible for receiving and processing reports as developed and updated by the Organisation in compliance with Article 8 of MARPOL 73/78.

The attached list contains contact details for coastal stated known at the time of publication. This list has three sources of information: 1) the Provisions Concerning the Reporting of Incidents Involving Harmful Substances under MARPOL 73/78 (the IMO Publication); 2) responses to the IMO Shipboard Marine Pollution Preparedness, Response and Co-operation Information System (OPRC Questionnaire); and 3) the International Tanker Owner Pollution Federation (ITOPF). It is recognised that the list may not be complete.

The information has been provided in response to the OPRC Questionnaire, as well as directly by Member States with amendments to the list. Additions and / or amendments to the list will continue to be provided by the International Maritime Organisation (IMO).

***

Coast stations and their frequencies are given in the ITU List of Coast Stations, and also in appropriate national publications, e.g. Admiralty List of Radio Signals Vol 1.

Appendix 2
List of National Operational Contact Points

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This information enables compliance with Regulation ~~26~~ of Annex 1 of MARPOL 73/78 which, inter alia, requires that shipboard marine pollution emergency plans (SMPEP) shall contain a list of authorities or persons to be contacted in the event of an oil pollution incident.

Appendix 3
List of Ship Interest Contacts

Liste des contacts en cas d'urgence
Emergency Contact List

ARMATEUR ET OPÉRATEUR	**TRANSPORT DESGAGNES INC.**

OWNER & OPERATOR	***TRANSPORT DESGAGNES INC.***

SIÈGE SOCIAL	
Adresse :	**21, rue du Marché-Champlain Québec (Québec) Canada G1K 8Z8**
Téléphone :	**(418) 692-1000**
Télécopieur :	(418) 692-6044
Courriel :	info@desgagnes.com
Site Internet :	www.desgagnes.com

HEAD OFFICE	
Address:	***21 Marché-Champlain Street Quebec, Québec, Canada G1K 8Z8***
Telephone:	***(418) 692-1000***
Fax:	*(418) 692-6044*
E-mail:	*info@desgagnes.com*
Website:	*www.desgagnes.com*

SALLE D'INTERVENTION D'URGENCE	
Téléphone :	(418) 692-5525
Télécopieur :	(418) 692-5443
Courriel :	emergency@desgagnes.com

EMERGENCY RESPONSE ROOM	
Telephone:	*(418) 692-5525*
Fax:	*(418) 692-5443*
E-mail:	*emergency@desgagnes.com*

CONTACT 1 :	**Surintendant du navire**

CONTACT 1:	***Vessel Superintendent***

Pour les navires :	**Dara, Esta et Jana Desgagnés**
	Daniel Colan
Cellulaire :	(506) 533 5025
Courriel	daniel.colan@rigelcanada.com
Ou :	**Officier en devoir**
	(506) 533-9000

For vessels:	***Dara, Esta, and Jana Desgagnés***
	Daniel Colan
Cellular:	(506) 533 5025
E-mail	*daniel.colon@rigelcanada.com*
Or:	***Officer on Duty***
	(506) 533-9000

Pour les navires :	**Acadia, Sedna et Maria Desgagnés**
	Eugen Milasan
Cellulaire :	(418) 929-4961
Cellulaire 2 :	(514) 473-6076
Courriel :	eugen.milasan@desgagnes.com

For vessels:	***Acadia, Sedna and Maria Desgagnés***
	Eugen Milasan
Cellular:	*(418) 929-4961*
Cellular 2:	*(514) 473-6076*
E-mail:	*eugen.milasan@desgagnes.com*

Pour le navire :	**Mia et Paul A. Desgagnés**
	Olivier Garon
Cellulaire :	(418)-953-8293
Courriel :	olivier.garon@desgagnes.com

For vessel:	***Mia and Paul A. Desgagnés***
	Olivier Garon
Cellular:	*(418)-953-8293*
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Pour le navire :	**Zélada Desgagnés**
	Zélada Desgagnés
Cellulaire :	(418) 563-7573
Domicile :	(418) 635-2803
Courriel :	zelada.desgagnes@desgagnes.com

For vessel:	***Zélada Desgagnés***
	Zélada Desgagnés
Cellular:	*(418) 563-7573*
Home:	*(418) 635-2803*
E-mail:	*zelada.desgagnes@desgagnes.com*

Pour les navires :	**Nordik Express, Bella, Claude A. Miena et Nordika Desgagnés**
	Éric Desrochers
Cellulaire :	(418) 569-3597
Domicile :	(418) 683-3849
Courriel :	eric.desrochers@desgagnes.com

For vessels:	***Nordik Express, Bella, Claude A. Miena and Nordika Desgagnés***
	Éric Desrochers
Cellular:	*(418) 569-3597*
Home:	*(418) 683-3849*
E-mail:	*eric.desrochers@desgagnes.com*

Pour les navires :	**Damia, Rosaire A. et Sarah Desgagnés**
	Sylvain Tremblay
Cellulaire :	(418) 571-0429
Domicile :	(418) 889-8917
Courriel :	sylvain.tremblay@desgagnes.com

For vessels:	***Damia, Rosaire A. and Sarah Desgagnés***
	Sylvain Tremblay
Cellular:	*(418) 571-0429*
Home:	*(418) 889-8917*
E-mail:	*sylvain.tremblay@desgagnes.com*

Pour les navires :	**Espada et Laurentia Desgagnés**
	Philip John
Cellulaire :	(418) 802-7977
Courriel :	philip.john@desgagnes.com

For vessels:	***Espada and Laurentia Desgagnés***
	Philip John
Cellular:	*(418) 802-7977*
E-mail:	*philip.john@desgagnes.com*

Pour les navires :	**Argentia, Taïga Desgagnés et HHL New York**
	Geremy Girard
Cellulaire :	(418) 573-7608
Courriel :	geremy.girard@desgagnes.com

For vessels:	***Argentia, Taïga Desgagnés and HHL New York***
	Geremy Girard
Cellular:	*(418) 573-7608*
E-mail:	*geremy.girard@desgagnes.com*

CONTACT 2 :	**André Marmen** **Directeur des opérations**
Cellulaire :	(418) 931-9340
Domicile :	(418) 908-0955
Courriel :	andre.marmen@desgagnes.com

CONTACT 2:	***André Marmen*** ***Operations Manager***
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Home:	*(418) 908-0955*
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CONTACT 3 :	**David Fox,** **PDT - Navires Citernes** **Surintendant – Navigation**
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Courriel :	david.fox@desgagnes.com

CONTACT 3:	***David Fox,*** ***DPA - Tanker Vessels*** ***Superintendent – Navigation***
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E-mail:	david.fox@desgagnes.com

CONTACT 3 :	**Marc Desgagnés,** **PDT - Navires Cargo** **OSC -Tous les navires de la Flotte** **Directeur QSSE**
Cellulaire :	(418) 569-6537
Domicile :	(418) 406-1059
Courriel :	marc.desgagnes@desgagnes.com

CONTACT 3:	***Marc Desgagnés,*** ***DPA - Cargo Vessels*** ***CSO – All Fleet Vessels*** ***QSSE Manager***
Cellular:	(418) 569-6537
Home :	(418) 406-1059
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CONTACT 3 :	**Daniel Colan** **OSC – Dara, Esta et Jana Desgagnés**
Cellulaire :	(506) 533 5025
Courriel	daniel.colan@rigelcanada.com

CONTACT 3:	***Daniel Colan,*** ***CSO – Dara, Esta and Jana Desgagnés***
Cellular:	(506) 533 5025
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CONTACT 4 :	**Claude Dumais Vice-président – Opérations et projets spéciaux, Groupe Desgagnés (Chef d'intervention d'urgence)**		***CONTACT 4:***	***Claude Dumais Vice-President – Operations and Special Projects, Groupe Desgagnés (Incident Commander)***
Cellulaire :	(418) 952-6486		*Cellular:*	*(418) 952-6486*
Courriel :	claude.dumais@desgagnes.com		*E-mail:*	*claude.dumais@desgagnes.com*
CONTACT 5 :	**Serge Le Guellec Président-directeur général (TDI)**		***CONTACT 5:***	***Serge Le Guellec President and General Manager***
Cellulaire :	(581) 888-8920		*Cellular:*	*(581) 888-8920*
Courriel :	serge.leguellec@desgagnes.com		*E-mail:*	*serge.leguellec@desgagnes.com*

Communications avec les bureaux
Communications with offices

Coordonnées des compagnies | *Companies' Contact Information*

Nom *Name*	Statut *Status*	Contact *Contact*	Adresse Address	Numéros Numbers
Groupe Desgagnés inc.	Société mère *Parent company*	Louis-Marie Beaulieu	21, rue du Marché-Champlain Québec (Québec) G1K 8Z8	**Siège social** ***Head Office*** ☎ (418) 692-1000 (418) 692-6044 info@desgagnes.com **Salle d'intervention d'urgence** ***Emergency Response Room*** ☎ (418) 692-5525 (418) 692-5443 emergency@desgagnes.com
Transport Desgagnés Inc.	Armateur et exploitant *Shipowner* *and ship operator*	Serge Le Guellec	Même que ci-dessus *Same as above*	Mêmes que ci-dessus *Same as above*
Desgagnés Marine Cargo Inc.	Fournisseur d'équipage (navires de charge) *Crewing* *(general cargo ships)*	Pascal Lévesques	Même que ci-dessus *Same as above*	Mêmes que ci-dessus *Same as above*
Desgagnés Marine Petro Inc.	Fournisseur d'équipage (navires-citernes) *Crewing* *(tankers)*	Pascal Lévesques	Même que ci-dessus *Same as above*	Mêmes que ci-dessus *Same as above*
Navigation Desgagnés inc.	Affréteur (navires de charge) *Charterer* *(general cargo ships)*	Alexandre Beauchamp Parent	Même que ci-dessus *Same as above*	Mêmes que ci-dessus *Same as above*
Petro-Nav Inc.	Affréteur (navires-citernes) *Charterer* *(tankers)*	Christopher King	Bureau 601 204, rue Saint-Sacrement Montréal (Québec) H2Y 1W8	☎ (514) 843-8800 (514) 843-9195 info@petro.nav.desgagnes.com

Nom ***Name***	**Statut** ***Status***	**Contact** ***Contact***	**Adresse** **Address**	**Numéros** **Numbers**
Desgagnés Transarctik Inc.	Affréteur (navires de charges) Arctique *Charterer (general cargo ships) Artic*	Dominic Desgagnés	6565, boul. Hébert, bur. 201 Sainte-Catherine (Québec) J5C 1B5	☎ (450) 635-0833 (450) 635-5126 info@transactik.desgagnes.com
Marlow Navigation	Fournisseur d'équipage à l'international (navires de charge) *International Crewing (general cargo Ship)*	Mike Naradko	13, Alexandrias Street P.O. Box 54077 CY-3720 Limassol Cyprus	☎ +357 25882588 +357 25882599 marlow@marlow.com.cy

INSCRIPTION DES NAVIRES AUPRÈS DES ORGANISMES D'INTERVENTION *(RESPONSE ORGANIZATIONS)* AU CANADA

NAVIRE	ECRC (SIMEC) Grands Lacs, Saint-Laurent, Côte Est		ALERT St. John, NB		PTMS Port Hawkesbury, NS		WCMRC Côte Ouest	
	Nº de contrat	Échéance	Nº de contrat	Échéance	Nº de contrat	Échéance	Nº de contrat	Échéance
Acadia Desgagnés	C001-00416	31.12.17	C001-00416	31.12.17	C001-00416	31.12.17	N/A	
Argentia Desgagnés								
Bella Desgagnés								
Claude A. Desgagnés								
Nordik Express								
Rosaire A. Desgagnés								
Sedna Desgagnés								
Zélada Desgagnés								
Nordika Desgagnés								
Miena Desgagnés	TBC		TBC		TBC		N/A	
HHL New York	TBC		TBC		TBC		N/A	
Maria Desgagnés	C002-00002	31.12.17	C002-00002	31.12.17	C002-00002	31.12.17	N/A	
Sarah Desgagnés							N/A	
Damia Desgagnés								
Mia Desgagnés								
Paul A. Desgagnés	TBC		TBC		TBC		N/A	
Espada Desgagnés	C002-05959	19.11.17	C002-05959	19.11.17	C002-05959	19.11.17	N/A	
Laurentia Desgagnés	C002-05315	07.05.17	C002-05315	07.05.17	C002-05315	07.05.17	N/A	
Taïga Desgagnés	C001-21354	16.04.18	C001-21354	16.04.18	C001-21354	16.04.18	N/A	

COORDONNÉES DES ORGANISMES D'INTERVENTION

Organismes d'intervention

ECRC / SIMEC
Eastern Canada Response Corporation Ltd.
Société d'intervention maritime de l'Est du Canada ltée

275 Slater Street, Suite 1201
Ottawa (Ontario) K1P 5H9
Tél. : (613) 230-7369
Téléc. : (613) 230-7344

Mr. Paul Pouliotte, poste 304
Ms. Ann Therrien, poste 308
atherrien@ecrc.ca

Bureau régional de Québec
281, de l'Estuaire
Québec (Québec) G1K 7J8
Tél. : (418) 692-8989
Téléc. : (418) 694-9649
M. Pierre Samson, poste 2229

URGENCE 24 H
(613) 930-9690

ALERT
Atlantic Emergency Response Team

P.O. Box 2353
Saint John (New Brunswick) E2L 3V6
Tél. : (506) 632-4499
Téléc. : (506) 632-4450

Mrs. Andrea Melanson

URGENCE 24 H
(506) 632-4499

PTMS
Point Tupper Marine Services Ltd.

P.O. Box 316
Port Hastings (Nova Scotia) B0E 2T0
Tél. : (902) 625-3611 ou 625-1846
Téléc. : (902) 625-1556 ou 625-3098

Capt. Ed Kehoe, Response Manager
Cell. : (902) 227-7696
Téléav. : (902) 558-2572

URGENCE 24 H
(902) 625-1711

WCMRC
Renseignements disponibles auprès de la Chamber of Shipping of British Columbia aux numéros ci-dessous :
Tél. : (604) 681-2351
Téléc. : (604) 681-4364

Burrard Clean operations division

URGENCE 24 H
(604) 294-9116

Zones d'intervention

ECRC / SIMEC	ALERT	PTMS	WCMRC
Le réseau canadien des Grands Lacs et les canaux les reliant dans la province de l'Ontario incluant le lac Supérieur, la rivière St. Mary, le lac Huron, la rivière St. Clair, le lac St. Clair, la rivière Detroit, le lac Érié, le lac Ontario; le fleuve St-Laurent, le lac Winnipeg, la rivière Athabasca de Fort McMurray au lac Athabasca, et le lac Athabasca. Les eaux de la Baie James, de la Baie d'Hudson et de la Baie d'Ungava; les eaux de la province de Québec (incluant le St-Laurent) et les eaux des provinces atlantiques (excluant les eaux au nord de la latitude 60° Nord et les régions couvertes par ALERT et PTMSL).	Les eaux canadiennes comprises entre la frontière Ouest constituée d'un arc d'un rayon de 50 milles nautiques du point 45º08'03" N, 66º17'12" W et la frontière Est constituée d'un arc d'un rayon de 50 milles nautiques du phare de Cape Spencer.	Les eaux canadiennes à l'intérieur d'un rayon de 50 milles nautiques à partir du phare de Bearhead, 45º33' N, 61º17' W, excluant le nord du détroit de Canso dans St. Georges Bay, les eaux des lacs Bras D'or, des canaux St. Andrew, St. Patrick, Great Bras D'or et les autres eaux intérieures de l'île du Cap Breton.	Les eaux bordant la province de la Colombie-Britannique, les eaux internes de cette province, et excluant les eaux au nord du 60e parallèle de latitude.

Numéros importants en cas d'urgence au Canada
Important numbers in case of emergency in Canada

Catégorie *Category*	Nom et adresse *Name and Address*	Numéros *Numbers*	Contacts / Remarques *Contacts / Remarks*
Hot Lines	**Shell**	☎ 24hrs (713) 241-2532	**Department Stasco**
	Valero	☎ 1-800-964-2210 1-210-736-2210	
	Suncor	☎ (905) 399-9954	**Masiz Rahman**
		Marshal Dunbar ☎ (905) 804-3449 ☎ cell. : (647) 459-2671	**Contact 1 Suncor DPP**
		Francine Dagenais ☎ (905) 804-7153 ☎ cell.: (417) 200-9140	**Contact 1 Suncor CPP**
		Marshal Dunbar *en interim* ☎ (905) 804-3449 ☎ cell. : (647) 459-2671	**Contact 1 Suncor Lub**
		A. Haq ☎ (905) 804-7150 ☎ Cell.: (905) 320-6541	**Contact 2 All products**
		24hours / 7 days ☎ (403) 296-3000	**Contact 3 All products**
		Jason He ☎ (403) 237-3498 ☎ cell.: (403) 813-8158	**Contact 1**
		Emergency line ☎ (703) 217-6121	**Contact 2**
	Irving	☎ (506) 333-9379	**Eric Olsen**
	Kildair	**Steven Packwood** ☎ (450) 746-0994 ext 322 (450) 746-0999 tracy@kildair.com kildair@kildair.com	
		Hydro Quebec CAM Operator ☎ (418) 986-7299 ext 7230	**Kildair – Cap-aux-Meules**
	La fédération des coopératives du nouveau Québec (FCNQ)	**Jean-Luc Mallette** ☎ (514) 457-9371 ext 356 (514) 457-4626	Directeur Principal/ *Senior Manager* Services Pétroliers/ *Petroleum Services*

Ports ***Ports***	**Port de Montréal**	**Urgence Marine** ☎ (514) 640-3138 🖷 (514) 640-4509	**Real Ricard Jr.** **Chargé de projet** ***Ship Maintenance Expert*** ☎cell. (514) 829-6908 **Stephen Chouinard** **Directeur des opérations** ***Director of Operations*** ☎ cell. (514) 821-7347
		Capitainerie ☎ Général (514) 283-7011 ☎ Urgence (514) 283-6911	
	Port de Québec	**Capitainerie** ☎ (418) 648-3556	**24hrs sur la voie VHF 77**
	Port-Cartier	☎ (418) 766-8753	**Quai Arcelor Mittal** ☎ (418) 766-2000 Ext 2400, 2485 ou 2439
	Trois-Rivières	☎ (819) 378-2887	
	Port de Sept-Îles	☎ (418) 968-1231	**Shawn Grant** **Harbour Master** ☎ (418) 961-1229
	Rio Tinto Alcan (Port Alfred)	☎ (418) 544-3311	
Fournisseurs ***Suppliers***	**Expédition quais et écluses** 1621, rue Gladstone Montréal, QC H4E 1C6	☎ (514) 932-9959 🖷 (514) 932-2331	**Jacques Chiasson**
	Seagulf Marine Industries Inc. **Bureau de Montréal** 815, rue Mill Montréal, QC H3C 1Y5	☎ (514) 935-6933 🖷 (514) 935-3665	**Robert Zeagman** ☎ dom. (514) 672-5202
	Seagulf Marine Industries Inc. **Bureau de Halifax** Burnside Industrial Park 38 Payzant Avenue Dartmouth, NS B3B 1Z6	☎ (902) 481-1661 🖷 (902) 481-8548	
	Seagulf Marine Industries Inc. **Bureau de St Catharines** 113 Cushman Road, Unit 16-17 St-Catharines, ON L2M 6S9	☎ (905) 688-2661	

Remorqueurs ***Tugs***	**Groupe Océan** 105 Abraham-Matin, Bureau 500 Québec, (QC), G1K 8N1 Canada	☎ (418) 694-1414 (418) 692-4572 www.groupeocean.com ocean@groupeocean.com Hamilton : ☎ (905) 528-3960	Benoit Lefrenière ☎ cell. (418) 254-7487 benoit.lafreniere@groupeocean.co Maryse Paré (Bur. / Off. QC) Maryse.Pare@groupeocean.com Frank Montecalvo (Dir, ON) Frank.Montecalvo@groupeocean.com
	The Great Lakes Group 4500 Division Ave Cleveland, OH 44102-2228 USA **Cette compagnie offre aussi un service de réparation d'urgence 24hr/7**	☎ (216) 621-4854 (216) 621-7616 www.thegreatlakesgroup.com *This company also offer a 24hr/7 emergency repair services*	**Kyles Fries** **Assistant Vice-President-Ship Repair** ☎ 1-800-321-3663 ext 132 ☎ cell. (440) 714-1439
	McKeil Marine Limited Fleet Management	☎ (905) 528-4141 ext.248	**Chris Kirby** ckirby@mckeil.com
	Corporation de gestion de la Voie maritime du Saint-Laurent ***St. Lawrence Seaway Development Corporation*** 151, rue de l'Écluse Saint-Lambert, QC J4R 2V6	☎ (450) 672-4110 (450) 672-7098 www.grandslacs-voiemaritime.com	**Position des navires** **Montréal au Lac Ontario** ☎ (450) 672-4115 Surveillant ext :2232 Controleurs ext :2229 **Welland Canal** Surveillant ext :5370 Control Center ext :5450

TC Sureté Maritime ***TC Marine Security***	**Sûreté des Transport** **Région du Québec** 401-1550 av d'Estimauville Québec, QC, G1J 0C8	☎ 24hrs 1-888-857-4003 ☎ Bureau (418) 648-4351 ☎ cell: (418) 572-4604 💻 langis.tremblay@tc.gc.ca	
Inspecteurs sécurité maritime ***Marine Safety Inspectors***	**St. Catharines**	☎ (905) 688-4360 🖹 (905) 688-6285	
	Sarnia	☎ 1-877-281-8824 ☎ (519) 383-1826 🖹 (519) 383-1997	
	Thunder Bay	☎ (807) 345-6953 🖹 (807) 345-0521	
	Baie-Comeau	☎ (418) 296-3524 🖹 (418) 296-6680	
	Gaspé	☎ (418) 368-2444 🖹 (418) 368-7022	
	Îles-de-la-Madeleine	☎ (418) 986-6275 🖹 (418) 986-4751	
	Kangiqsujuaq	☎ (819) 338-1213 🖹 (819) 338-1241	
	Montréal	☎ Général: 1-888-649-6262 ☎ Inspection:(514)496-2084 🖹 (514) 283-6595 💻marinesafetymtl@tc.gc.ca	
	Québec	☎ (418) 648-4166 🖹 (418) 648-3790	
	Rimouski	☎ 1-800-427-4417 ☎ (418) 722-3040 🖹 (418) 722-3332	
	Sept-Îles	☎ 1-877-303-3435 ☎ (418) 968-4991 🖹 (418) 968-5516	
	Charlottetown	☎ 1-855-859-3123 ☎ (902) 566-7987 🖹 (902) 566-7991	
	Corner Brook	☎ 1-855-859-3123 ☎ (709) 637-4390 🖹 (709) 637-4391	
	Dartmouth	☎ 1-855-859-3123 ☎ (902) 426-4421 🖹 (902) 426-6657	

	Saint-John	☎ 1-855-859-3123 ☎ (506) 636-4748 🖹 (506) 636-4756	
	St. John's	☎ 1-855-859-3123 ☎ (709) 772-5166 🖹 (709) 772-0210	
	Sydney	☎ 1-855-859-3123 ☎ (902) 564-7002 🖹 (902) 564-7648	
Inspecteur en devoir / *Surveyor on duty :* : Se référer à la Garde Cotière / *Refer to Coast Guard* 1-800-363-4735			
Sécurité Maritime Garde Côtière Canadienne *CCG Marine Safety*	**200 rue Kent, 5e étage Ottawa, ON K1A 0E6**	☎ (613) 993-6943 🖹 (613) 998-3255	
Intervention Environnementale Garde Côtière Canadienne *Environmental Response Canadian Coast Guard*	**Région de Terre-Neuve et Labrador / *Newfouldland and Labrador Region***	☎ 24hrs 1-800-563-9089	
	Région du Centre et de l'Arctique *Cenral and Arctic Region*	☎ 24hrs 1-800-265-0237	
	Région du Québec *Quebec Region*	☎ 24hrs 1-800-363-4735	
	Région des Maritimes *Maritimes Region*	☎ 24hrs 1-800-565-1633	
	Région du Pacifique *Pacific Region*	☎ 24hrs 1-800-889-8852	

Bureau des Glaces ***Ice Office***	**Région de l'Atlantique** ***Atlantic Region***	☎ (709) 779-2078 ☎ 1-800-565-1633 🖷 (709) 772-5369 Telex : 016-4530 💻 CGGCICEWATCH@DFO-MPO.GC.CA	Basé à St-John's
	Région du Québec ***Quebec Region***	☎ (418) 648-7290 ☎ (418) 648-5620 🖷 (418) 648-7305	Basé à Québec
	Région du Centre et de l'Arctique ***Arctic and Central Region***	☎ (519) 383-1814 ☎ 1-800-265-0237 🖷 (519) 337-2498	Basé à Sarnia
Recherche et Sauvetage ***Search and Rescue***	**Terre-Neuve et Labrador** ***Newfouldland and Labrador***	☎ 1-800-563-2444 ☎ (902) 427-8200	Basé à Halifax
	Nouvelle-Écosse, Nouveau-Brunswick, Ile-du-Prince-Édouard ***Nova Scotia, New Brunswick, Prince Edward Island***	☎ 1-800-565-1582 ☎ (902) 427-8200	Basé à Halifax
	Québec ***Quebec***	☎ 1-800-463-4393 ☎ (418) 648-3599	Basé à Québec
	Ontario, Territoires du Nord-Ouest, Nunavut ***Ontario, NorthWest Territories, Nunavut***	☎ 1-800-267-7270 ☎ (613) 965-3870	Basé à Trenton
	Colombie-Britannique, Yukon ***British-Columbia, Yukon***	☎ 1-800-567-5111 ☎ (250) 413-8933 ☎ cell. #727	Basé à Victoria

Société de classification ***Classification Society***	**Lloyd's Register North America** **Bureau de Montréal** 1868, boul. des Sources, Suite 125 Pointe-Claire, QC H9R 5R2	☎ (514) 630-3784 🖷 (514) 630-3923 💻 montreal@lr.org	**Emmanuel Patrouille** **Senior Surveyor** ☎ cell. (514) 209-3710 💻Emmanuel-Patrouille@lr.org **Igor Potey** **Surveyor (Quebec City)** ☎ cell. (418) 564-6736 💻 igor.potey@lr.org
NAVIRES-CITERNES **Maria** **Sarah** **NAVIRE PASSAGERS** **Bella** **Nordik Express** **NAVIRE DE CHARGE** **Acadia**	**Lloyd's Register North America** **Bureau de Halifax** Suite 812, Queen Square 45 Alderney Drive Dartmouth, NS B2Y 2N6	☎ (902) 423-7506 🖷 (902) 425-2913 💻 halifax@lr.org	**Bud Streeter** **VP & Operations Manager** ☎ cell. (902) 499-0244 💻 bud.streeter@lr.org **Craig Williams** **Senior Surveyor In Charge** ☎ (902) 406-4166 ☎ cell. (902) 497-9849 💻 Craig.Williams@lr.org
	Lloyd's Register North America **Bureau de Toronto** 3050 Harvester Road, Suite 208 Burlington, ON L7N 3J1	☎ (905) 631-9420 🖷 (905) 631-9430 💻 toronto@lr.org	**Barry Shepherd** **Marine Manager Eastern Canada** ☎ cell. (905) 515-7385 💻 barry.shepherd@lr.org **Vitaliy Melnyk** **Senior Surveyor In Charge** ☎ cell. (905) 320-6139 💻 vitaliy.melnyk@lr.org **Michael Skrzypczak** **Senior Surveyor** ☎ cell. (905) 515-7384 💻Michael.Skrzypczak@lr.org **James Zheng** **Senior Surveyor** ☎ cell. (905) 320-9039 💻 James.Zheng@lr.org
	Lloyds' Register of Shipping **Bureau de Londres** 71 Fenchurch Street London, England EC3M 4BS	☎ 011 44 20 7709 9166 💻 www.lr.org	

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	Halifax Office 99 Wyse Road, Suite 900 Dartmouth, Nova Scotia, B3A 4S5 Canada	☎ (902) 464-0905 💻 halifax.maritime@dnvgl.com	

Services d'intervention d'urgence en cas de déversement aux USA
Spill Emergency Response Services in USA

Catégorie *Category*	Nom et adresse *Name and Address*	Numéros *Numbers*	Contacts / Remarques *Contacts / Remarks*
USCG	*National Response Center*	☎ (800) 424-8802 ☎ (202) 267-2675 (202) 479-7165	VRP Section 10
USCG	*Captain of the Port*		VRP Section 10
USCG	*State Agencies*		VRP Section 10
USCG	*Boundary States*		VRP Section 10
Qualified Individual (QI)	**Hudson Marine Management Services** Ferry Terminal Building, Suite 300 2 Aquarium Drive Camden, NJ 08103 **(under contract)**	☎ **24 h** **(856) 342-7500** (856) 342-8888 hmms@hudsonmarine.com www.hudsonmarine.com	VRP Section 2 **Per W. Christensen** President and CEO **Cynthia A. Hudson** V.P. response management
Oil Spill Removal Organization (OSRO)	**National Response Corp. & Clean Pacific Alliance** Suite T-103 3500 Sunrise Highway Great River, NY 11739 **(under contract)**	☎ **24 h** **(800) 899-4672** ☎ (631) 224-9141 ext 0 (631) 224-9082 IOC* (631) 224-9086 iocdo.@nrcc.com dwick.@nrcc.com ** www.nrcc.com *IOC: International Operations Center **Login username : clients Password : access2007	VRP Section 2 **Steve A. Candito** President scandito@nrcc.com
Oil Spill Removal Organization (OSRO)	**Marine Pollution Control US Great Lakes** 8631 West Jefferson Detroit, Michigan 48209-2691 **(not under contract)**	☎ **24h** (313) 849-2333 ☎ **24h** 1-800-521-8232 (313) 849-1623 (313) 216-1778 info@marinepollutioncontrol.com www.marinepollutioncontrol.com	VRP Section 2 **Mike McInchak** Operations Manager **Jim Kemeny** Director of Operations
Oil Spill Removal Organization (OSRO)	**Washington State Maritime Cooperative (WSMC)** 100 West Harrison, suite S560, Seattle, WA 98119 **(not under contract)**	☎ **24h** (206) 448-7557 (206) 443-3839 admin@wsmcoop.org www.wsmcoop.org	VRP Section 2 **Roger Mowery** Executive Director

Catégorie ***Category***	**Nom et adresse** ***Name and Address***	**Numéros** ***Numbers***	**Contacts / Remarques** ***Contacts / Remarks***
Salvage, Firefighting, & Lightering	**Resolve Marine Group** P.O. Box 165485 Port Everglades, FL 33316 **(under contract)**	☎ **24 h** INTL (954) 764-8700 (954) 764-8724 ☎ **24 h** USA (866) 764-1397 www.resolvemarine.com info@resolvemarine.com	VRP Section 2 **Joseph E. Farrell Jr.** President / CEO **Todd Schauer** Senior Project Manager Mobile: (954) 658-6429 tschauer @resolvemarine.com **Frank Leckey** Director of Operations Resolve Towing and Salvage **Todd Duke** Resolve Fire and Hazards Response Cell. (954) 444-3433
Salvage, Firefighting, & Lightering	**Titan Maritime Industries Inc.** 700 NW 33rd Street, Suite 290 Pompano Beach, FL 33064, USA **(not under contract)**	☎ **24 h** (954) 545-4143 (954) 545-4552 www.titansalvage.com	**Dan Olson** **Operations Manager** Mobile (206) 854-4057 **Richard Fairbanks** **Vice President** Tel home: (954) 522-6276 Mobile: (954) 914-9876 Int'l. beeper: (954) 879-4806 **David Parrot** **Managing Director** Tel home: (954) 462-7763 Mobile: (954) 914-9874 Int'l beeper: (954) 879-6348 **Phil Reed** **Director Engineering** Tel home: (954) 753-8464 Mobile: (954) 682-9936

Salvage, Firefighting, & Lightering	**Donjon Marine Co. Inc.** 1250 Liberty Ave. Hillside, New Jersey 07205 **(not under contract)**	☎ **24 h** **(908) 964-8812** (908) 964-7426 www.donjon.com	**J. Arnold Witte** Pres. & CEO (Salv. Master) Tel. home: (908) 353-4718 **William "Billy" Kratz Jr.** Salvage Master Tel home: (609) 443-4972 **John A. Witte Jr.** Ex. V-P (Asst. Salv. Master) Tel home: (908) 352-8168
Dispersants and In-Situ Burning	**Spiltec** 19220 N.E. 143rd Place Woodinville, WA 98077-7839 USA **(not under contract)**	☎ (425) 869-0988 (425) 869-7881	VRP Section 2 **Alan A. Allen** Tel. home: (425) 869-2578
National Vessel Movement Center	Avis d'arrivée et de départ douanes américaines *Notice of arrival and departure US Customs*	☎ **24hrs** 1-800-708-9823	

Transports Canada – Région du Québec / Transport Canada – Quebec Region

Sécurité et sûreté maritimes / Marine Safety and Security

Octobre 2017 / October 2017

p

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Michel Boulianne – (418) 648-4615
Fax (418) 648-3790

CENTRE DE TRANSPORTS CANADA – QUÉBEC / QUEBEC - TRANSPORT CANADA CENTRE

NM-SEP

Centre TC Sept-Îles / Sept-Îles TC Centre

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Leblanc, Pierre (M)
Monger, Ken (C)
Rodrigue, Denis (C)
Thériault, Manon (N)

Adjointe / Assistant
Wright, Sindie
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Desgagnés, Éric (C)
Guay, Mathieu (N)
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Laliberté, Pascale (occ.)
Thibault, Geneviève

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Briffaud, Denis (EL)
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Chaudhry, Mazhar (N)
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Germain, Guy (N)
Leduc, Alexandre (N)
Lefebvre, Luc (M)
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Paradis, Serge (M)
Tabet, Élie (PB)
Thibault, Chantale (N)
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Duranceau, Danielle (N)
Lachance, Bernard (N)
Lezhankin, Yevgen (N)
Lizotte, Maxim (M)
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Rubinato, Gino
Scott, Darren

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Harbour, John (N)
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(Vacant) (N)
Boudreau, J.-S. (C)
Gendron, Sylvain (C)
Marquis, J-P. (E / N)
Therrien, Gaël (M)

Adjointe / Assistant
Nadeau, Suzy

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KANGIQSUJUAQ

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011-8816-314-342926

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Bureau de la sécurité nautique / Office of Boating Safety

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Agents / Officers
Boivin, Nathalie
Girard, Isabelle
Larouche, Véronique
Racine, Marc
Tellier, Jean

NOTE : ↑ Hiérarchie organisationnelle

LEGENDE / LEGEND

(occ.) ⎫ *Employé(e) occasionnel(le), 90 jours / Temporaire*
(C) ⎫ Coque / Hull *(i.e. Architecte Naval)*
(EL) ⎫ Électrique / Electrical
(EQ) ⎫ Équipement / Equipment
(IMH) ⎫ Installations de manutention d'hydrocarbures / Oil Handling Facilities
(M) ⎫ Machinerie / Machinery
(N) ⎫ Nautique / Nautical
(PB) ⎫ Petits bâtiments / Small Vessels
(IE) ⎫ Intervention environnementale

SÉCURITÉ ET SÛRETÉ MARITIMES | MARINE SAFETY AND SECURITY

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401-1550, avenue d'Estimauville
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QUÉBEC – SÉCURITÉ NAUTIQUE

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Nanuturlik Landholding
Corporation of Kangirsujuaq
Case postale 39
Kangiqsujuaq (Québec)
J0M 1K0

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Téléc. : 819-338-1241
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Satellite :011-8816-314-342926

Nanuturlik Landholding
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8-305, boul. René-Lévesque O.
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Cédric Baumelle, Gestionnaire
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Téléc. : 514-283-6595

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GASPÉ - CENTRE DE SERVICES TC

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Téléc. : 418-986-4751

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Charles Bhérer, gestionnaire int.
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Sept-I. : 418-968-5439
Téléc. : 418-296-6680

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PORT-CARTIER - CENTRE DE SERVICES TC

Centre Transports Canada
A l'intérieur du Centre local d'emploi,
2, rue Elie-Rochefort
Port-Cartier (Québec) G5B 2N2

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Téléc. : 418-766-8711

Transport Canada Center
Inside the Local employment centre
2, rue Elie-Rochefort
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Téléc. : 418-296-6680

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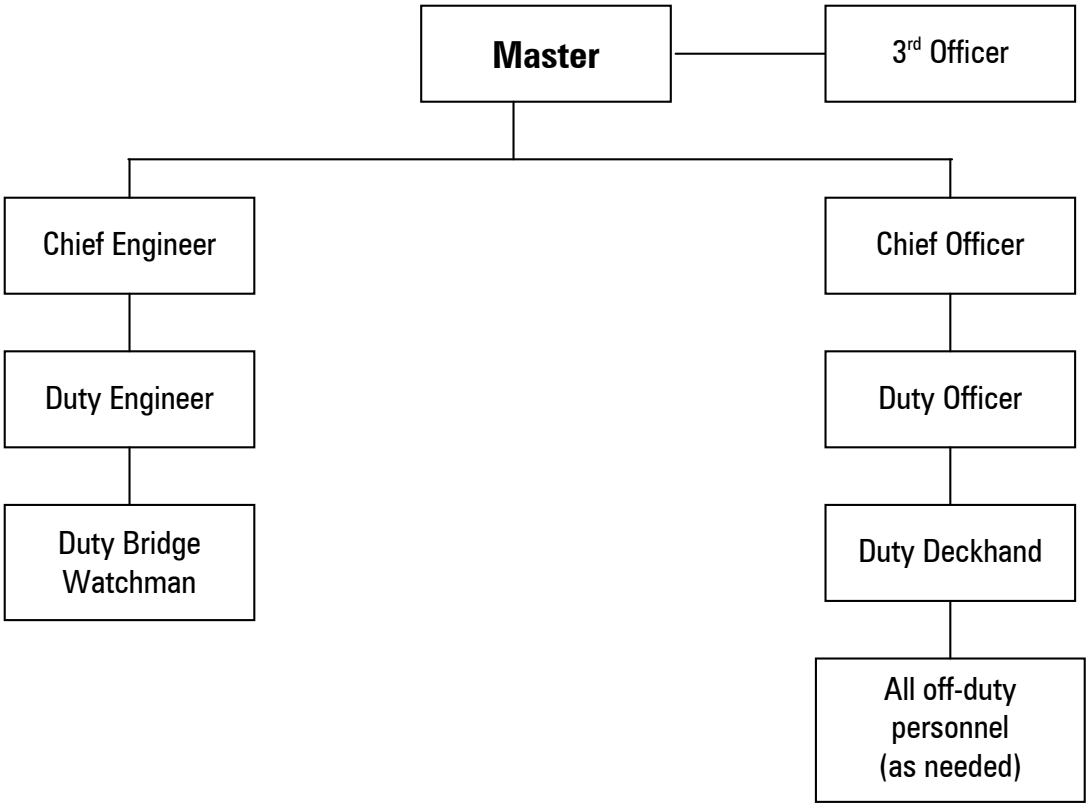
Phone : 514-633-2930

Appendix 4
Oil Pollution Prevention Team

1. Shipboard Oil Pollution Prevention Team Organisation Chart



2. Shipboard Oil Pollution Prevention Team General Responsibilities

The following crew members are in charge in the event of a spill – actual or probable – to bring the accident under control, limit outflows, organize onboard clean-up procedures and determine the additional manpower needed.

2.1 Master

Overall in charge of operation on board dealing with a spill; responsible for all steps to be taken especially for the two main categories – reporting and action. Report incident as required (Chapt. 2,2). Remains as owner's senior representative until relieved by the Fleet Manager, Superintendent or Head Office Representative.

2.2 3rd Officer

Secretary to Master. Transmit and receive reports as requested by Master. Keep log of all events and progress.

2.3 Chief Officer

In charge of deck operation. Keep Master informed and updated on the situation and the results from actions taken to limit outflow.

2.4 Chief Engineer

In charge of bunker operation; should keep the Master informed and updated on the situation and the results from action taken to limit oil outflow.

2.5 Duty Officer

Mobilise deckhands to the best position for keeping escaping oil from running over the vessel's sides. Mobilise fire fighting squad as needed.

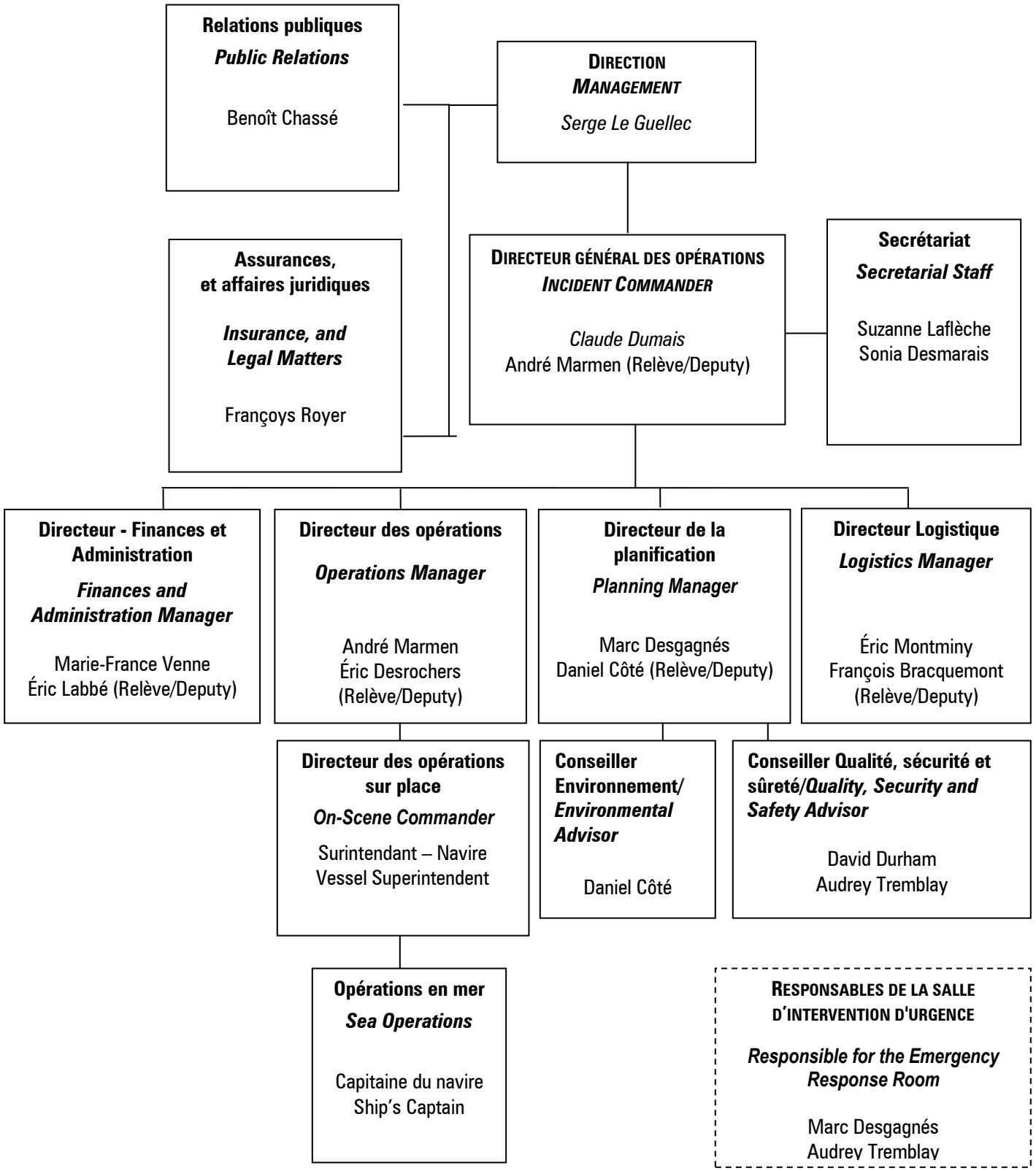
2.6 Duty Engineer

Assist Chief Engineer. Prepare for fire fighting. Ensure sufficient power and water to deck; organize on board clean-up equipment.

2.7 Duty Deckhand

Position sorbent material to prevent any oil from reaching the railing. Commence clean-up by using the on board spill clean-up equipment.

3. Shore Oil Pollution Prevention Team Organisation Chart



4. Shore Oil Pollution Prevention Team General Responsibilities

4.1 Incident Commander

He is the leader of the team and responsible for co-ordination between all parties. He is the main interlocutor of the Master, authorities and various entities. Contacts classification Societies & Shipyards.

4.2 On-Scene Commander

The Shore Operation Manager arranges and provides information for emergency, medical assistance as needed. He provides additional personnel and equipment as required.

4.3 Planning Manager

He is the adviser for safety, security and environmental matters.

He communicates with relatives or manning agency in case of casualties amongst officers and crew members.

4.4 Insurance and Finance Manager

The insurance manager advises on liability and insurance matters. He confers with underwriters and local agents. He consults and requires the advice of P & I Club average adjusters and salvage interface. He is also responsible for all matters relating to finance.

4.5 Logistics Manager

In charge to deliver to the ship the fire fighting and the pollution control equipment as well as the other spares and materials as required by circumstances.

4.6 Public Relations Coordinator

The Public Relation Coordinator as official media spokesman, will maintain a constructive dialogue with the news media, make available to the press relevant information about any on-going operation, supply additional relevant background information, prepare and distribute press releases, arrange press conferences as appropriate and assess the need to contact a public relations firm.

4.7 Secretaries

The secretaries and the operators are on duty during working hours. They are responsible for the ship documentation and will provide the Emergency Response Team with any necessary plans, notices and so forth.

5. Organisation

5.1 Permanence

The Emergency Response Team is operational on a non-stop 24-hour basis.

5.1 Emergency Response Room

A fully-equipped Emergency Response Room is at the disposal of the Emergency Response Team.

5.2 Communication equipment

The equipment listed below is available in the main office or in the emergency response room:

- Main switchboard phone lines plus dedicated phone lines
- Fax machines
- Computers with access to Internet
- Electronic board, flip charts, etc.

5.3 Documentation

- Vessels detailed plans
- Nautical documentation
- Company Contingency Plans
- SOPEP
- VRP
- SERS
- Emergency Response Team Handbook

Appendix 5
Operational Spills Check list

A. Operational oil/NLS spill response check list

This check list is intended for response guidance when dealing with an oil/NLS spill during bunkering operations. Responsibility for action to deal with other emergencies which result from the oil/NLS spill will be as laid down in existing plans, such as the Emergency Muster List.

ACTION TO BE CONSIDERED	ACTION TAKEN		PERSON RESPONSIBLE
IMMEDIATE ACTION			
Sound emergency alarm	Yes ❑	No ❑	Person discovering incident
Initiate vessel emergency response procedures	Yes ❑	No ❑	Officer on duty
INITIAL RESPONSE			
Cease bunkering operations	Yes ❑	No ❑	Chief engineer
Close manifold valves	Yes ❑	No ❑	Chief engineer
Stop air intake to accommodation	Yes ❑	No ❑	Officer on duty
Stop non-essential air intake to engine room	Yes ❑	No ❑	Engineer on duty
Locate source of leakage	Yes ❑	No ❑	Chief engineer
Commence clean-up procedures using absorbents and permitted solvents	Yes ❑	No ❑	Chief officer
Comply with reporting procedures	Yes ❑	No ❑	Master
SECONDARY RESPONSE			
Assess fire risk from release of flammable substances	Yes ❑	No ❑	Chief officer
Reduce oil level in relevant tank by dropping oil into an empty of slack tank	Yes ❑	No ❑	Chief engineer
Drain affected line to empty or slack tank	Yes ❑	No ❑	Chief engineer
Prepare pumps for transfer of oil, to other tanks or to shore or lighter	Yes ❑	No ❑	Chief engineer
FURTHER RESPONSE			
Pump water into leaking tank to create water cushion and prevent further oil loss	Yes ❑	No ❑	Chief engineer
If leakage is below waterline, arrange divers for further investigation	Yes ❑	No ❑	Master
Calculate stresses/stability. If necessary, request shore assistance with this	Yes ❑	No ❑	Chief officer
Transfer bunkers to alleviate high stresses	Yes ❑	No ❑	Chief officer
Stow residues from clean-up carefully prior to disposal			Officer on duty

B. Casualty oil/NLS spill response check list

This check list is intended for response guidance when dealing with an oil/NLS spill following a casualty. Responsibility for action to deal with the casualty itself will be as laid down in existing plans, such as the Emergency Muster List.

The term "navigator" refers to the officer responsible for passage planning and voyage analysis, usually the second officer.

ACTION TO BE CONSIDERED	ACTION TAKEN		PERSON RESPONSIBLE
IMMEDIATE ACTION			
Sound emergency alarm	Yes ❑	No ❑	Officer on duty
Initiate vessel emergency response procedures	Yes ❑	No ❑	Officer on duty
INITIAL RESPONSE			
Stop air intake to accommodation	Yes ❑	No ❑	Officer on duty
Stop non-essential air intake to engine room	Yes ❑	No ❑	Engineer on duty
Assess further danger to ship or personnel such as capsize or immediate sinking	Yes ❑	No ❑	Master
Cease all cargo and other non-essential operations	Yes ❑	No ❑	Officer on duty
Assess whether oil/NLS has actually been spilt	Yes ❑	No ❑	Chief officer
Is there a probability that it will be spilt	Yes ❑	No ❑	Master
Comply with reporting procedures	Yes ❑	No ❑	Chief engineer
Sound oil/NLS compartments			Chief officer
Sound around vessel if aground			Master
Request outside assistance	Yes ❑	No ❑	Chief officer
Counter excessive list	Yes ❑	No ❑	Officer on duty
Contain spilt oil/NLS	Yes ❑	No ❑	Chief officer
Commence clean-up procedures using absorbents and permitted solvents	Yes ❑	No ❑	Chief officer
FURTHER RESPONSE			
Assess fire risk from release of flammable substances	Yes ❑	No ❑	Chief officer
Consider evacuation of non-essential crew	Yes ❑	No ❑	Master
Assess likelihood of further damage to vessel of cargo	Yes ❑	No ❑	Master
Calculate stresses/stability. If necessary, request shore assistance with this	Yes ❑	No ❑	Chief officer
Transfer cargo or bunkers to alleviate high stresses	Yes ❑	No ❑	Chief officer
Request assistance or escort to port of refuge	Yes ❑	No ❑	Master
Manoeuvre upwind of spill/away from land	Yes ❑	No ❑	Master
Assess whether tide will worsen situation	Yes ❑	No ❑	Navigator
Obtain weather forecast and assess effect	Yes ❑	No ❑	Navigator
Prepare pumps for transfer of oil/NLS to other tanks or to shore or lightening vessel	Yes ❑	No ❑	Chief Engineer

Appendix 6
Contingency Documents
M/T *Dara Desgagnés*

List of Contingency Documents enclosed hereafter:

- Main particulars of vessel;
- Drawings
    - Cargo Piping, sheet 1 of 2 (996.51.31)
    - Schematic Cargo and Stripping Lines, sheet 2 of 2 (996.51.31)
    - Diagram of Fuel Bunkering (996.41.13)
    - General Arrangement Plan, Side (996.31.01)
    - General Arrangement Plan, Stowage (996.31.02)
    - General Arrangement Plan, Upper Deck (996.31.05)
    - Tank Plan (100.25.01b)
    - Vessel Capacity Plan (996.24.04)
- Salvage Agreement (LOF 2000, US Open Form))

Appendix 6
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M/T *Dara Desgagnés*

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    - Vessel Capacity Plan (996.24.04)
- Salvage Agreement (LOF 2000, US Open Form))

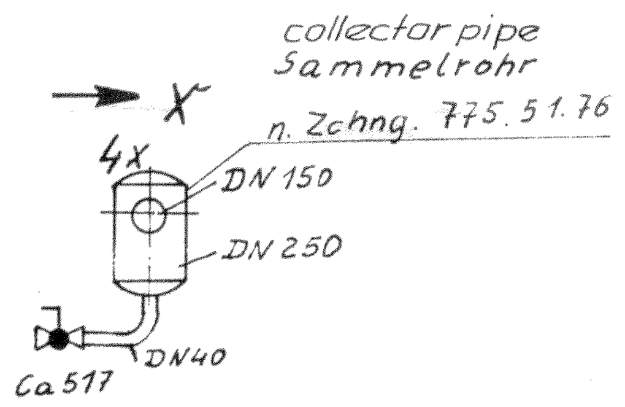
VESSEL PARTICULARS

GENERALITIES

1. SHIP'S NAME :	M/V Dara *Desgagnés*
2. SHIP TYPE:	Oil/Chemical Tanker
3. PORT OF REGISTRY:	Québec
4. OWNER:	Transport Desgagnés inc.
5. INTERNATIONAL CALL SIGN:	VCBW
6. FLAG:	Canadian
7. GROSS TONNAGE/ Deadweight:	6,262 / 10,511
8. IMO NUMBER:	9040089
9. VESSEL DIMENSIONS:	
Length Overall:	123.72 M.
Breadth (Moulded):	17.70 M.
Draft – Summer DWT:	8.36 M.
10. KEEL LAID:	July 24th, 1992
11. DELIVERY:	January 1st, 1993

This plan should be kept available for inspection on request by a port state control officer or by a port state quarantine officer.

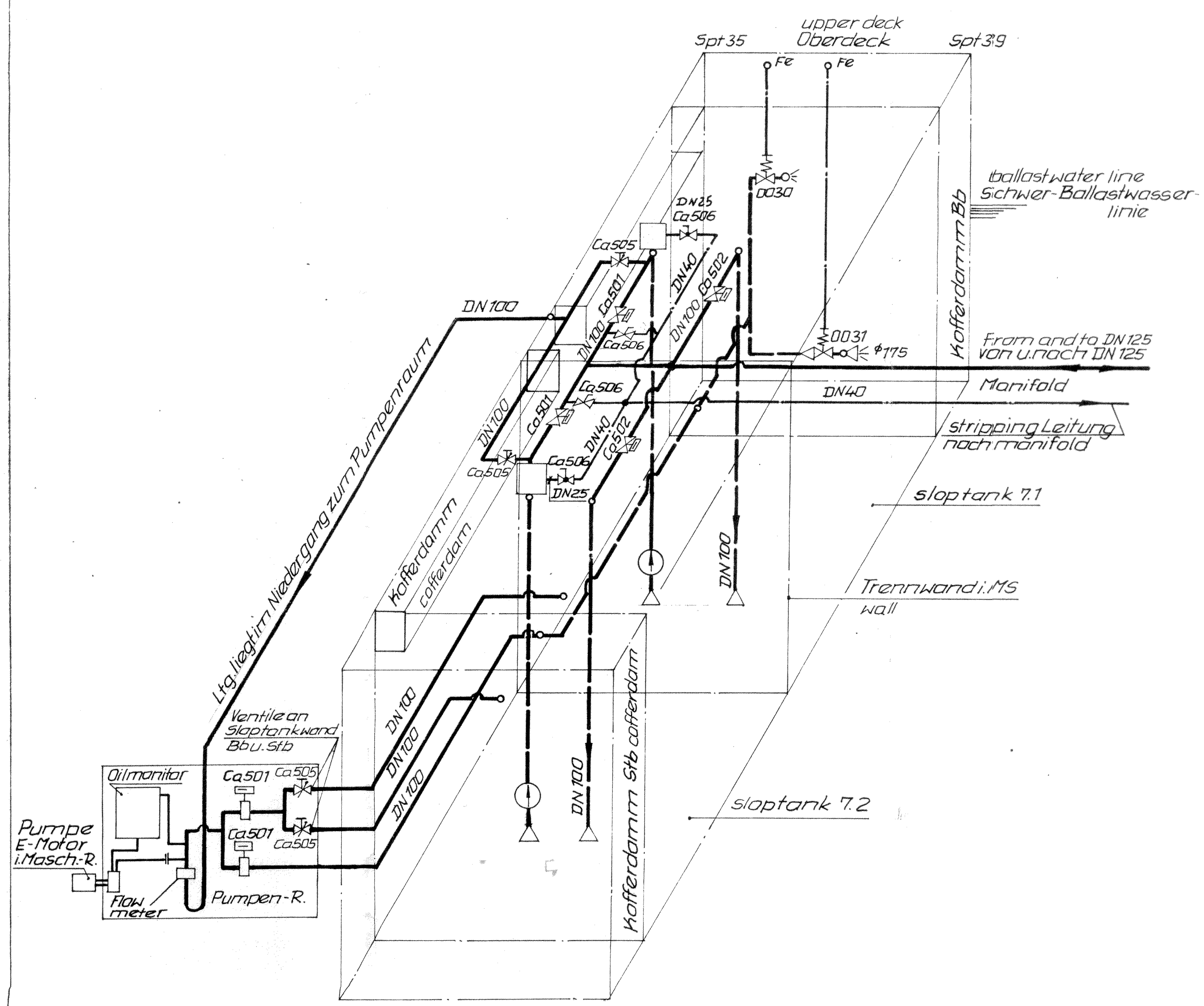
Cargotanks 1-6 Bb.u.Stb.
Schaltung auf Oberdeck
upper deck pd and stbd



3.8

56 a

Sloptanks Bb u. Stb



Niro-Leitungen

DN	
DN 25	33,7 x 1,6
40	44,5 x 2,0
50	60,3 x 2,0
80	88,9 x 2,0
100	114,3 x 2,0
125	139,7 x 2,3
150	168,3 x 2,6
200	219,1 x 2,9
250	273, x 4,0

——— Ladeleitung - cargo line

—·—· Restlenzleitung (strippingleitung)

— — — Leitungen in den Tanks bzw. Kofferdamm - pipe line to tanks and cofferdam

Bemerkungen u. Zeichenerklärungen siehe Bl. 1 P.T.O 1

Änd.-Buchst.	Änderungs-Mitteilung Nr.	Tag	Name	Änd.-Buchst.	Änderungs-Mitteilung Nr.	Tag	Name	Änd.-Buchst.	Änderungs-Mitteilung Nr.	Tag	Name
a	142	24.6.92	[signature]								

COT 12,5 Chem. Tanker Auftr. Nr. 123-126

Werkstoff	1992	Tag	Name	Benennung	Maßstab
Niro 1.4571	Entworfen	12.6.	[signature]	Schema der Lade- und Strippingleitungen cargo-and stripping line	ohne
	Gezeichnet	12.6.	[signature]		
	Geprüft	12.6.	[signature]		
Masse kg ≈	Stand. techn. geprüft				Lichtpause
	Gesehen	19.6.	[signature]		

MTW Schiffswerft GmbH Wismar	Abt. TKM2	Zeichnungs-Nr. 996.51.31	m²
	Tel.-Nr. 2853	Hierzu Blatt -Liste	Bl.-Zahl 2
Ersatz für:		Ersetzt durch:	Bl.-Nr. 2

Paßmaß | Abmaße

Abweichungen für Maße ohne Toleranzangabe 1)

TGL 3897

1) Genauigkeitsgrad einsetzen

8689 M 27-529 VLV Freiberg Ag 307-70 DDR III-15-4 18

35 T/G 16049 370

Änd.-Buchst	Änderungs-Mitteilung-Nr	Tag	Name	Änd.-Buchst	Änderungs-Mitteilung-Nr	Tag	Name	Änd.-Buchst	Änderungs-Mitteilung-Nr	Tag	Name

AUFTRAGS-NR 123-126 — CHEMICAL OIL TANKER — TYP: COT 12,5

Werkstoff	1992	Tag	Name	Benennung	Maßstab
	Bearb.			**GENERALPLAN STAUUNG**	1:100
	Gezeichnet			GENERAL ARRANGEMENT PLAN STOWAGE	
	Geprüft	27.10.			
Masse kg	Stand.-gepr. Gesehen				Lichtpause
	Gesehen				

MTW-Schiffswerft GmbH Wismar	Abt. TKA-1	Zeichnungs-Nr. 996.31.02	0,36 m²
	Tel.-Nr. 2607	Hierzu Blatt -Liste	Bl.-Zahl
Ersatz für:		Ersetzt durch:	Bl.-Nr.

Änd.-Buchst	Änderungs-Mitteilung-Nr	Tag	Name	Änd.-Buchst	Änderungs-Mitteilung-Nr	Tag	Name	Änd.-Buchst	Änderungs-Mitteilung-Nr	Tag	Name

AUFTRAGS-NR 123-126 CHEMICAL OIL TANK TYP: COT 12,5

Werkstoff	1992	Tag	Name	Benennung	Maßstab
	Bearb.	15.03.	Plumar	GENERALPLAN POOP-UND BACKDECK	1:100
	Gezeichnet			GENERAL ARRANGEMENT PLAN	
	Geprüft	27.10		POOP-AND FORECASTLE DECK	
Masse kg	Stand.-gepr. Gesehen				Lichtpause
	Gesehen				

MTW-Schiffswerft GmbH Wismar | Abt. TKA-1 | Tel.-Nr. 2607 | Zeichnungs-Nr 996.31.05

Hierzu Blatt -Liste | Bl.-Zahl

Ersatz für: | Ersetzt durch: | Bl.-Nr.

2

LOF 2000

LLOYD'S STANDARD FORM OF SALVAGE AGREEMENT

(Approved and Published by the Council of Lloyd's)

NO CURE – NO PAY

1 Name of the salvage Contractors: (referred to in this agreement as "the Contractors")	**2** Property to be salved: The vessel: her cargo freight bunkers stores and any other property thereon but excluding the personal effects or baggage of passengers master or crew (referred to in this agreement as "the property")
3 Agreed place of safety:	**4** Agreed currency of any arbitral award and security (if other than United States dollars)
5 Date of this agreement	**6** Place of agreement
7 Is the Scopic Clause incorporated into this agreement? State alternative: Yes/No	
8 Person signing for and on behalf of the Contractors Signature:	**9** Captain or other persons signing for an on behalf of the property Signature:

A **Contractors' basic obligation:** The Contractors identified in Box 1 hereby agree to use their best endeavours to salve the property specified in Box 2 and to take the property to the place stated in Box 3 or to such other place as may hereafter be agreed. If no place is inserted in Box 3 and in the absence of any subsequent agreement as to the place where the property is to be taken the Contractors shall take the property to a place of safety.

B **Environmental protection:** While performing the salvage services the Contractors shall also use their best endeavours to prevent or minimise damage to the environment.

C **Scopic Clause:** Unless the word "No" in Box 7 has been deleted this agreement shall be deemed to have been made on the basis that the Scopic Clause is not incorporated and forms no part of this agreement. If the word "No" is deleted in Box 7 this shall not of itself be construed as a notice invoking the Scopic Clause within the meaning of sub-clause 2 thereof.

D **Effect of other remedies:** Subject to the provisions of the International Convention on Salvage 1989 as incorporated into English law ("the Convention") relating to special compensation and to the Scopic Clause if incorporated the Contractors services shall be rendered and accepted as salvage services upon the principle of "no cure - no pay" and any salvage remuneration to which the Contractors become entitled shall not be diminished by reason of the exception to the principle of "no cure - no pay" in the form of special compensation or remuneration payable to the Contractors under a Scopic Clause.

E **Prior services:** Any salvage services rendered by the Contractors to the property before and up to the date of this agreement shall be deemed to be covered by this agreement.

F **Duties of property owners:** Each of the owners of the property shall cooperate fully with the Contractors. In particular:

- **i** the Contractors may make reasonable use of the vessel's machinery gear and equipment free of expense provided that the Contractors shall not unnecessarily damage abandon or sacrifice any property on board;
- **ii** the Contractors shall be entitled to all such information as they may reasonably require relating to the vessel or the remainder of the property provided such information is relevant to the performance of the services and is capable of being provided without undue difficulty or delay;
- **iii** the owners of the property shall co-operate fully with the Contractors in obtaining entry to the place of safety stated in Box 3 or agreed or determined in accordance with Clause A.

G. **Rights of termination:** When there is no longer any reasonable prospect of a useful result leading to a salvage reward in accordance with Convention Articles 12 and/or 13 either the owners of the vessel or the Contractors shall be entitled to terminate the services hereunder by giving reasonable prior written notice to the other.

H **Deemed performance:** The Contractors' services shall be deemed to have been performed when the property is in a safe condition in the place of safety stated in Box 3 or agreed or determined in accordance with clause A. For the purpose of this provision the property shall be regarded as being in safe condition notwithstanding that the property (or part thereof) is damaged or in need of maintenance if (i) the Contractors are not obliged to remain in attendance to satisfy the requirements of any port or habour authority, governmental agency or similar authority and (ii) the continuation of skilled salvage services from the Contractors or other salvors is no longer necessary to avoid the property becoming lost or significantly further damaged or delayed.

I **Arbitration and the LSSA Clauses:** The Contractors remuneration and/or special compensation shall be determined by arbitration in London in the manner prescribed by Lloyds Standard Salvage and Arbitration Clauses ("the LSSA Clauses") and Lloyd's Procedural Rules. The provisions of the LSSA Clauses and Lloyd's Procedural Rules are deemed to be incorporated in this agreement and form an integral part hereof. Any other difference arising out of this agreement or the operations hereunder shall be referred to arbitration in the same way.

J **Governing law:** This agreement and any arbitration hereunder shall be governed by English law.

K **Scope of authority:** The Master or other person signing this agreement on behalf of the property identified in Box 2 enters into this agreement as agent for the respective owners thereof and binds each (but not the one for the other or himself personally) to the due performance thereof.

L **Inducements prohibited:** No person signing this agreement or any party on whose behalf it is signed shall at any time or in any manner whatsoever offer provide make give or promise to provide or demand or take any form of inducement for entering into this agreement.

IMPORTANT NOTICES

1 **Salvage security.** As soon as possible the owners of the vessel should notify the owners of other property on board that this agreement has been made. If the Contractors are successful the owners of such property should note that it will become necessary to provide the Contractors with salvage security promptly in accordance with Clause 4 of the LSSA Clauses referred to in Clause I. The provision of General Average security does not relieve the salved interests of their separate obligation to provide salvage security to the Contractors.

2 **Incorporated provisons.** Copies of the Scopic Clause; the LSSA Clauses and Lloyd's Procedural Rules may be obtained from (i) the Contractors or (ii) the Salvage Arbitration Branch at Lloyd's, One Lime Street, London EC3M 7HA.

Telephone + 44(0)20 7327 5408
Fax +44(0)20 7327 6827
Email lloyds-salvage@lloyds.com
www.lloydsagency.com

remarks

Filling warning 95% over flowing
Filling- and temperature
fixed tank cleaning masch.
transport washing masch.
blend
cargo pumps
access to cargo tanks
" to wingtank and cofferdam
safety valve
stop cock
ball valve
isolating valve

Zeichenerklärung

Füllstandswarnung 95% Füllung
Füllstands- u Temperaturanzeige
feste Tankwaschanlage
Dom f. transp. Tankwaschmasch. u. Lüfter
Blende
Ladepumpe
Einstieg zu den Ladetanks
Einstieg z.d. wing tanks bzw Kofferdamm
Sicherheitsventil
Absperrklappe
Kugelhahn
Isolierventil

shut-off non-return valve
absperrbares Rückschlagventil
Druckluftventil mit Schlauchanschl.
compressed-air valve

Cargo Oil Pumps

Type:
SD 125 für Lade- u. Wingtanks
SD 100 für Sloptanks
Frank Mohn Norwegen

Betriebsdruck: 11,0 bar
Probedruck: 16,5 bar

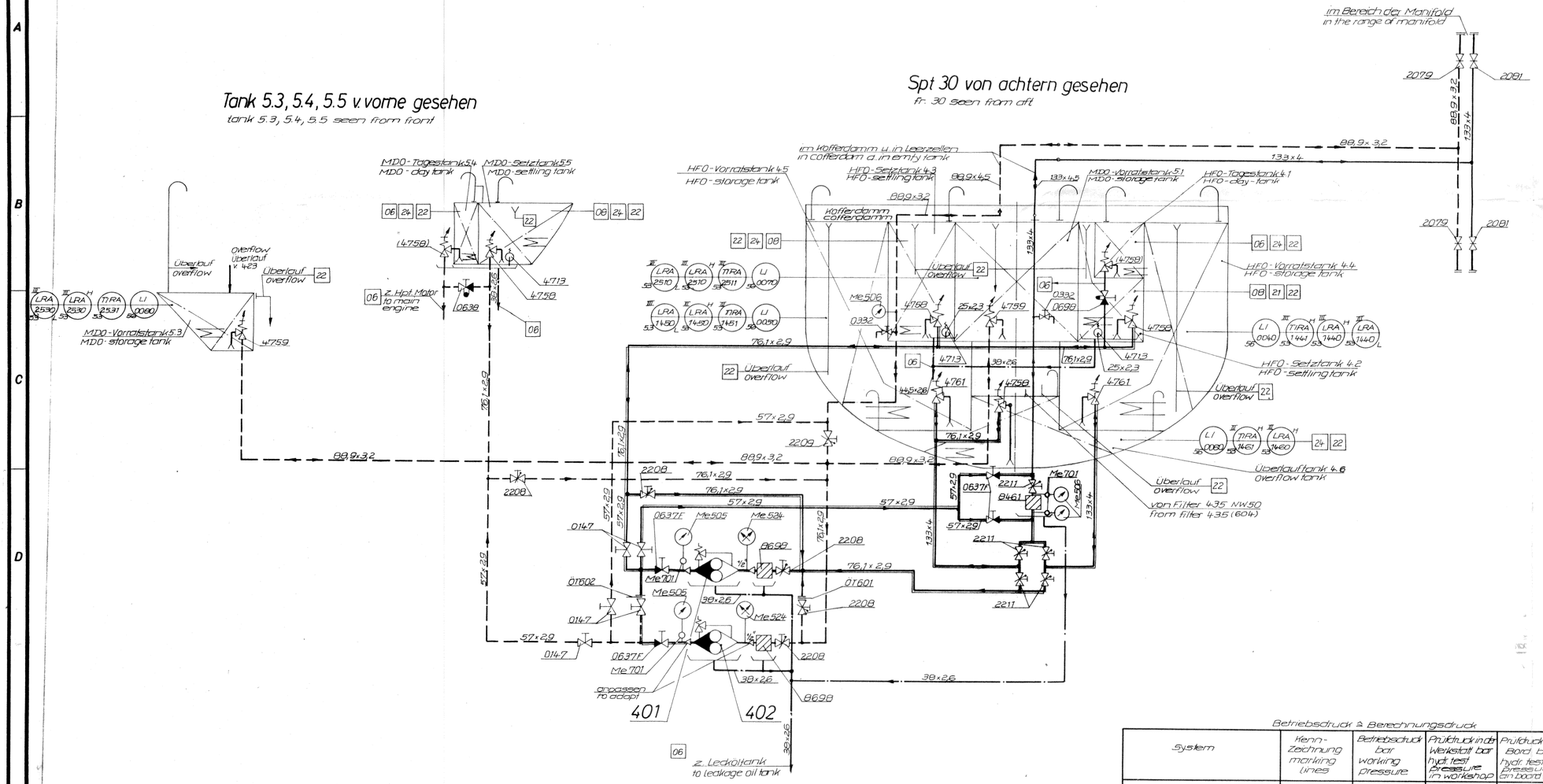
Niro-pipe line
Niro-Rohrleitungsabmessungen

DN 25	33,7 × 1,6
40	44,5 × 2,0
50	60,3 × 2,0
80	88,9 × 2,0
100	114,3 × 2,0
125	139,7 × 2,3
150	168,3 × 2,6
200	219,1 × 2,9
250	273 × 4,0

Strippingleitungen, Druckluftanschluß u. Sloptankentleerung siehe Bl. 2
P.T.O. 2

123-126				COT-10
1992	Tag	Name	Benennung	Maßst
Entw.	23.10.		Schema d. Ladeleitungen	1:100
Gez.			Schema of cargo line	
Gepr.				
St.gepr.				
Geseh.				
MTW-Schiffbau GmbH Wismar	Abt TKM 2 Tel. 2499		Zeichn. Nr. 996.51.31	Bl. Z 2 Bl. Nr. 1

8609/H 27-529 VV Freiberg Ag 307/86 III/15/4 187 1439/6 22,0 T/C 31767 +



Bemerkungen:

1. Sinnbilder und allgemeine Bemerkungen siehe Zeichng. Nr. 996.41.21
2. Meßstellen (Zeichen ⊖ u. ◯) siehe Liste der Meßstellen 800.62.35
3. Technische Daten der Maschinen u. Apparate siehe Zeichng. Nr. 996.41.02
4. Werkstoffe: Rohre St geschweißt
   Armaturen an Tanks: GS/Niro oder GGG/Niro
   in Leitungen: GGL/Niro
   GT/Niro
5. Anschlußbezeichnungen:
   - 06 Schema Brennstoffbetriebssystem Z.Nr. 996.41.12
   - 22 Schema Luft- Peil- u. Überlaufrohre Z.Nr. 996.51.25 u. 26
   - 24 Schema Tankheizung Z.Nr. 996.51.01
   - 08 Schema Brennstoffreinigung Z.Nr. 996.41.14

3.8
10

Remarks:

1. Symbols and general remarks see drw. - N° 996.41.21
2. measuring points (characters ⊖ a. ◯) see list of measuring points drw. N° 800.62.35
3. techn. data of maschines a. devices see drw. N° 996.41.02
4. materials: pipe
   fittings an tanks: cast steel / stainless steel
   modular cast iron / stainless steel or
   in lines: cast iron laminar / stainless steel
   melleable cast iron / stainless steel
5. drawing of connection:
   - 06 diagramm of fuel service lines drw. N° 996.41.12
   - 22 diagramm of vent, sounding and overflow pipes drw. N° 996.51.25 26
   - 24 diagramm of tank heating drw. N° 996.51.01
   - 08 diagramm of fuel cleaning drw. N° 996.41.14

Betriebsdruck ≙ Berechnungsdruck

System	Kennzeichnung marking lines	Betriebsdruck bar working pressure	Prüfdruck in der Werkstatt bar hydr. test pressure in workshop	Prüfdruck an Bord bar hydr. test pressure on board vessel
HFO - Übernahmeleitung HFO - bunkering line	———	6	9	9
HFO - Umförderleitung HFO - transfer line	———	3,5	—	5,5
MDO - Übernahmeleitungen MDO - bunkering lines	– – – –	6	9	9
MDO - Umförderleitung MDO - transfer line	– – – –	3,5	—	5,5
Leckölleitungen Leakage oil lines	——·——	0	—	—

Pos. Qty.	Stck. item	Benennung designation	Bemerkung remarks
402	1	MDO - und Reserve HFO-Förderpumpe MDO - and stand by HFO - delivery pump	10 m³/h 3 bar
401	1	HFO - Förderpumpe HFO - delivery pump	10 m³/h 3 bar

	A.B.	Abteilg.	Tag	Name
Bearb.			1991	
Entw.			10.10	
Gez.			10.10	
Gepr.			10.10	
Gepr.				
Gen.			13.3.	

COT 10/12,5

121-126

MTW GmbH Wismar

Benennung: Schema Brennstoffübernahmesystem
Diagram of fuel bunkering

Maßstab

Zeichng. Nr. 996.41.13

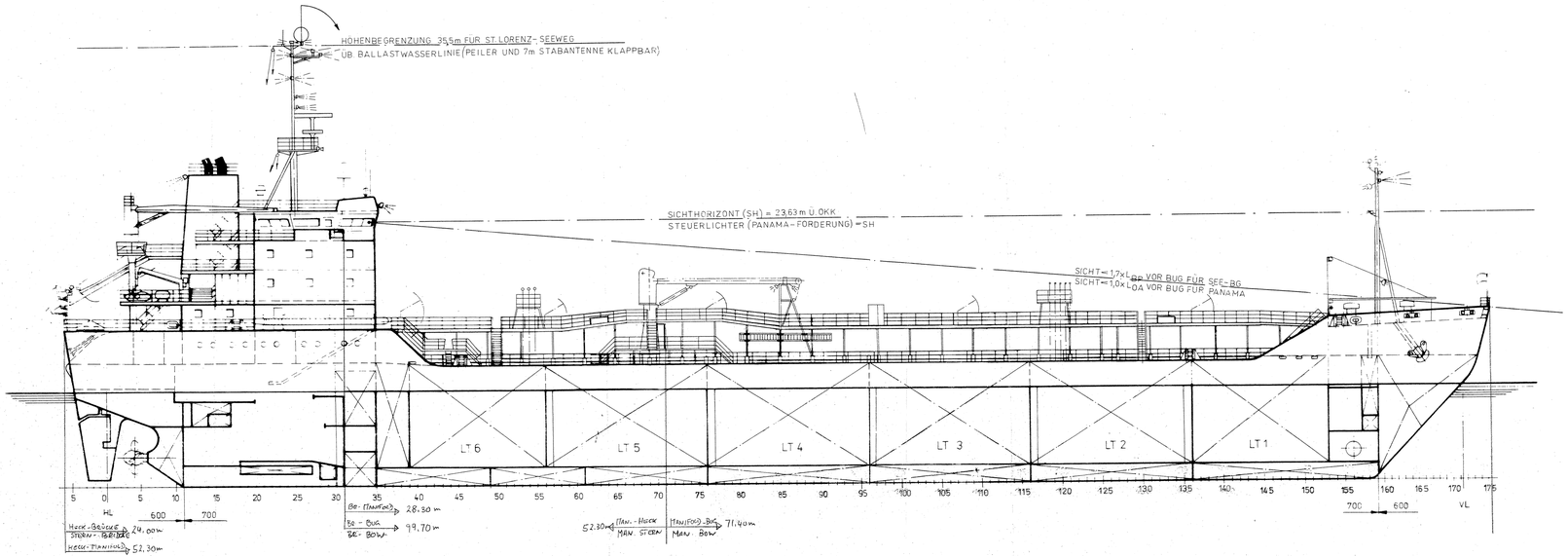
Abt. THM-12
Tel. 444

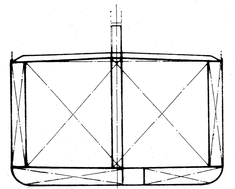
Hierzu Bl.

Liste Bl. 2

Bl. Nr.

Lichtpause 0,35 mm²





HAUPTDATEN / MAIN PARTICULARS

- LÄNGE ÜBER ALLES LENGHT OVERALL	ca. 124,00 m abt.
- LÄNGE ZWISCHEN DEN LOTEN LENGHT BETWEEN PERPENDICULARS	117,60 m
- BREITE AUF SPANTEN MOULDED BREADTH	17,70 m
- SEITENHÖHE OBERDECK ÜBER BASIS DEPTH TO UPPER DECK ABOVE BASE LINE	10,60 m
- TIEFGANG ENTWURF DRAUGHT DESIGNED	8,36 m
- FREIBORDTIEFGANG (SOMMER OKK) SUMMER FREEBOARD DRAUGHT REF. TO BL.	8,36 m
- TRAGFÄHIGKEIT BEI FREIBORDTIEFGANG DEADWEIGHT AT FREEBOARD DRAUGHT	ca. 10500 tdw abt.
- LADETANKS / NETTOKAPAZITÄT CARGO OIL TANKS / NET LOADING CAPACITY	ca. 10810 m^3 abt.
- HAUPTMASCHINENLEISTUNG MAIN ENGINE OUTPUT	ca. 3700 kW, 210 min^{-1} abt.
- GESCHWINDIGKEIT SERVICE SPEED	12,5 kn
- BESATZUNG CREW	16 PERSONEN PERSONS
- EIGNER OWNER	2 PERSONEN PERSONS
- LOTSE PILOT	1 PERSON

1
2

Änd.	Änderungs-Bericht/Mitteil./Anl.-Nr.	Tag	Name

AUFTRAGS-NR 123-126 — CHEMICAL OIL TANKER — TYP: COT 125

Werkstoff | Masse kg

	Tag	Name
1992		
Bearb.		
Gepr.	29.09	
Stand-der Technik		
Genehm.		

Benennung: GENERALPLAN SEITENANSICHT / GENERAL ARRANGEMENT PLAN SIDE VIEW

Maßstab 1:200

Lichtpause

MTW-Schiffswerft GmbH Wismar

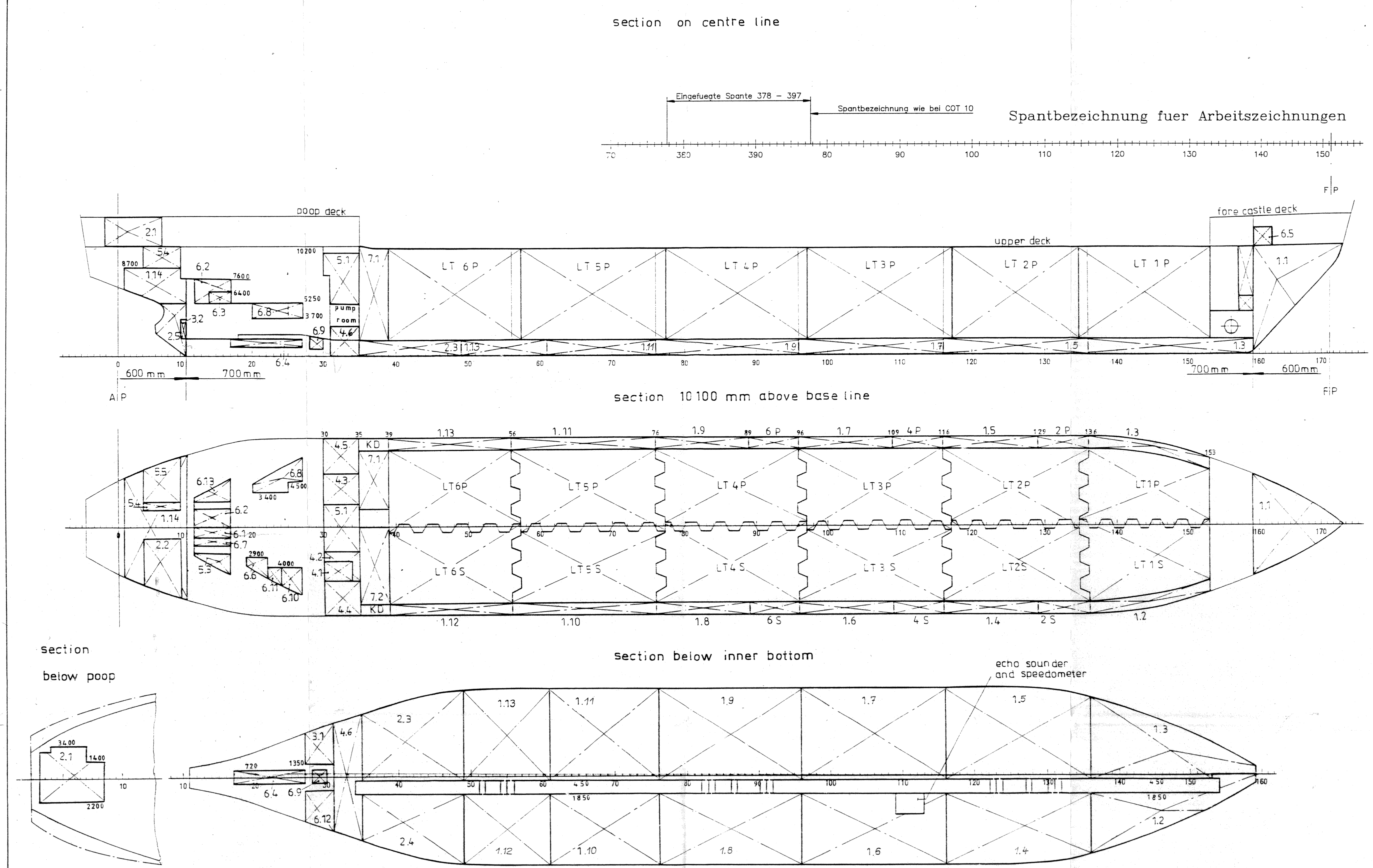
Abt. KA-1 | Tel.-Nr. 2607

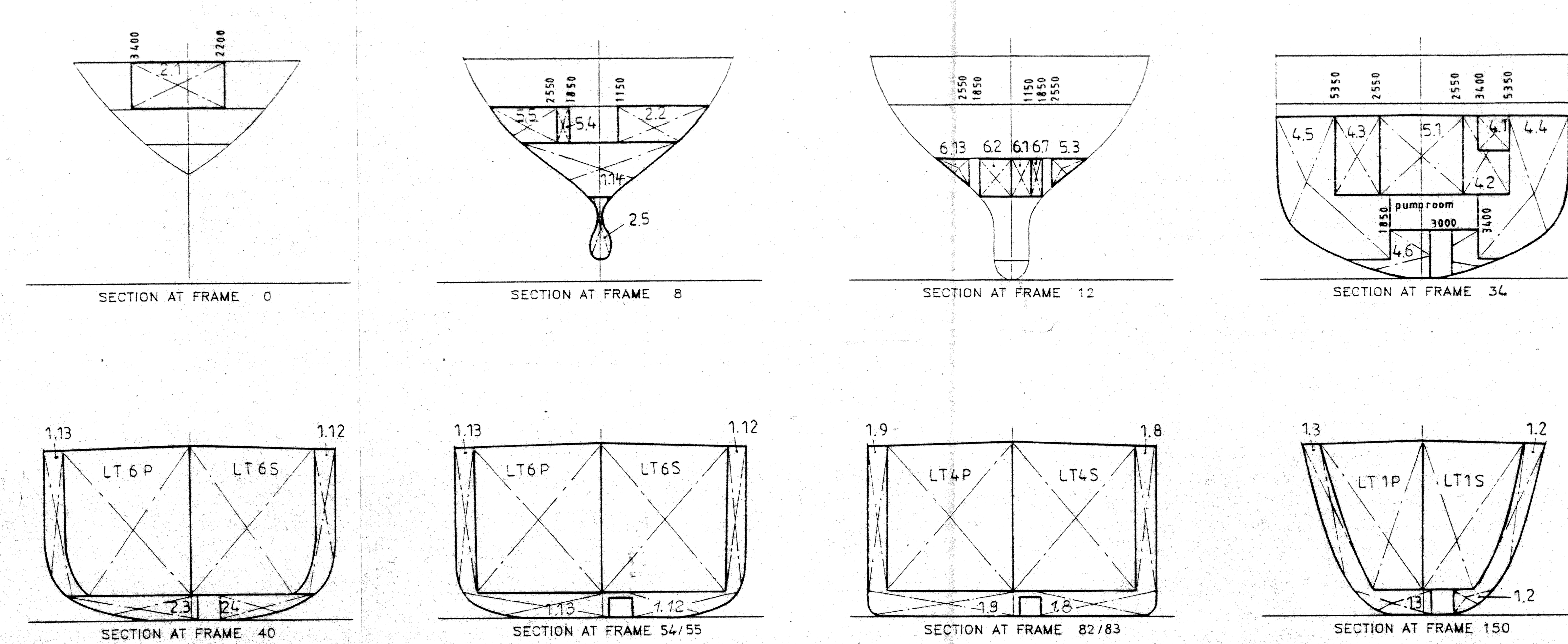
Zeichnungs-Nr. 996.31.01

Blatt | -Liste | Bl.-Zahl | Bl.-Nr.

Ersatz für: | Ersatz durch:

0.61 m²





Tankprüfung:
- Alle LT für jedes Schiff mit Wasserdruck entsprechend Tabelle.
- Alle Ballasttanks mit Luftdruck 0, 2 bar. Nach Fertigstellung Prüfung mittels Überlauf durch Wasser.
- Alle Betriebstanks mit Luftdruck 0, 2 bar. Endprüfung durch Befüllen mit Medium während der Bebunkerung des Schiffes.

tank test:
- With water pressure corresponding to the table for all cargo tanks for each ship.
- With 0. 2 bar compressed air for all ballast water tanks. After completion tank test by means of overflow with water.
- With 0. 2 bar compressed air for all service tanks. During bunkering of the ship the final tank test will be done tank filling with medium.

TANK NO.	DESIGNATION	MEDIUM	POSITION	RANGE OF FRAME	GROSS VOLUME M^3	NET VOLUME M^3	CENTRE OF GRAVITY ABOVE BASE LINE M	LONGITUDINAL CENTRE OF GRAVITY M	TANK TEST: OVERFLOW ABOVE TANK TOP (MM)	TANK TEST: W=WATER LEVEL ABOVE TANK TOP (MM)
LT1P/LT1S	CARGO OIL TANK 1P/1S	CHEMICAL OIL	PORT/STBD	136 - 153	698 / 698	693 / 693	6.42	99.2	——	W 3875
LT2P/LT2S	CARGO OIL TANK 2P/2S	CHEMICAL OIL	PORT/STBD	116 - 136	921 / 921	914 / 914	6.18	87.1	——	W 3875
LT3P/LT3S	CARGO OIL TANK 3P/3S	CHEMICAL OIL	PORT/STBD	96 - 116	988 / 988	980 / 980	6.17	73.6	——	W 3875
LT4P/LT4S	CARGO OIL TANK 4P/4S	CHEMICAL OIL	PORT/STBD	76 - 96	988 / 988	980 / 980	6.17	59.6	——	W 3875
LT5P/LT5S	CARGO OIL TANK 5P/5S	CHEMICAL OIL	PORT/STBD	56 - 76	988 / 988	980 / 980	6.17	45.6	——	W 3875
LT6P/LT6S	CARGO OIL TANK 6P/6S	CHEMICAL OIL	PORT/STBD	39 - 56	867 / 867	860 / 860	6.19	32.4	——	W 3875
1.1	FOREPEAK	BALLAST WATER	CENTRE LINE	159 - 174	193	184	8.08	112.6	3500	W 3500
1.2	BALLAST WATER TANK	BALLAST WATER	STBD	136 - 159	197	193	4.51	99.9	2500	W 2500
1.3	BALLAST WATER TANK	BALLAST WATER	PORT	136 - 159	240	235	3.84	100.0	2500	W 2500
1.4	BALLAST WATER TANK	BALLAST WATER	STBD	116 - 136	241	236	2.98	85.9	2500	W 2500
1.5	BALLAST WATER TANK	BALLAST WATER	PORT	116 - 136	289	284	2.61	86.1	2500	W 2500
1.6	BALLAST WATER TANK	BALLAST WATER	STBD	96 - 116	242	237	2.97	72.0	2500	W 2500
1.7	BALLAST WATER TANK	BALLAST WATER	PORT	96 - 116	299	293	2.55	72.3	2500	W 2500
1.8	BALLAST WATER TANK	BALLAST WATER	STBD	76 - 96	251	246	2.89	58.1	2500	W 2500
1.9	BALLAST WATER TANK	BALLAST WATER	PORT	76 - 96	299	293	2.55	58.3	2500	W 2500
1.10	BALLAST WATER TANK	BALLAST WATER	STBD	56 - 76	265	260	3.84	45.9	2500	W 2500
1.11	BALLAST WATER TANK	BALLAST WATER	PORT	56 - 76	301	295	3.47	46.0	2500	W 2500
1.12	BALLAST WATER TANK	BALLAST WATER	STBD	39 - 61	219	214	3.94	34.3	2500	W 2500
1.13	BALLAST WATER TANK	BALLAST WATER	PORT	39 - 61	248	243	3.57	34.7	2500	W 2500
1.14	BALLAST WATER TANK	BALLAST WATER	CENTRE LINE	1 - 11	85	82	7.44	4.1	5650	W 5650
2.1	DRINKING WATER TANK	DRINKING WATER	CENTRE LINE	-4 - 7	95.7	93.8	12.37	0.7	500	W 2500
2.2	CONDENSATE TANK	FRESH WATER	STBD	4 - 10	34.5	33.8	9.88	4.3	3500	W 3500
2.3	TECHNICAL FRESH WATER TANK	TECHNICAL FRESH WATER	PORT	35 - 49	105.3	103.2	0.85	28.8	10220	W 10220
2.4	TECHNICAL FRESH WATER TANK	TECHNICAL FRESH WATER	STBD	35 - 49	71.7	70.3	0.90	29.0	10220	W 10220
2.5	AFTERPEAK	TECHNICAL FRESH WATER	CENTRE LINE	6 - 11	12.2	12.0	3.07	5.6	9150	W 9150
3.1	COOLING WATER TANK	COOLING WATER	PORT	27 - 31	5.5	5.4	1.18	18.9	12335	W 12335
3.2	COOLING WATER TANK	COOLING WATER	CENTRE LINE	10 - 11	1.5	1.5	2.90	6.3	10700	W 10700
4.1	H.F.O. DAILY SUPPLY TANK	HEAVY FUEL OIL	STBD	30 - 34	12.0	11.8	9.10	21.3	500	W 2500
4.2	H.F.O. SETTLING TANK	HEAVY FUEL OIL	STBD	30 - 35	31.1	30.5	7.38	22.0	-50	W 2500
4.3	H.F.O. SETTLING TANK	HEAVY FUEL OIL	PORT	30 - 35	48.5	47.5	7.73	21.7	-50	W 2500
4.4	H.F.O. STORAGE TANK	HEAVY FUEL OIL	STBD	30 - 35	110.3	108.1	5.86	21.7	-50	W 2500
4.5	H.F.O. STORAGE TANK	HEAVY FUEL OIL	PORT	30 - 35	130.4	128.0	5.47	21.7	-50	W 2500
4.6	H.F.O. OVERFLOW TANK	HEAVY FUEL OIL	CENTRE LINE	31 - 35	51.4	50.4	1.46	22.0	11400	W 11400
5.1	M.D.O. STORAGE TANK	MARINE DIESEL FUEL OIL	CENTRE LINE	30 - 35	78.5	77.0	7.86	21.8	-50	W 2500
5.3	M.D.O. STORAGE TANK	MARINE DIESEL FUEL OIL	STBD	12 - 17	16.8	16.5	6.66	9.[illegible]	1000	W 2500
5.4	M.D.O. DAILY SUPPLY TANK	MARINE DIESEL FUEL OIL	PORT	4 - 10	5.5	5.4	9.80	4.2	1000	W 2500
5.5	M.D.O. SETTLING TANK	MARINE DIESEL FUEL OIL	PORT	4 - 10	23.4	22.9	9.92	4.4	-50	W 2500
6.1	CYLINDER OIL TANK	CYLINDER OIL	STBD	12 - 17	9.5	9.3	6.43	9.1	2800	W 2800
6.2	LUBRICATING OIL TANK	LUBE OIL	PORT	12 - 17	12.4	12.2	6.60	8.9	2800	W 2800
6.3	LUBR. O.T. AUX.ENG.DIESEL	LUBE OIL	PORT	14 - 17	2.8	2.7	5.83	9.8	4000	W 4000
6.4	LUBRICATING OIL CIRCUL. TANK	LUBE OIL	CENTRE LINE	18 - 27	6.6	6.5	1.36	14.3	9230	W 10000
6.5	HYDRAULIC OIL DRAIN TANK	HYDRAULIC OIL	CENTRE LINE	159 -162	4.5	4.4	11.50	111.1	2500	W 2500
6.6	USED OIL TANK	USED OIL	STBD	19 - 22	6.3	6.2	4.59	13.4	9150	W 9150
6.7	SEPARATED OIL TANK	LUBE OIL	STBD	12 - 17	5.8	5.6	6.43	9.1	2800	W 2800
6.8	SLUDGE OIL TANK	OIL RESIDUE	PORT	20 - 27	16.7	16.3	4.56	15.6	9150	W 9150
6.9	LEAKAGE OIL TANK	LEAKING OIL	CENTRE LINE	28 - 30	1.9	1.9	1.18	19.2	12630	W 12630
6.10	THERMICAL OIL TANK	THERMICAL OIL	STBD	24 - 27	8.4	8.3	4.55	16.8	9150	W 9150
6.11	THERMICAL OIL TANK	THERMICAL OIL	STBD	22 - 24	3.8	3.7	4.59	15.1	9150	W 9150
6.12	BILGE WATER TANK	BILGE WATER	STBD	27 - 31	8.1	7.9	1.22	19.2	12335	W 12335
6.13	BILGE WATER SETTLING TANK	BILGE WATER	PORT	12 - 17	16.8	16.5	6.66	9.3	6800	W 6800
7.1	SLOP TANK	WATER/OIL RESIDUE	PORT	35 - 39	140	137	6.49	24.8	——	W 2500
7.2	SLOP TANK	WATER/OIL RESIDUE	STBD	35 - 39	189	185	6.42	24.8	——	W 2500
2P / 2S	EMPTY COMPARTMENT	——	PORT /STBD	129 -136	53 / 53	52 / 52	6.14	91.7	——	W 2500
4P / 4S	EMPTY COMPARTMENT	——	PORT /STBD	109 -116	53 / 53	52 / 52	6.14	77.7	——	W 2500
6P / 6S	EMPTY COMPARTMENT	——	PORT /STBD	89 - 96	53 / 53	52 / 52	6.14	63.7	——	W 2500

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TKM1 (Plagem.)
TKM5/2 (Hahn)
FAL(TA)
TKA (Reinh.)
TKA (Puhar) abgestimmt
TKM2x TPS1 August 29.4.92
TWS4 FLV2-3x FLV1, FAL-(TR)(TM)
FAL, FLV, TPP, LOS (Hichtner)
(W) (3x) 2A-H70 2A6-70 2A1-7x

Ä-B.	Ä-Mittlg.Nr.	Tag	Name
b	151	26.5.92	Hilse
a	120	22.5.92	

Auftr. Nr. 123 - 126
Schiff: COT 12,5
Benennung: **tank plan**
Maßstab: 1:200
Z.-Nr.: 100.25.01 b
MTW Schiffswerft GmbH Wismar
Abt. TFB-3
Tel. 385

The Society of Maritime Arbitrators, Inc.

U.S. OPEN FORM SALVAGE AGREEMENT

Codename -- MARSALV®

This **SALVAGE AGREEMENT** ("The Agreement"), between _____, Master and/or Owner and/or Underwriter of the vessel _____ ("The Vessel") and _____("The Salvor"), is for salvage services rendered or to be rendered to the Vessel, her cargo and other property currently lying at or near _____, under the following terms and conditions:

FIRST: The Salvor shall use his best endeavors to salve the Vessel, her cargo and other property and deliver same safely afloat, hauled or drydocked at or near _____, at which place and time the Salvor's services will terminate unless otherwise mutually agreed.

SECOND: The Master and crew of the Vessel agree to lend their aid and assistance to the Salvor, who shall be entitled, free of expense, to the reasonable use of the Vessel's equipment.

THIRD: The Salvor's services are to be performed on the following basis (check and initial):

☐ **No Cure-No Pay** (Compensation to be conditioned upon successful salvage of the Vessel and/or her cargo and/or other property. In such case, the Salvor's compensation shall be pursuant to the criteria and other provisions of Article 13 of the 1989 International Convention on Salvage shown on the reverse of this Agreement).

☐ **No Cure-No Pay, Fixed Fee $_____**

☐ **Per Diem/Hourly at $_____ per day/hour pro rata**

☐ **Other** _____

_____

FOURTH: Notwithstanding the election(s) made in Paragraph THIRD, the Salvor shall in any event be entitled to compensation for actions he takes to prevent or minimize damage to the environment, pursuant to Articles 13 and 14 of the 1989 International Convention on Salvage shown on the reverse of this Agreement.

FIFTH: The Salvor shall have a lien upon the Vessel, her cargo and other property for services rendered pursuant to Paragraphs THIRD and FOURTH, and his statement for services rendered shall be submitted as promptly as possible after completion or termination of such services. In lieu of arrest or attachment of the Vessel the Salvor may demand reasonable security for such services from the Vessel and cargo interests as a condition for releasing same.

SIXTH: This Agreement shall be governed by and construed in accordance with the Federal Maritime Law of the United States. Any dispute arising out of this Agreement shall be referred to arbitration in the United States in accordance with the applicable Arbitration Rules of the Society of Maritime Arbitrators, Inc. The Arbitrator(s) shall be familiar with maritime salvage. Any award made hereunder may include interest, attorney's fees and costs, and shall be final and binding. For the purpose of enforcement the Award may be entered for judgment in any court of competent jurisdiction.

Dated this ____ day of _____, 20___

For: **SALVOR**	For: **VESSEL, CARGO and/or PROPERTY**
_____	_____
(authorized signature)	(authorized signature)
_____	_____
(print name and title)	(print name and title)

White: Salvor; Yellow: Master/Owner; Pink: Underwriter

INTERNATIONAL CONVENTION ON SALVAGE, 1989

Article 13

Criteria for Fixing the Reward

1. The reward shall be fixed with a view to encouraging salvage operations, taking into account the following criteria without regard to the order in which they are presented below:

(a) the salved value of the vessel and other property;
(b) the skill and efforts of the salvors in preventing or minimizing damage to the environment;
(c) the measure of success obtained by the salvor;
(d) the nature and degree of the danger
(e) the skill and efforts of the salvors in salving the vessel, other property and life;
(f) the time used and expenses and losses incurred by the salvors;
(g) the risk of liability and other risks run by the salvors or their equipment;
(h) the promptness of the services rendered;
(i) the availability and use of vessels or other equipment intended for salvage operations;
(j) the state of readiness and efficiency of the salvor's equipment and the value thereof.

2. Payment of a reward fixed according to paragraph 1 shall be made by all of the vessel and other property interests in proportion to their respective salved values. However, a State Party may in its national law provide that the payment of a reward has to be made by one of these interests, subject to a right of recourse of this interest against the other interests for their respective shares. Nothing in this article shall prevent any right of defence.

3. The rewards, exclusive of any interest and recoverable legal costs that may be payable thereon, shall not exceed the salved value of the vessel and other property.

Article 14

Special Compensation

1. If the salvor has carried out salvage operations in respect of a vessel which by itself or its cargo threatened damage to the environment and has failed to earn a reward under article 13 at least equivalent to the special compensation assessable in accordance with this article, he shall be entitled to special compensation from the owner of that vessel equivalent to his expenses as herein defined.

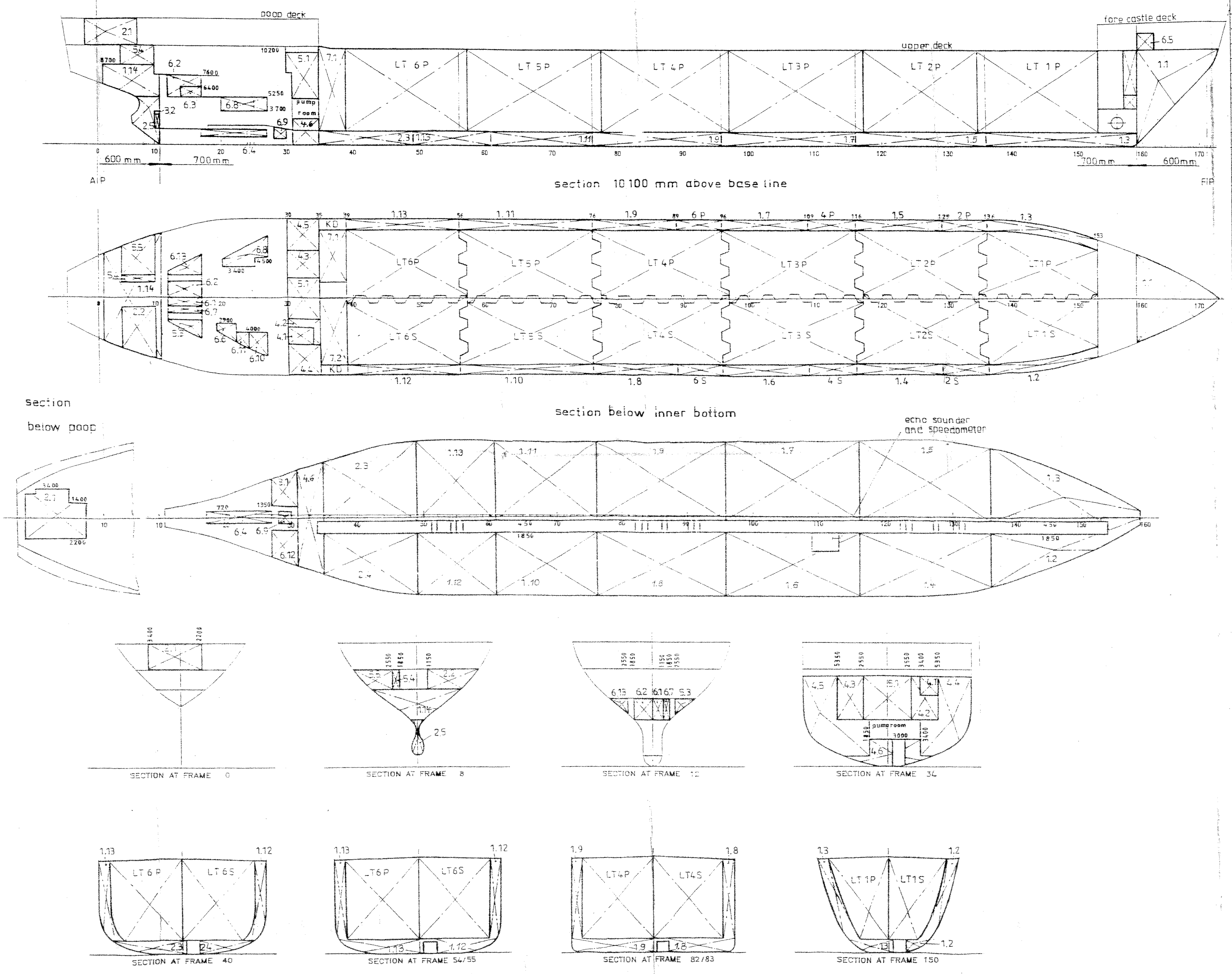
2. If, in the circumstances set out in paragraph 1, the salvor by his salvage operations has prevented or minimized damage to the environment, the special compensation payable by the owner to the salvor under paragraph 1 may be increased up to a maximum of 30% of the expenses incurred by the salvor. However, the tribunal, if it deems it fair and just to do so and bearing in mind the relevant criteria set out in article 13, paragraph 1, may increase such special compensation further, but in no event shall the total increase be more than 100% of the expenses incurred by the salvor.

3. Salvor's expenses for the purpose of paragraphs 1 and 2 means the out-of-pocket expenses reasonably incurred by the salvor in the salvage operation and a fair rate for equipment and personnel actually and reasonably used in the salvage operation, taking into consideration the criteria set out in article 13, paragraph 1(h), (i) and (j).

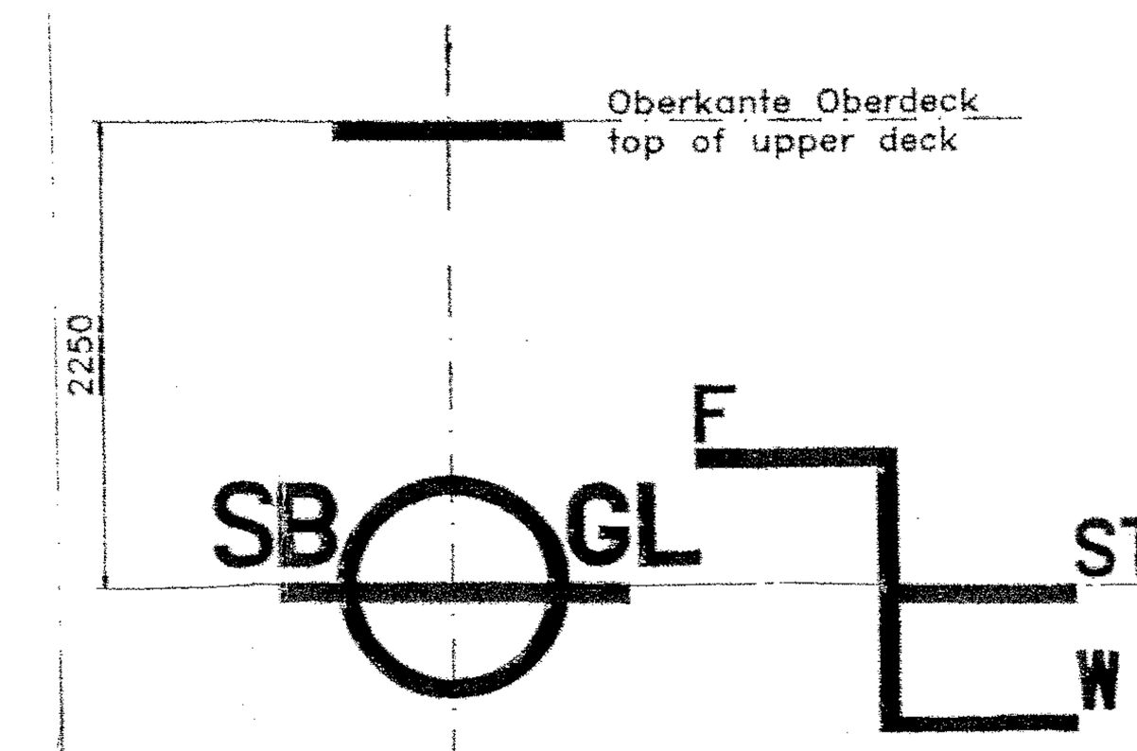
4. The total special compensation under this article shall be paid only if and to the extent that such compensation is greater than any reward recoverable by the salvor under article 13.

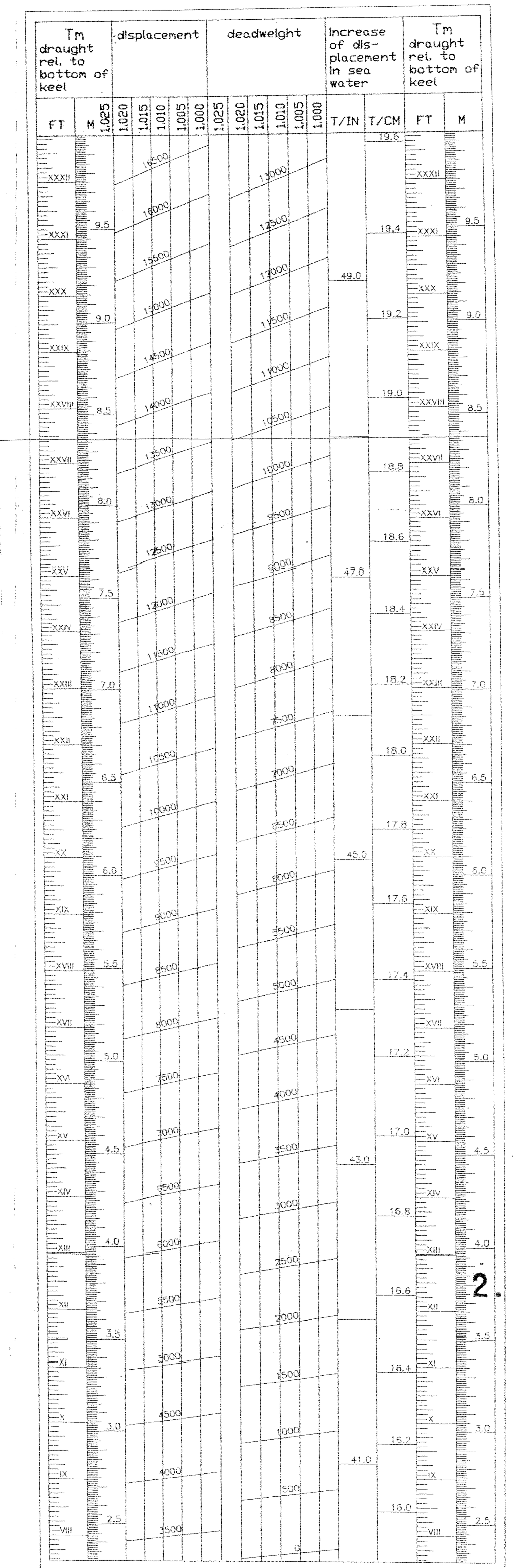
5. If the salvor has been negligent and has thereby failed to prevent or minimize damage to the environment, he may be deprived of the whole or part of any special compensation due under this article.

6. Nothing in this article shall affect any right of recourse on the part of the owner of the vessel.



TANK NO.	DESIGNATION	MEDIUM	POSITION	RANGE OF FRAME	GROSS VOLUME m^3	NET VOLUME m^3	CENTRE OF GRAVITY ABOVE BASE LINE M	LONGITUDINAL CENTRE OF GRAVITY M
LT1P/LT1S	CARGO OIL TANK 1P/1S	CHEMICAL OIL	PORT/STBD	136 - 153	698 / 698	693 / 693	6.42	99.2
LT2P/LT2S	CARGO OIL TANK 2P/2S	CHEMICAL OIL	PORT/STBD	116 - 136	921 / 921	914 / 914	6.18	87.1
LT3P/LT3S	CARGO OIL TANK 3P/3S	CHEMICAL OIL	PORT/STBD	96 - 116	988 / 988	980 / 980	6.17	73.6
LT4P/LT4S	CARGO OIL TANK 4P/4S	CHEMICAL OIL	PORT/STBD	76 - 96	988 / 988	980 / 980	6.17	59.6
LT5P/LT5S	CARGO OIL TANK 5P/5S	CHEMICAL OIL	PORT/STBD	56 - 76	988 / 988	980 / 980	6.17	45.6
LT6P/LT6S	CARGO OIL TANK 6P/6S	CHEMICAL OIL	PORT/STBD	39 - 56	867 / 867	860 / 860	6.19	32.4
1.1	FOREPEAK	BALLAST WATER	CENTRE LINE	159 - 174	193	184	8.08	112.6
1.2	BALLAST WATER TANK	BALLAST WATER	STBD	136 - 159	197	193	4.51	99.9
1.3	BALLAST WATER TANK	BALLAST WATER	PORT	136 - 159	240	235	3.84	100.0
1.4	BALLAST WATER TANK	BALLAST WATER	STBD	116 - 136	241	236	2.98	85.9
1.5	BALLAST WATER TANK	BALLAST WATER	PORT	116 - 136	289	284	2.61	86.1
1.6	BALLAST WATER TANK	BALLAST WATER	STBD	96 - 116	242	237	2.97	72.0
1.7	BALLAST WATER TANK	BALLAST WATER	PORT	96 - 116	299	293	2.55	72.3
1.8	BALLAST WATER TANK	BALLAST WATER	STBD	76 - 96	251	246	2.89	58.1
1.9	BALLAST WATER TANK	BALLAST WATER	PORT	76 - 96	299	293	2.55	58.3
1.10	BALLAST WATER TANK	BALLAST WATER	STBD	56 - 76	265	260	3.84	45.9
1.11	BALLAST WATER TANK	BALLAST WATER	PORT	56 - 76	301	295	3.47	46.0
1.12	BALLAST WATER TANK	BALLAST WATER	STBD	39 - 61	219	214	3.94	34.3
1.13	BALLAST WATER TANK	BALLAST WATER	PORT	39 - 61	248	243	3.57	34.7
1.14	BALLAST WATER TANK	BALLAST WATER	CENTRE LINE	1 - 11	85	82	7.44	4.1
2.1	DRINKING WATER TANK	DRINKING WATER	CENTRE LINE	-4 - 7	95.7	93.8	12.37	[illegible]
2.2	CONDENSATE TANK	FRESH WATER	STBD	4 - 10	34.5	33.8	9.88	[illegible]
2.3	TECHNICAL FRESH WATER TANK	TECHNICAL FRESH WATER	PORT	35 - 49	105.3	103.2	0.85	28.8
2.4	TECHNICAL FRESH WATER TANK	TECHNICAL FRESH WATER	STBD	35 - 49	71.7	70.3	0.90	29.0
2.5	AFTERPEAK	TECHNICAL FRESH WATER	CENTRE LINE	6 - 11	12.2	12.0	3.07	5.6
3.1	COOLING WATER TANK	COOLING WATER	PORT	27 - 31	5.5	5.4	1.18	18.9
3.2	COOLING WATER TANK	COOLING WATER	CENTRE LINE	10 - 11	1.5	1.5	2.90	6.3
4.1	H.F.O. DAILY SUPPLY TANK	HEAVY FUEL OIL	STBD	30 - 34	12.0	11.8	9.10	21.3
4.2	H.F.O. SETTLING TANK	HEAVY FUEL OIL	STBD	30 - 35	31.1	30.5	7.38	22.0
4.3	H.F.O. SETTLING TANK	HEAVY FUEL OIL	PORT	30 - 35	48.5	47.5	7.73	21.7
4.4	H.F.O. STORAGE TANK	HEAVY FUEL OIL	STBD	30 - 35	110.3	108.1	5.86	21.7
4.5	H.F.O. STORAGE TANK	HEAVY FUEL OIL	PORT	30 - 35	130.4	128.0	5.47	21.7
4.6	H.F.O. OVERFLOW TANK	HEAVY FUEL OIL	CENTRE LINE	31 - 35	51.4	50.4	1.46	22.0
5.1	M.D.O. STORAGE TANK	MARINE DIESEL FUEL OIL	CENTRE LINE	30 - 35	78.5	77.0	7.86	21.8
5.3	M.D.O. STORAGE TANK	MARINE DIESEL FUEL OIL	STBD	12 - 17	16.8	16.5	6.66	9.3
5.4	M.D.O. DAILY SUPPLY TANK	MARINE DIESEL FUEL OIL	PORT	4 - 10	5.5	5.4	9.80	4.2
5.5	M.D.O. SETTLING TANK	MARINE DIESEL FUEL OIL	PORT	4 - 10	23.4	22.9	9.92	4.4
6.1	CYLINDER OIL TANK	CYLINDER OIL	STBD	12 - 17	9.5	9.3	6.43	9.1
6.2	LUBRICATING OIL TANK	LUBE OIL	PORT	12 - 17	12.4	12.2	6.60	8.9
6.3	LUBR. O.T. AUX.ENG.DIESEL	LUBE OIL	PORT	14 - 17	2.8	2.7	5.83	9.8
6.4	LUBRICATING OIL CIRCUL. TANK	LUBE OIL	CENTRE LINE	18 - 27	6.6	6.5	1.36	14.3
6.5	HYDRAULIC OIL DRAIN TANK	HYDRAULIC OIL	CENTRE LINE	159 -162	4.5	4.4	11.50	111.1
6.6	USED OIL TANK	USED OIL	STBD	19 - 22	6.3	6.2	4.59	13.4
6.7	SEPARATED OIL TANK	LUBE OIL	STBD	12 - 17	5.8	5.6	6.43	9.1
6.8	SLUDGE OIL TANK	OIL RESIDUE	PORT	20 - 27	16.7	16.3	4.56	15.6
6.9	LEAKAGE OIL TANK	LEAKING OIL	CENTRE LINE	28 - 30	1.9	1.9	1.18	19.2
6.10	THERMICAL OIL TANK	THERMICAL OIL	STBD	24 - 27	8.4	8.3	4.55	16.8
6.11	THERMICAL OIL TANK	THERMICAL OIL	STBD	22 - 24	3.8	3.7	4.59	15.1
6.12	BILGE WATER TANK	BILGE WATER	STBD	27 - 31	8.1	7.9	1.22	19.2
6.13	BILGE WATER SETTLING TANK	BILGE WATER	PORT	12 - 17	16.8	16.5	6.66	9.3
7.1	SLOP TANK	WATER/OIL RESIDUE	PORT	35 - 39	140	137	6.49	24.8
7.2	SLOP TANK	WATER/OIL RESIDUE	STBD	35 - 39	189	185	6.42	24.8
2P / 2S	EMPTY COMPARTMENT	———	PORT /STBD	129 -136	53 / 53	52 / 52	6.14	91.7
4P / 4S	EMPTY COMPARTMENT	———	PORT /STBD	109 -116	53 / 53	52 / 52	6.14	77.7
6P / 6S	EMPTY COMPARTMENT	———	PORT /STBD	89 - 96	53 / 53	52 / 52	6.14	63.7





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Loading informations

To comply with the requirements of damage stability, vessel's cargo has depending on cargo's density, to be distributed as mentioned hereinafter:

Transportation of clean oil products and lightweight chemicals of category C:

–Cargo density from 0.63 t/m^3 to 0.932 t/m^3
The cargo has to be homogenly distributed over the central tanks port and starboard.

–Cargo density from 0.932 t/m^3 to 1.55 t/m^3
The cargo to be equally distributed to all central tanks.

To ensure damaged stability, ballast water in double bottom tanks is required (see damage stability).

In correspondence with the material list the dimensions of members of tank bulkheads are designed for :
–in case of central and slop tanks
density 1.31 to 1.55 t/m^3 ; pv = 0 bar (without gas pressure)
density 0.63 to 1.30 t/m^3 ; pv = 0.2 bar

In connection with this :
Transverse tank bulkheads areable to resist loading to on side and the centre longitudinal tank bulkhead to both sides only.

More cargo informations see "TRIM AND STABILITY CALCULATION" drawing No. 996.25.06 .

main engine

1 slow–speed two–stroke marine Diesel engine ,type 6 L 35 Mc ,
M A N B & W Alpha Diesel A/S ,3600 kW ,210 rpm

auxiliary Diesel engine set

3 marine sets ,type TBD 604 BV 8 ,
Rolf Janssen GmbH ,580 kW ,1200 rpm

emergency Diesel engine set

1 emergency diesel engine set ,type F 6 L 413 FR ,
Rolf Janssen GmbH ,95 kW ,1800 rpm

PTO

1 PTO ,type SPL 75 Inst 12 ,
The Newbrook engineering Co Ltd. ,515 kW

ballast pump

2 ballast pumps ,300 m^3/h ,3 bar

controlable pitch propeller

D=3,1 m z=4 m=4,6 t

bow thruster

fixed–pitch propeller with hydraulic propulsion ,410 kW

rudder and steering engine

1 semi–balanced underhung rudder area 16 m^2
1 elektr.–hydr.standard cylinder stearing engine max. moment 254 kNm

anchor gear

2 bow anchors 3,54 t stud link anchor chain: diam. 46 mm
length of chains :stb 275,0 m portside 247,5 m
1 stern anchor 1,29 t hawser: diam. 34 mm
length of hawsers: 150,0 m

rescue equipment

1 free fall lifeboat in tankers condition 19 persons with slip way
2 life rafts 20 persons each
1 accident boat 6 persons

nautical instruments

gyro compass ,Anschuetz–Kiel
magnetic compass ,Cassen and Plath
hand control and autopilot steering system ,Anschuetz–Kiel
echo sounder ,Furunow–Japan
log ,Ben–France
2 radar unit ,Racal Deccar
wireless direction finder ,Debeg–Hamburg
receiver for nautical notices "Navtex"
satellite navigator (GPS) ,deccar navigator

TONNAGE

	gross	net
international measurement 1969	6262	3154
panama	6501.79 RT	4782.68 RT
suez	6494.14 RT	5177.34 RT

CLASS

Germanischer Lloyd

✠ 100 A5 E3 Chemical Tanker Type 2/Oil Tanker

✠ MC AUT E3 INERT

M A I N P A R T I C U L A R S

length overall	123.72 m
length between perpendiculars	117.60 m
breadth moulded	17,70 m
summer freeboard draugth rel.to top of keel	8,36 m
depth moulded to main deck	10,60 m
displacement at draught Tm=8.36m (top of keel)	13863 t
deadweight T_m=8.36m (top of keel)	10511 t (trim=0m)
speed at draugth T_m=8.36m (top of keel)	12,5 knots
operating range 6000 nautical miles	

Auftrag–Nr.	123 – 126	Schiffsname	COT 12,5
Werkstoff	1991 Tag / Name; Entworfen 5.11. Heidbrock; Gezeichnet; Geprueft; Stand.techn. geprueft; Gesehen	Benennung	capacity plan
Masse kg	Tel.–Nr. 2352; Abt. TPB–3	Zeichnungs–Nr.	996.25.04
Ersatz fuer	Hierzu Blatt –Liste	Ersetzt durch:	Bl.–Zahl 1; Bl.–Nr. 1

Appendix 7
Spill Kit Inventory
M/T *Dara Desgagnés*

Item	Size	Min Quantity	Quantity Onboard	Location Onboard
Portable Pumps and hoses	Sets	2	4	1 Main Deck 1 Dog House 1 Pump Room 1 Spare
Absorbent pads	Bales	5	10	5 in chemical locker 5 distributed between spill kits and stbd rop locker
Absorbent – particulate	Bales	5	30+	Boat Deck Local spill kits
Hand scoops, buckets and shovels	Each	3	3+	
Waste container	55 gal drum	2	3	2 at aft end gangway 1 in chemical locker
Emulsifiers	1 gal	5	5	White box at crane
Tyvec coveralls	Various	12	30	Chemical locker Spill kit drum
Boots, oil resistant	Various	12 pairs	12+	7 in chemical locker drum 5+ in change room
Gloves, oil resistant	Various	12 pairs	12	Chemical locker drum
Rags	Lbs	20	100+	Stbd rope locker

RIGEL SHIPPING CANADA Inc.	SAFETY FORMS Oil Spill Response Equipment Inventory

Ref: SMPEP Section 5.1 ONBOARD RESPONSE CAPABILITIES

Vessel: **Dara Desgagnes** Date Posted: October 31 2012

Item	Size	Min Quantity	Quantity Onboard	Location Onboard
Portable Pumps and hoses	Sets	2	4	1 main deck, 1 dog house, 1 pump room, 1 spare
Absorbent pads	Bales	5	10	5 in chemical locker, 5 distributed between spill kits and stbd rope locker
Absorbent – particulate	Bales	5	30+	boat deck, local spill kits
Hand scoops, buckets and shovels	Each	3	3+	
Waste container	55 gal drum	2	3	2 at aft end gangway, 1 in chemical locker
Emulsifiers	1 gal	5	5	white box at crane
Tyvec coveralls	Various	12	30	chemical locker spill kit drum
Boots, oil resistant	Various	12 pr	12+	7 pair in chemical locker drum, 5+ in change room
Gloves, oil resistant	Various	12 pr	12	in chemical locker drum
Rags	Lbs	20	100+	stbd rope locker

Appendix 8

Foam and water extinguishing lines on cargo deck

- See drawing #996.51.35

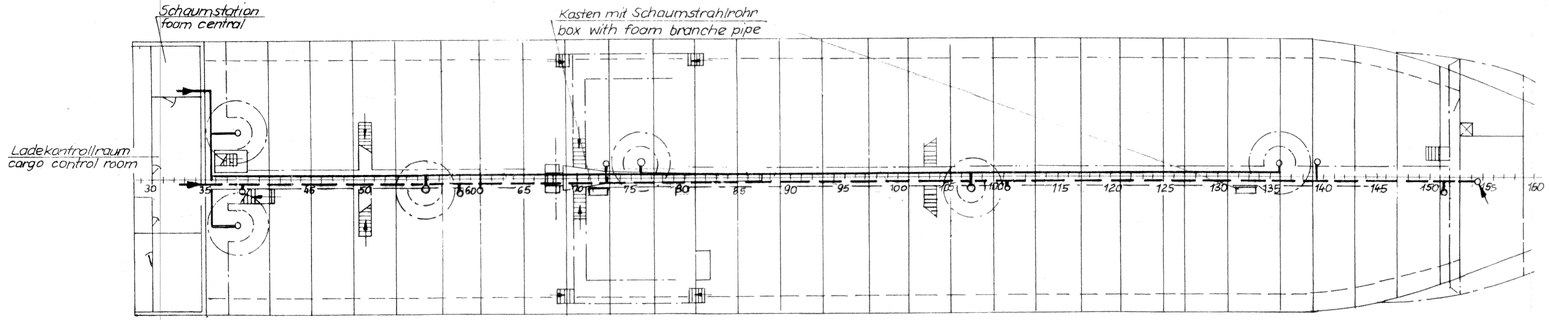
Procedures for Oil Spill Air Pump

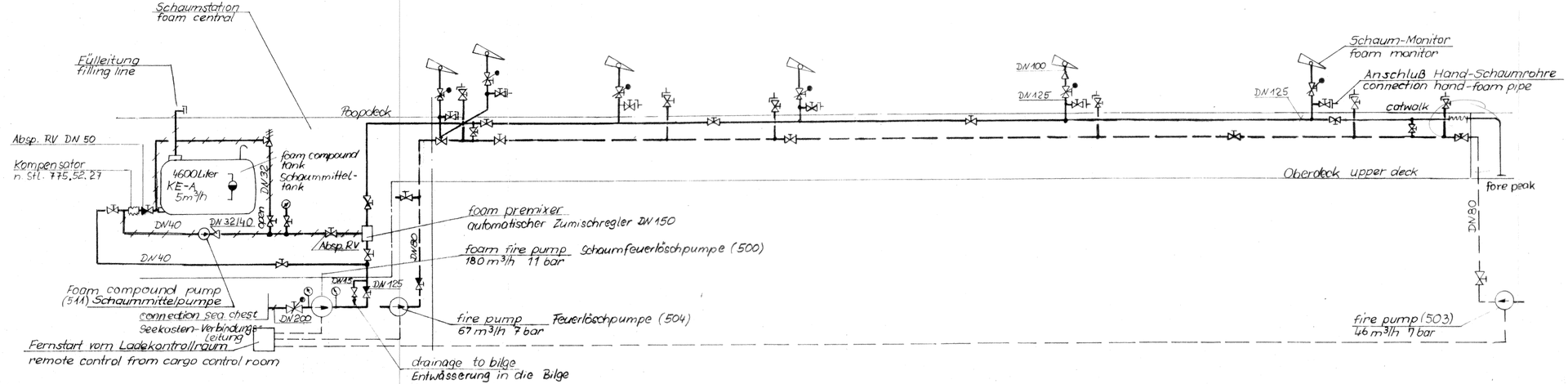
- Procedure to pump out Driptrays Manifolds:

    1. Connect suction hose from air driven 1" pump to connections A, B, C and D as desired.
    2. Connect discharge hose of air driven 1" pump to either the port dropline E or STBD dropline F on deck. This will usually be the Port dropline E.
    3. Open valves as needed and pump contents to the connected sloptank (E or F).
    4. Close valves and continue with other drip trays using above procedure.
    5. When completed drain/purge hoses to slop tank and disconnect.

- Procedure to pump liquid from the Deck:

    1. Connect suction hoses to Y-section of air driven 2" pump.
    2. Connect port side hose with valve G and STBD side hose with valve H to Y-section.
    3. Connect discharge hose of air driven 2" pump to either the Port dropline E or STBD dropline F on deck. This will usually be the Port dropline E.
    4. Open valves as needed and pump liquids to the connected sloptank (E or F).
    5. When finished pumping liquids drain/purge hoses and close valves and disconnect.





Änd. Buch	Änd. Mitteilg Nr.	Tag	Name

COT-12,5 123-126

	Tag	Name
1992		
Entw.	10.10.	B. Weber
Gez.	13.10.	Brückner
Gepr.	13.10.	Wölkert
St.-gep.		
Ges.	13.10.	i.A. Ma

Benennung: Prinzipschema Schaum-u. Wasserfeuerlösch Ladetank

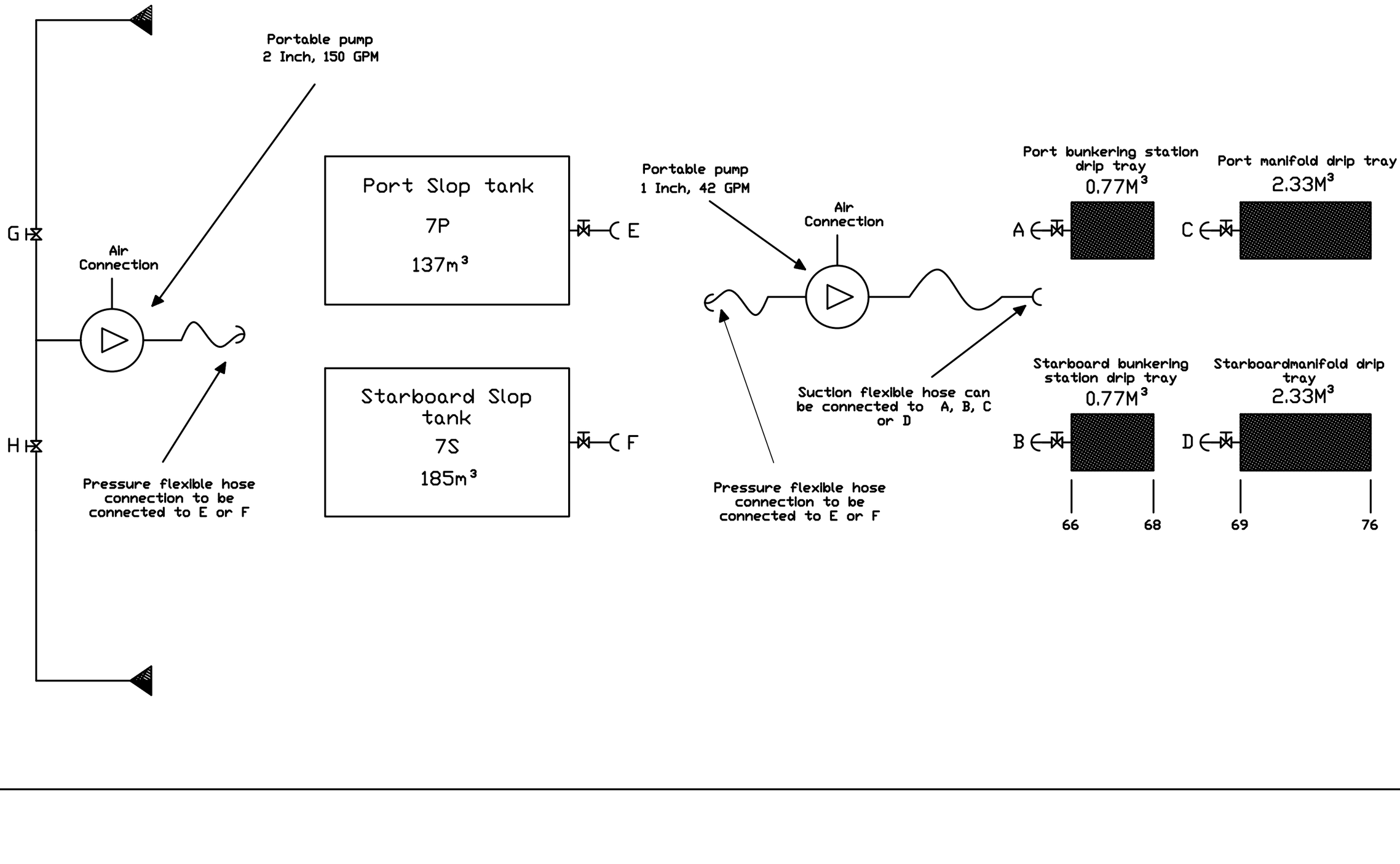
block diagram foam- and water-extinguishing cargo deck

MTW Schiffswerft GmbH

Abt. TKM-2

Tel. 2499

Zeichng.-Nr. 996.51.35


Portable pump
2 Inch, 150 GPM
G
Air
Connection
H
Pressure flexible hose
connection to be
connected to E or F
Port Slop tank
7P
137m³
E
Starboard Slop
tank
7S
185m³
F
Portable pump
1 Inch, 42 GPM
Air
Connection
Suction flexible hose can
be connected to A, B, C
or D
Pressure flexible hose
connection to be
connected to E or F
Port bunkering station
drip tray
0.77M³
A
Port manifold drip tray
2.33M³
C
Starboard bunkering
station drip tray
0.77M³
B
Starboardmanifold drip
tray
2.33M³
D
66
68
69
76

APPENDIX B - Transfer Conduit Annual Pressure Test

ONTARIO HOSE & COUPLINGS LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
6295 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Street Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
Tel: 905-670-0113 Fax: 905-670-4958	Tel: 519-336-8541 Fax: 519-336-8543	Tel: 905-662-0276 Fax: 905-662-0542	Tel: 613-549-7316 Fax: 613-549-8214	Tel: 514-685-1266 Fax: 514-685-1606	Tel: 902-465-5220 Fax: 902-465-5296

www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	SBQ	Size:	4"
Number:	PNV00034	Length:	400FT
Part Number:		HAWP (PSI):	200
Order:	Q51378	Temperature Range:	
PO:	11942	Rating:	4/5 ☆☆☆☆☆
Unit Number:	32019-07	This is in excellent condition and is ok to be in service	
Location:	Jana	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover
Cam Arm Damaged			

Repairs conducted by: sbq
Printed: Monday, June 18, 2018
To view as PDF click here

ONTARIO HOSE & COUPLINGS LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
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Tel: 905-670-0113 Fax: 905-670-4958	Tel: 519-336-8541 Fax: 519-336-8543	Tel: 905-662-0276 Fax: 905-662-0542	Tel: 613-549-7316 Fax: 613-549-8214	Tel: 514-685-1266 Fax: 514-685-1606	Tel: 902-465-5220 Fax: 902-465-5296

www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	SBQ	Size:	4"
Number:	PNV00055	Length:	400'
Part Number:		HAWP (PSI):	200
Order:	108223	Temperature Range:	
PO:	11939	Rating:	4/5 ☆☆☆☆☆
Unit Number:	26025-03	This is in excellent condition and is ok to be in service	
Location:	marla small	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover
Cam Arm Damaged			

Repairs conducted by: sbq
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HOSETRACKER

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Tel: 905-670-0113 Fax: 905-670-4958	Tel: 519-336-8541 Fax: 519-336-8543	Tel: 905-662-0276 Fax: 905-662-0542	Tel: 613-549-7316 Fax: 613-549-8214	Tel: 514-685-1266 Fax: 514-685-1606	Tel: 902-465-5220 Fax: 902-465-5296

www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(AL)MxF (Aluminum Male x Female Camlock)
Hose Type:	Goodyear	Size:	4"
Hose Number:	PNV00132	Length:	390'
Part Number:		HAWP (PSI):	200
Order:		Temperature Range:	
PO:	12995	Rating:	3/5 ☆☆☆☆☆
Unit Number:	2012	This Hose is acceptable for use in service	
Location:	Jana Small	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover
		Tube Leaked	

Repairs conducted by: sbq
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HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	floater hose	Size:	4
Number:	PNV00170	Length:	400'
Part Number:	GOODYEAR FITTINGS	HAWP (PSI):	200
Order:		Temperature Range:	
PO:	2014	Rating:	4/5 ☆☆☆☆☆
Unit Number:		This is in excellent condition and is ok to be in service	
Location:	marla	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover
			Damaged

Repairs conducted by: sbq
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Tel: 905-670-0113 Fax: 905-670-4958	Tel: 519-336-8541 Fax: 519-336-8543	Tel: 905-662-0276 Fax: 905-662-0542	Tel: 613-549-7316 Fax: 613-549-8214	Tel: 514-685-1266 Fax: 514-685-1606	Tel: 902-465-5220 Fax: 902-465-5296

www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	floater hose	Size:	4
Number:	PNV00171	Length:	400'
Part Number:	GOODYEAR FITTINGS	HAWP (PSI):	200
Order:		Temperature Range:	
PO:	2014	Rating:	4/5 ☆☆☆☆☆
Unit Number:		This is in excellent condition and is ok to be in service	
Location:	marla	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover
Cam Arm Damaged			

Repairs conducted by: sbq
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HOSETRACKER

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TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	floater hose	Size:	4
Number:	PNV00174	Length:	400'
Part Number:	GOODYEAR FITTINGS	HAWP (PSI):	200
Order:		Temperature Range:	
PO:		Rating:	4/5 ☆☆☆☆☆
Unit Number:	2014	This is in excellent condition and is ok to be in service	
Location:	Jana	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover
Cam Arm Damaged			

Repairs conducted by: sbq
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	floater hose	Size:	4
Number:	PNV00175	Length:	400'
Part Number:	GOODYEAR FITTINGS	HAWP (PSI):	200
Order:		Temperature Range:	
PO:		Rating:	4/5 ☆☆☆☆☆
Unit Number:	2014	This is in excellent condition and is ok to be in service	
Location:	Jana	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover
Cam Arm Damaged			

Repairs conducted by: sbq
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ONTARIO HOSE & COUPLINGS LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	floater hose	Size:	4
Number:	PNV00177	Length:	400'
Part Number:	GOODYEAR FITTINGS	HAWP (PSI):	200
Order:		Temperature Range:	
PO:		Rating:	4/5 ☆☆☆☆☆
Unit Number:	2014	This is in excellent condition and is ok to be in service	
Location:	Jana	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover

Repairs conducted by: sbq
Printed: Monday, June 18, 2018
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ONTARIO HOSE & COUPLINGS LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
6295 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Street Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	floater hose	Size:	4
Number:	PNV00177	Length:	400'
Part Number:	GOODYEAR FITTINGS	HAWP (PSI):	200
Order:		Temperature Range:	
PO:		Rating:	4/5 ☆☆☆☆☆
Unit Number:	2014	This is in excellent condition and is ok to be in service	
Location:	Jana	CRN:	N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover

Repairs conducted by: sbq
Printed: Monday, June 18, 2018
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ONTARIO HOSE & COUPLINGS LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
6295 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Street Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Type:	Goodyear	Size:	4"
Number:	PNV00226	Length:	220'
Part Number:		HAWP (PSI):	200
Order:		Temperature Range:	
PO:		Rating:	4/5 ☆☆☆☆☆
Unit Number:	Cut in half from # 212	This is in excellent condition and is ok to be in service	
Location:	Quebec		N/A
Colour:	Orange		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover

Repairs conducted by: sbq
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ONTARIO HOSE & COUPLINGS LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
6295 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Street Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
Tel: 905-670-0113 Fax: 905-670-4958	Tel: 519-336-8541 Fax: 519-336-8543	Tel: 905-662-0276 Fax: 905-662-0542	Tel: 613-549-7316 Fax: 613-549-8214	Tel: 514-685-1266 Fax: 514-685-1606	Tel: 902-465-5220 Fax: 902-465-5296

www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Hose Type:	Floater Hose	Size:	4"
Hose Number:	PNV00230	Length:	400'
Part Number:	Continental Floater Hose	HAWP (PSI):	200
Order:	1139497	Temperature Range:	
PO:	12560	Rating:	5/5 ☆☆☆☆☆
Unit Number:	2016	This is a brand new Hose and is OK to be in service	
Location:	Quebec		N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover

Repairs conducted by: sbq
Printed: Monday, June 18, 2018
To view as PDF click here

ONTARIO HOSE & COUPLINGS LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
6295 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Street Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
Tel: 905-670-0113 Fax: 905-670-4958	Tel: 519-336-8541 Fax: 519-336-8543	Tel: 905-662-0276 Fax: 905-662-0542	Tel: 613-549-7316 Fax: 613-549-8214	Tel: 514-685-1266 Fax: 514-685-1606	Tel: 902-465-5220 Fax: 902-465-5296

www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Hose Type:	Floater Hose	Size:	4"
Hose Number:	PNV00230	Length:	400'
Part Number:	Continental Floater Hose	HAWP (PSI):	200
Order:	1139497	Temperature Range:	
PO:	12560	Rating:	5/5 ☆☆☆☆☆
Unit Number:	2016	This is a brand new Hose and is OK to be in service	
Location:	Quebec		N/A
Colour:	-		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	6/18/2018	Hydro-Pressure:	6/18/2019
Static:	6/18/2018	Static:	6/18/2019
Visual:	6/18/2018	Visual:	6/18/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover

Repairs conducted by: sbq
Printed: Monday, June 18, 2018
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ONTARIO HOSE SPECIALTIES LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Montreal	Maritimes
6205 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Stree Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	**Fittings:**	Stainless Steel Male x Female Camlock
Hose Type:	floater hose	**Size:**	4"
Hose Number:	PNV00265	**Length:**	400'
Part Number:	GMFH4X400orangeRT	**HAWP (PSI):**	200
Order:	1173960	**Temperature Range:**	
PO:	12884	**Rating:**	5/5 This is a brand new Hose and is OK to be in service
Unit Number:	Fab:2018	**CRN:**	N/A
Location:	Quebec	**Colour:**	Orange

Last Test Date(s)		Scheduled Retest Date(s)	
Hydro-Pressure:	4/30/2018	**Hydro-Pressure:**	4/30/2019
Static:	4/30/2018	**Static:**	4/30/2019
Visual:	4/30/2018	**Visual:**	4/30/2019

Test PSI: 300 **Length Of Pressure Test:** N/A

No repair reasons listed

Test last conducted by: N/A
Printed: 6/15/2018

ONTARIO HOSE SPECIALTIES LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Montreal	Maritimes
6205 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Stree Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	**Fittings:**	Stainless Steel Male x Female Camlock
Hose Type:	floater hose	**Size:**	4"
Hose Number:	PNV00267	**Length:**	400'
Part Number:	GMFH4X400orangeRT	**HAWP (PSI):**	200
Order:	1173960	**Temperature Range:**	
PO:	12884	**Rating:**	5/5 This is a brand new Hose and is OK to be in service
Unit Number:	Fab:2018	**CRN:**	N/A
Location:	Quebec	**Colour:**	Orange

Last Test Date(s)		Scheduled Retest Date(s)	
Hydro-Pressure:	4/30/2018	**Hydro-Pressure:**	4/30/2019
Static:	4/30/2018	**Static:**	4/30/2019
Visual:	4/30/2018	**Visual:**	4/30/2019

Test PSI: 300 **Length Of Pressure Test:** N/A

No repair reasons listed

Test last conducted by: N/A
Printed: 6/15/2018

ONTARIO HOSE SPECIALTIES LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Montreal	Maritimes
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	**Fittings:**	Stainless Steel Male x Female Camlock
Hose Type:	floater hose	**Size:**	4"
Hose Number:	PNV00267	**Length:**	400'
Part Number:	GMFH4X400orangeRT	**HAWP (PSI):**	200
Order:	1173960	**Temperature Range:**	
PO:	12884	**Rating:**	5/5 This is a brand new Hose and is OK to be in service
Unit Number:	Fab:2018	**CRN:**	N/A
Location:	Quebec	**Colour:**	Orange

Last Test Date(s)		Scheduled Retest Date(s)	
Hydro-Pressure:	4/30/2018	**Hydro-Pressure:**	4/30/2019
Static:	4/30/2018	**Static:**	4/30/2019
Visual:	4/30/2018	**Visual:**	4/30/2019

Test PSI: 300 **Length Of Pressure Test:** N/A

No repair reasons listed

Test last conducted by: N/A
Printed: 6/15/2018

ONTARIO HOSE SPECIALTIES LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Montreal	Maritimes
6205 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Stree Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	**Fittings:**	Stainless Steel Male x Female Camlock
Hose Type:	floater hose	**Size:**	4"
Hose Number:	PNV00269	**Length:**	400'
Part Number:	GMFH4X400orangeRT	**HAWP (PSI):**	200
Order:	1173960	**Temperature Range:**	
PO:	12884	**Rating:**	5/5 This is a brand new Hose and is OK to be in service
Unit Number:	Fab:2018	**CRN:**	N/A
Location:	Quebec	**Colour:**	Orange

Last Test Date(s)		Scheduled Retest Date(s)	
Hydro-Pressure:	4/30/2018	**Hydro-Pressure:**	4/30/2019
Static:	4/30/2018	**Static:**	4/30/2019
Visual:	4/30/2018	**Visual:**	4/30/2019

Test PSI: 300 **Length Of Pressure Test:** N/A

No repair reasons listed

Test last conducted by: N/A
Printed: 6/15/2018

ONTARIO HOSE SPECIALTIES LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Montreal	Maritimes
6205 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Stree Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	**Fittings:**	Stainless Steel Male x Female Camlock
Hose Type:	floater hose	**Size:**	4"
Hose Number:	PNV00270	**Length:**	400'
Part Number:	GMFH4X400orangeRT	**HAWP (PSI):**	200
Order:	1173960	**Temperature Range:**	
PO:	12884	**Rating:**	5/5 This is a brand new Hose and is OK to be in service
Unit Number:	Fab:2018	**CRN:**	N/A
Location:	Quebec	**Colour:**	Orange

Last Test Date(s)		Scheduled Retest Date(s)	
Hydro-Pressure:	4/30/2018	**Hydro-Pressure:**	4/30/2019
Static:	4/30/2018	**Static:**	4/30/2019
Visual:	4/30/2018	**Visual:**	4/30/2019

Test PSI: 300 **Length Of Pressure Test:** N/A

No repair reasons listed

Test last conducted by: N/A
Printed: 6/15/2018

ONTARIO HOSE & COUPLINGS LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Quebec	Maritimes
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www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	Fittings:	(SS)MxF (Stainless Steel Male x Female Camlock)
Hose Type:	floater hose	Size:	4"
Hose Number:	PNV00272	Length:	400'
Part Number:	GMFH4X400orangeRT	HAWP (PSI):	200
Order:	1173960	Temperature Range:	
PO:	12884	Rating:	5/5 ☆☆☆☆☆
Unit Number:	Fab:2018	This is a brand new Hose and is OK to be in service	
Location:	Quebec		N/A
Colour:	Orange		

Last Test Date		Scheduled Retest Date(s)	
Hydro-Pressure:	4/30/2018	Hydro-Pressure:	4/30/2019
Static:	4/30/2018	Static:	4/30/2019
Visual:	4/30/2018	Visual:	4/30/2019

Test PSI:	300	Length of Pressure Test:	

Reasons for Repair

Fittings	Clamp/Ferrule	Tube	Cover

Repairs conducted by:
Printed: Monday, June 18, 2018
To view as PDF click here

ONTARIO HOSE SPECIALTIES LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Montreal	Maritimes
6205 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Stree Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
Tel: 905-670-0113 Fax: 905-670-4958	Tel: 519-336-8541 Fax: 519-336-8543	Tel: 905-662-0276 Fax: 905-662-0542	Tel: 613-549-7316 Fax: 613-549-6214	Tel: 514-685-1266 Fax: 514-685-1606	Tel: 902-465-5220 Fax: 902-465-5296

www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	**Fittings:**	Stainless Steel Male x Female Camlock
Hose Type:	floater hose	**Size:**	4"
Hose Number:	PNV00274	**Length:**	400'
Part Number:	GMFH4X400orangeRT	**HAWP (PSI):**	200
Order:	1173960	**Temperature Range:**	
PO:	12884	**Rating:**	5/5 This is a brand new Hose and is OK to be in service
Unit Number:	Fab:2018	**CRN:**	N/A
Location:	Quebec	**Colour:**	Orange

Last Test Date(s)		Scheduled Retest Date(s)	
Hydro-Pressure:	4/30/2018	**Hydro-Pressure:**	4/30/2019
Static:	4/30/2018	**Static:**	4/30/2019
Visual:	4/30/2018	**Visual:**	4/30/2019

Test PSI: 300 **Length Of Pressure Test:** N/A

No repair reasons listed

Test last conducted by: N/A
Printed: 6/15/2018

ONTARIO HOSE SPECIALTIES LTD.

HOSETRACKER

Mississauga	Sarnia	Stoney Creek	Kingston	Montreal	Maritimes
6205 Kestrel Road Mississauga, Ontario L5T 1Z4	480 Polymoor Drive Corunna, Ontario N0N 1G0	263 Barton Stree Stoney Creek, Ontario L8E 2K4	639 Justus Drive Kingston, Ontario K7M 4H5	1900 Hymus Blvd Dorval, Quebec H9P 1J7	10 Akerley Blvd U#25 Dartmouth, Nova Scotia B3B 1J4
Tel: 905-670-0113 Fax: 905-670-4958	Tel: 519-336-8541 Fax: 519-336-8543	Tel: 905-662-0276 Fax: 905-662-0542	Tel: 613-549-7316 Fax: 613-549-6214	Tel: 514-685-1266 Fax: 514-685-1606	Tel: 902-465-5220 Fax: 902-465-5296

www.ontariohose.com

TEST CERTIFICATE

Customer:	Petro-Nav	**Fittings:**	Stainless Steel Male x Female Camlock
Hose Type:	Goodyear	**Size:**	4"
Hose Number:	PNV00286	**Length:**	400'
Part Number:	GMFH4x400-ORANGE-F	**HAWP (PSI):**	200
Order:	1176561	**Temperature Range:**	
PO:	12894	**Rating:**	5/5 This is a brand new Hose and is OK to be in service
Unit Number:	14/06/18	**CRN:**	N/A
Location:	Dara	**Colour:**	-

Last Test Date(s)		Scheduled Retest Date(s)	
Hydro-Pressure:	6/14/2018	**Hydro-Pressure:**	6/14/2019
Static:	6/14/2018	**Static:**	6/14/2019
Visual:	6/14/2018	**Visual:**	6/14/2019

Test PSI: 300 **Length Of Pressure Test:** N/A

No repair reasons listed

Test last conducted by: N/A
Printed: 6/15/2018

DARA - AEM

Following Testing and Load

Main Reel # 3

#	Hose #		Feet
1	34	2007	400
2	55	2007	400
3	175	2014	400
4	174	2014	400
5	177	2014	400
6	171	2014	400
7	170	2014	400
8	274	2018	400
9	270	2018	400
10	272	2018	400
11	265	2018	400
12	267	2018	400
13	269	2018	400
14	230	2016	400
15	226	2016	220
16	132	2016	390
17	286	2018	400
18			
19			
20			
	Sub-Total main reel		**6610**
	6610		

APPENDIX C - MEL-ENV-0029: Agnico Pre-discharge and Spill Response Sea Can checklists & OHF Ship to Shore Fuel Discharge Procedure

OHF / Ship to Shore Fuel Discharge

		PROCEDURE NUMBER:	**MEL-ENV-0029**
People concerned	• **Environment** • **Site Services** • **Procurement and Logistics** • **Health and Safety**	**Prepared by**	**Environment Department**
		Authorized by	**Erika Voyer – Environment General Supervisor**
Effective :	**July 12, 2017**	***"Safety First, Safety Last … Safety Always!"*** ***"No Repeats" – Our Stepping Stone to ZERO HARM***	
This procedure corresponds to the required minimum standard. Each and every one also have to comply with the rules and regulations of the Nunavut Government in terms of health and safety at work.			

Objective:

- To ensure that prior to the discharge of any fuel into the Agnico Eagle Rankin Inlet Tank Farm or Agnico Eagle Rankin Inlet Oil Handling Facility (OHF) that all proper steps are in place to ensure compliance with Canadian Shipping Act, as well as Nunavut Water Board License, Nunavut Impact Review Board Certificate and other laws and regulations.

Concerned departments:


Environment


Health & Safety


Site Services


Procurement and Logistics

Risks/ Impacts Legend


Health & Safety


Process/quality


Legal Requirement


Environment

Prior to the beginning of the annual fuel discharge the following must be completed.

Procedure	*Risks/ Impacts*
1. The Oil Pollution Emergency Plan (OPEP) must be reviewed on an annual basis and updated prior to the first annual discharge. This will include but not limited to: a) Reviewing the Phone numbers for emergency's b) Updating maps c) Review and if necessary update equipment lists d) Review roles and responsibilities e) Update Declaration This is the responsibility of the Environment department.	
2. Contact Canadian Coast Guard and Transport Canada Pollution Prevention and make them aware of plans for transferring of fuel into our OHF for that season. This is the responsibility of the Environment department.	
3. Complete *Inventory report for Spill Response Sea Can at AEM's Oil Handling Facility in Rankin Inlet.* (*Inventory Checklist found on Page 6) This is the responsibility of the Environment Department.	
4. Ensure Shipping Company has provided Hose Testing Annual certification. This is the responsibility of the Environment Department.	
5. All personnel who will be a part of the fuel transfer (including Rankin Inlet Supervisor and third part contractor Intertek) must review the OPEP and be familiar with preventive measures to take and with the steps to take in the case of a spill event while fueling. This is the responsibility of the Department of Procurement and Logistics.	
6. Install secondary containment underneath each connection of conduit on land. This is the responsibility of the Environment Department	

7. Monitor secondary containment underneath each connection of conduit on land. This is the responsibility of the Department of Procurement and Logistics.	
8. Ensure there is two way functional communications between the OHF and the off-loading Vessel. This is the responsibility of the Department of Procurement and Logistics.	
9. Ensure there is lighting in place at the transfer flange to provide illumination during any transfers taking place during the low to no light hours. This is the responsibility of the Department of Procurement and Logistics.	
10. Prior to any discharge Agnico Eagle must receive a copy of the Ship/Shore checklist completed by the shipping company. Agnico Eagle should also verify this has been completed (as much as realistically possibly without boarding the ship). This is the responsibility of the Department of Procurement and Logistics.	
11. Contact must be made with both the H&S and Environmental Departments prior to the discharge of fuels. Meliadine Health & Safety meliadine.healthandsafety@agnicoeagle.com Meliadine Environment meli.environment@agnicoeagle.com This is the responsibility of the Department of Procurement and Logistics.	
12. The *Pre-discharge Checklist for AEM's Oil Handling Facility in Rankin Inlet* must be completed, signed and provided to the Environment Department prior to discharge. (*Checklist found on Page 5) This must be done for each fuel tanker for each campaign. This is the responsibility of the Department of Procurement and Logistics.	
Transfer	
1. Once the above points are completed, the ship to shore transfer can commence.	

2. Photos of the complete fuel transfer process should be taken, visually proving that all above procedures have been reached. This is the responsibility of Environment and Procurement and Logistics Departments.	
3. During the ship-to-shore transfer, Agnico Eagle will have competent personnel on location at all times to monitor the fuel transfer and maintain contact with the tanker's crew. This is the responsibility of the Department of Procurement and Logistics.	
4. Monitor the fuel transfer at the beginning of each transfer and after that on an hourly basis checking the manifold, conduit, tank, and any connection points on land for spills and/or leaks. Communication between shore and ship should take place on an hourly basis. This is the responsibility of the Department of Procurement and Logistics.	
5. We are required by law to have a fuel spill scenario every two years. However, since we have shift work at Meliadine, to ensure adequate training annually we will do mock spill/training and switch shifts each year. This way each shift completes every second year. This is the responsibility of the Environment Department in conjunction with the Emergency Response Team to plan and execute.	

OHF / Ship to Shore Fuel Discharge

Pre-discharge Checklist for Agnico Eagle's Oil Handling Facility in Rankin Inlet

Date :

Inspected By :

Time :

Vessel Unloading :

Pre-Discharge Check List	Conform	Non-conform	Comments
Is there two way communications between the OHF and the off-loading Vessel?			
Has a review of response material checklist been completed?			
Current Copy of OPEP and Declaration at the OHF.			
Prior to discharge, have the certification of the transfer conduits been received?			
Has there been secondary containment placed underneath each connection of Conduit?			
Is lighting in place at the transfer flange to provide illumination during any transfers taking place during the low to no light hours.			
Prior to discharge, has the Vessels' Ship/Shore checklist been reviewed and a completed copy received by Agnico Eagle?			
Prior to discharge inform H&S and Environment Departments that fuel transfer will commence.			
Has the emergency response equipment been reviewed with all personnel and contractors on shore?			

Comments / Recommendations

Signature :

Inventory report for Spill Response Sea Can at Agnico Eagle's Oil Handling Facility in Rankin Inlet

Date :

Inspected By :

Time :

Vessel Unloading :

Subject	Conform	Non-conform	Comments
Is the material and PPE stored in a manner that is organized and accessible in order to easily respond to spill?			
Are the sea cans in physically good shape? Easy to open?			
Are the sea cans identified as "Environmental Emergency Sea Can"?			
Is all the spill material in place?			
6 x Anchor sets (25 kg anchor, chain ballast, rode line and marker buoy)			
4 x Tow bridles with bullet float			
32 x 8" float x 12" skirt Optimax 2 Boom – 25' Sections			
1 x mini Max hydraulic skimmer with pump, power pack			
1 x Aluminum boat with 15 hp prop motor			
10 x 1/2" polyester yacht braid rope (600' rolls)			
5 x Drive pin anchors			
5 x slater anchors			
5 x wing anchors			
30 x sorbent boom, 5" x 4 per bag			
4 x mustang floater suit			

8 x personal floatation devices			
12 x oil resistant gloves			
12 x leather gloves			
2 x sledge hammer with fiberglass handle			
2 x spade – long handle			
2 x Fire extinguisher – 20 lb ABC with brackets			
20 x Tyvex Suit XL			
1 x Alberta standard #3 First aid kit			
4 x Storage totes for small items			
1 x quick tank (500 gallon / 1893 ltrs.)			

Comments / Recommendations

Signature :

APPENDIX D – MSDS for P-50 Diesel

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	DIESEL FUEL
Synonyms	:	Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC). Marine Gas Oil
Product code	:	101802, 100107, 100668, 100658, 100911, 100663, 100652, 100460, 100065, 101796, 101793, 101795, 101792, 101794, 101791, 100768, 100643, 100642, 100103, 101798, 101800, 101797, 101788, 101789, 101787, 102531, 100734, 100733, 100640, 100997, 100995, 100732, 100731, 100994
Manufacturer or supplier's details		Petro-Canada P.O. Box 2844, 150 - 6th Avenue South-West Calgary Alberta T2P 3E3 Canada
Emergency telephone number		Suncor Energy: +1 403-296-3000; Poison Control Centre: Consult local telephone directory for emergency number(s).

Recommended use of the chemical and restrictions on use

Recommended use	:	Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.
Prepared by	:	Product Safety: +1 905-804-4752

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Bright oily liquid.
Colour	Clear to yellow (This product may be dyed red for taxation purposes).
Odour	Mild petroleum oil like.

GHS Classification

Flammable liquids	:	Category 3
Acute toxicity (Inhalation)	:	Category 4

Skin irritation	:	Category 2
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Specific target organ toxicity - repeated exposure	:	Category 2 (Liver, thymus, Bone)
Aspiration hazard	:	Category 1

GHS Label element

Hazard pictograms :

Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H373 May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use personal protective equipment as required.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove victim to fresh air

and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Potential Health Effects

Primary Routes of Entry	:	Eye contact Ingestion Inhalation Skin contact Skin Absorption
Target Organs	:	Skin Eyes Respiratory Tract
Inhalation	:	May cause respiratory tract irritation. Inhalation may cause central nervous system effects. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.
Skin	:	Causes skin irritation.
Eyes	:	Causes eye irritation.
Ingestion	:	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Aspiration hazard if swallowed - can enter lungs and cause damage.
Aggravated Medical Condition	:	None known.

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
kerosine (petroleum), hydrodesulfurized	64742-81-0	70 - 100 %
kerosine (petroleum)	8008-20-6	
fuels, diesel	68334-30-5	
fuel oil no. 2	68476-30-2	
Alkanes, C10-20-branched and linear	928771-01-1	0 - 25 %
Soybean oil, Methyl ester	67784-80-9	0 - 5 %
Rape oil, Methyl ester	73891-99-3	
Fatty acids, tallow, Methyl esters	61788-61-2	

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
Artificial respiration and/or oxygen may be necessary.
Seek medical advice.

In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash skin thoroughly with soap and water or use recognized skin cleanser.
Wash clothing before reuse.
Seek medical advice.

In case of eye contact : Remove contact lenses.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Obtain medical attention.

If swallowed : Rinse mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Never give anything by mouth to an unconscious person.
Seek medical advice.

Most important symptoms : First aider needs to protect himself.

and effects, both acute and delayed

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during firefighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Material can create slippery conditions.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Soak up with inert absorbent material. Non-sparking tools should be used. Ensure adequate ventilation. Contact the proper local authorities.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Use only with adequate ventilation.

In case of insufficient ventilation, wear suitable respiratory equipment.
Avoid spark promoters. Ground/bond container and

equipment. These alone may be insufficient to remove static electricity.
Avoid contact with skin, eyes and clothing.
Do not ingest.
Keep away from heat and sources of ignition.
Keep container closed when not in use.

Conditions for safe storage : Store in original container.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
To maintain product quality, do not store in heat or direct sunlight.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
kerosine (petroleum), hydrodesulfurized	64742-81-0	TWA	200 mg/m3	ACGIH
kerosine (petroleum)	8008-20-6	TWA	100 mg/m3	NIOSH REL

Engineering measures : Use only in well-ventilated areas.
Ensure that eyewash station and safety shower are proximal to the work-station location.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection
Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for

wear and tear. At the first signs of hardening and cracks, they should be changed.

Remarks	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Protective measures	:	Wash contaminated clothing before re-use.
Hygiene measures	:	Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Bright oily liquid.
Colour	:	Clear to yellow (This product may be dyed red for taxation purposes).
Odour	:	Mild petroleum oil like.
Odour Threshold	:	No data available
pH	:	No data available
Pour point	:	No data available
Boiling point/boiling range	:	150 - 371 °C (302 - 700 °F)
Flash point	:	> 40 °C (104 °F) Method: closed cup
Auto-Ignition Temperature	:	225 °C (437 °F)
Evaporation rate	:	No data available
Flammability	:	Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.
Upper explosion limit	:	6 %(V)
Lower explosion limit	:	0.7 %(V)
Vapour pressure	:	7.5 mmHg (20 °C / 68 °F)

Relative vapour density	:	4.5
Relative density	:	0.8 - 0.88
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, kinematic	:	1.3 - 4.1 cSt (40 °C / 104 °F)
Explosive properties	:	Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Runoff to sewer may create fire or explosion hazard.

SECTION 10. STABILITY AND REACTIVITY

Possibility of hazardous reactions	:	Hazardous polymerisation does not occur. Stable under normal conditions.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents and acids.
Hazardous decomposition products	:	May release COx, NOx, SOx, H2S, smoke and irritating vapours when heated to decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Ingestion
Inhalation
Skin contact
Skin Absorption

Acute toxicity

Product:

Acute oral toxicity	Remarks: No data available
Acute inhalation toxicity	Remarks: No data available
Acute dermal toxicity	Remarks: No data available

Components:

kerosine (petroleum), hydrodesulfurized:

Acute oral toxicity LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity	LC50 (Rat): > 5.2 mg/l Exposure time: 4 hrs Test atmosphere: dust/mist
Acute dermal toxicity	LD50 (Rabbit): > 2,000 mg/kg

kerosine (petroleum):

Acute oral toxicity	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	LD50 (Rabbit): > 2,000 mg/kg

fuels, diesel:

Acute oral toxicity	LD50 (Rat): 7,500 mg/kg
Acute dermal toxicity	LD50 (Mouse): 24,500 mg/kg

fuel oil no. 2:

Acute oral toxicity	LD50 (Rat): 12,000 mg/kg
Acute inhalation toxicity	LC50 (Rat): 4.1 mg/l Exposure time: 4 h Test atmosphere: dust/mist

Skin corrosion/irritation

Product:

Remarks: No data available

Serious eye damage/eye irritation

Product:

Remarks: No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to algae	:	Remarks: No data available
Toxicity to bacteria	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Remarks: No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labelled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
Contaminated packaging	:	Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

UN/ID No.	:	1202
Proper shipping name	:	Diesel fuel
Class	:	3
Packing group	:	III
Labels	:	3
Packing instruction (cargo aircraft)	:	366

IMDG-Code

UN number	:	1202
Proper shipping name	:	DIESEL FUEL
Class	:	3
Packing group	:	III
Labels	:	3
EmS Code	:	F-E, S-E
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

49 CFR

UN/ID/NA number	:	1202
Proper shipping name	:	Diesel fuel
Class	:	3
Packing group	:	III
Labels	:	3
ERG Code	:	128
Marine pollutant	:	no

Special precautions for user

Not applicable

SECTION 15. REGULATORY INFORMATION

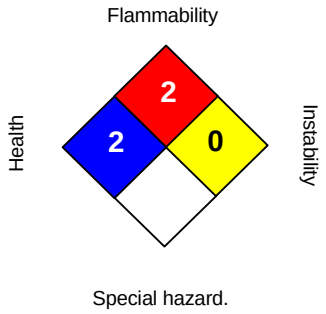
The components of this product are reported in the following inventories:

DSL	On the inventory, or in compliance with the inventory
TSCA	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
EINECS	On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	2
PHYSICAL HAZARD	0
PERSONAL PROTECTION	H

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds
Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228
For Product Safety Information: 1 905-804-4752

Prepared by : Product Safety: +1 905-804-4752

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

APPENDIX E –Ship to shore checklist and cargo pre arrival - Coastal Shipping LTD

Ship / Shore Cargo Checklist

Vessel: _____
Port: _____
Date: _____
Operation: ❒ Discharge ❒ Load

Letter Codes

A Any procedures and agreements should be in writing in the remarks column of this checklist or other mutually acceptable form. In either case, the signature of both parties is required

P In the case of a negative answer, the operation should not be carried out without the permission of the port authority.

R Items to be rechecked regularly, not exceeding the time specified in the declaration

General cargo considerations: (check (•) under Ship/Shore if OK, otherwise provide comment)

Item	Ship	Shore	Code	Comments
Is the vessel securely moored?			**R**	Stop Cargo at_____knts wind velocity Disconnect at_____knts wind velocity Unberth at_____knts wind velocity
Are emergency towing wires correctly positioned?			**R**	
Is there safe access between the ship and the shore?			**R**	
Is the ship ready to move under it's own power?			**P R**	
Is there an effective deck watch in attendance on the ship and adequate supervision on shore?			**R**	
Is the agreed ship/shore communication system operative?			**A R**	Method:
Has the emergency signals to be used by the ship and shore been explained and understood?			**A**	
Have the procedures for cargo, bunkering and ballast been agreed upon?			**A R**	
Have the hazards associated with toxic substances within the cargo being handled been identified and understood?				
Has the emergency shutdown procedure been agreed?			**A**	
Are fire-hoses and fire fighting equipment on board and ashore positioned and ready for immediate use?			**R**	
Are cargo and bunker hoses/arms in good condition, properly rigged and appropriate for intended use?				
Are scuppers effectively plugged drip tray valves closed both on board and ashore?			**R**	
Are unused cargo and bunker connections properly secured with blank flanges fully bolted?				
Are Sea and overboard discharge valves closed when not in use?				
Are all cargo and bunker tank lids closed?			**A R**	
Is the agreed tank venting system being used?				
Has the operation of P/V valves been verified?				
Are flashlights in use of an approved type?				
Are portable VHF/UHF radios of an approved type?				
Are the ships MF/HF radios grounded, VHF radios set to low power and 10 cm radars shut off?				
Is any portable electrical equipment disconnected?				
Are all external doors and ports in the accommodation closed?			**R**	
Are air intakes, which may permit the entry of cargo vapours, closed?				
Is the galley staff informed of loading/discharged operations?				
Are Smoking regulations being observed?			**R**	
Are naked light rules being observed?			**R**	
Is there provision for an emergency escape?				

Ship / Shore Cargo Checklist

Are there sufficient personnel on board and ashore to deal with an emergency?			**R**	
Are adequate insulating means in place in the ship shore connection?				
Is the pumproom ventilation adequate?			**R**	
Have the requirements for closed loading been agreed?				
Has a vapour return line been connected?				
If so, have the operating parameters been agreed?				
Are ship emergency fire control plans located externally?				
Are appropriate signals being displayed?				

Inert Gas Systems (if in use):

Item	Ship	Shore	Code	Comments
Is the Inert Gas System operational and in good working order?			**P**	
Are deck seals in good working order?			**R**	
Are Liquid levels in P/V breakers Correct? Have O^2 Analysers been calibrated and are working properly?			**R** **R**	
Are IG pressure and Oxygen recorders working properly? Are all Cargo tanks at positive pressure with O^2content of <8%?			**R** **P R**	
Are all IG Tank valves correctly set and locked?			**R**	
Are all the persons in charge of cargo operations aware that in the case of failure of the Inert Gas Plant, discharge operations should cease and the terminal be advised?			**R**	

Tank Cleaning (if planned while ship is at berth):

Item	Ship	Shore	Code	Comments
Has the port authority approved any tank-cleaning operations planned during the ships stay?			**P**	

Operations:

Item	Value	Ship	Shore
Initial cargo transfer rate to be used (m^3/hr, bbls/hr, etc)			
Maximum cargo transfer rate to be used (m^3/hr, bbls/hr, etc)			
Topping off rate to be used (m^3/hr, bbls/hr, etc)			
Maximum hose pressure to be used (bar)			
Quantity of cargo to be transferred (m3, bbls of each grade)			
Hose to be drained after transfer complete	❒ Ashore ❒ Back to vessel		
Hose to be cleared by	❒ Gravity ❒ Comp. Air ❒ Pig		
Emergency stop button located	❒ On Ship ❒ Ashore		

Declaration:

We the undersigned have checked, where appropriate jointly the items on this checklist and are satisfied that the entries made are to the best of our knowledge correct.We have also made arrangements to carry out repetitive checks as necessary and agreed that those items with the letter **R** in the column **Code** should be rechecked at intervals not exceeding_____hours.

Signatures:

For Vessel	**For Shore**
Name: _____	Name: _____
Rank: _____	Position: _____
Signature: _____	Signature: _____
Date & Time: _____	Date & Time: _____

Cargo Preparation Checklist

Vessel: __
Port: __
Date: __

Prior to entering a port or terminal:

Item	Completed
Emergency towline, anchor releasing mechanism, and mooring lines and winches are inspected to determine that the equipment is ready for use and in good condition.	

Prior to cargo transfer operations an examination and testing of the following items:

Item	Completed
All external doors, ports, and similar openings, which lead directly from the tank deck to the accommodation or machinery spaces, are closed.	
P/V valves and the venting system have been inspected and properly set for the transfer operation and the high-level alarm system has been tested. A High Level and PV Valve Checks form has been completed	
Pumproom strainer covers, inspection plates, and drain plugs are properly positioned and secure.	
Flange connections are all fully bolted and tightened with no improvised arrangements in place.	
Visual examination of all hoses and verification of hose certificate before use.	
Sea and overboard discharge valves, when not in use, are securely closed, lashed and sealed.	
Fire extinguishing and pollution control equipment is in place and ready for immediate deployment.	
Scupper plugs have been inspected and are in place and secured.	
Bondable drip trays are available for each manifold connection to be made.	
Tools for deploying, connecting blowing, pigging, disconnecting and recovering cargo hose are prepared as required.	
All cargo transfer valves are operational and positioned as be required. Closed valves are lashed as appropriate.	
When loading multiple grades, sufficient segregation is in place and ship personnel are made aware.	
Manifold(s) to be used are fitted with the correct reducers or adaptors for expected connection and all unused manifolds are drained and blanked.	
All pressure and temperature gauges on manifolds to be used are functioning correctly and calibrated.	
Emergency shut down mechanism has been tested and ship personnel are familiar with its use.	
Fire wires are positioned correctly, if required by terminal.	
Sufficient auxiliary machinery is running to ensure adequate electrical power is available during cargo operations.	
Compressed air is available on deck to run SOPEP pumps and blow/pig hoses are required.	
A list of responsible officers on duty during transfer is posted and readily available. Crew are familiar with their watches during cargo operations.	
Arrangements have been made to ensure the Master and/or the Chief Officer will be on board and available at all times during cargo operations.	

Additional comments or conditions:

Signatures:

Name: _____ Name: _____

Rank: _____ Rank: Chief Officer

Signature: _____ Signature: _____

APPENDIX F – The Central and Arctic Regional Response Plan (2008)

Canadian Coast Guard
Central & Arctic Region

Regional Response Plan

December 2008

LETTER OF PROMULGATION

The *Central & Arctic Regional Response Plan (2008)* replaces the *Central & Arctic Region Contingency Chapter (2006)* and the *Arctic Response Strategy (1999)*. This plan is a component of the *Canadian Coast Guard Nationa Response Plan* which is the responsibility of the Director of Safety and Environmental Response Systems, Ottawa. It establishes the framework and the procedures by which Central & Arctic Region will prepare for, assess, respond to and document actions taken in response to pollution incidents in this Region.

The saving of life is of paramount consideration and the Plan is subordinate to the operational requirements of marine search and rescue.

The Plan has been reviewed by the internal partners identified in Section 3.3 in context to the services they may provide and by the external partners identified in Sections 3.4 and 3.5 to confirm their mandated response authorities.

Responsibility for the *Regional Response Plan* lies with the Assistant Commissioner Coast Guard Central & Arctic Region. The Central & Arctic Region Environmental Response branch is the custodian of the plan. The responsibility for specific sections is identified in Section 7 - Plan Maintenance and Custodians. Comments, recommendations and communications relating to the various sections are clearly identified in this section.

REVISION RECORD

CENTRAL & ARCTIC REGIONAL RESPONSE PLAN			
Section	Replace	Transmittal No.	Description of Changes
Entire Plan	All	December 1, 2005	Complete revision of Central & Arctic Regional Response Plan
Entire plan	All	April 1, 2006	Complete revision of Central & Arctic Regional Response Plan
7.1 Maintenance Process	Page 7-1	May 8, 2007	Update address to 520 Exmouth Street
8.3 CCG ER Phone List	Page 8-1	June 4, 2007	Update address to 520 Exmouth Street
Entire Plan	All	December 2008	Complete revision of Central & Arctic Regional Response Plan

Section 1 - INTRODUCTION

1.1. Authority

This plan is based upon the policy and guiding principles set forth in the *National Response Plan* of the *Canadian Coast Guard National Response Strategy*.

1.2. Purpose

The *Central and Arctic Regional Response Plan* is designed as a guide to Canadian Coast Guard staff and relevant stakeholders involved in marine spill responses. It outlines the Regional application of the various roles of On-Scene Commander (OSC) (active response), Federal Monitoring Officer (FMO) (ensuring the Responsible Party fulfills their obligations), and as a Resource Agency (in assistance to other Lead Agencies).

It contains the specific information and activities that are pertinent to all spill response activities within Central & Arctic Region (C&A Region).

1.3. Area of Responsibility

For the purposes of marine pollution response Central & Arctic Region is defined geographically as:

- The contiguous waters of the Canadian Arctic (North of 60^{o} Latitude) to the limits of the International Boundary, including the North Slope Area of the Yukon Territories, and internal waters of the Northwest Territories and the Territory of Nunavut; and

- The waterways contained within the provinces of Alberta, Saskatchewan, Manitoba, Ontario, and a western portion of Quebec commencing at the east wall of the Beauharnois Lock in the St. Lawrence River.

(see Figure 1-1 Fisheries and Oceans Central & Arctic Region)

Significant waterways include the Canadian Great Lakes and interconnecting waterways to the international Boundary with the United States, Hudson and James Bays, Lake Winnipeg, Lake Athabasca and interconnecting waterways, Great Slave Lake, Mackenzie River and the Northwest Passage in the Canadian Arctic.

There are also a number of specific geographic locations which, although not excluded from Canadian Coast Guard's mandate, require coordination between the managing authorities and this plan. These areas include the waters associated with

the various Port Authorities (Hamilton, Thunder Bay, Toronto and Windsor) and the St. Lawrence Seaway Authority (Welland Canal, St. Lawrence Locks) as defined by the *Canada Marine Act, 1998*.

Figure 1-1: Fisheries and Oceans Central & Arctic Region

1.4. Safety Policy

Safety is the first and foremost consideration in any pollution response in Central & Arctic Region. This commitment is expressed throughout this and other documents as well as in the programs relied on by the Environmental Response (ER) branch to prepare for such spills (i.e. training and exercising programs). General safety procedures and considerations to be followed by all members of the Regional Response Team are identified in Section 5.7 of this plan.

1.5. Links to the National Response Plan

The Guiding Principles and Mandate (including legislative, interdepartmental, intergovernmental and international agreements) as well as designation of Lead and Resource Agency roles are contained in the *National Response Plan Section 1 – Introduction.* The mechanism for activating the Environmental Response National Response Team is also defined in the *National Response Plan*.

1.6. Regional Response Plan Structure

The Regional Response Plan is structured to reflect the three fundamental phases of Environmental Response activities. These are:

1) Preparedness - through the regional application of Contingency Planning (resulting in specific response strategies), Training (state of personnel readiness), Exercising (state of system readiness) and Inventory Maintenance and Management (state of mechanical/equipment readiness).

2) Response Operations - identifying the mechanisms for:
   - *Initiating* (through a dedicated Duty Officer and Assessment process),
   - *Sustaining* (Operational functions as Lead or Resource Agency),
   - *Controlling* (using the Response Management System), and
   - *Finalizing* the response activity (decommissioning and reporting).

3) Claims, Recovery and After-action activities - for the documentation and recovery of spent resources from the polluter, their agents, national or international funding conventions.

Surrounding these fundamentals are the specifics of the Environmental Response Program in Central and Arctic Region that are too cumbersome to be included in the main text of this Response Plan. They include: Regional Agreements and Memoranda of Understanding, Regional Organization and the specific Annexes which support the program. Finally, the Response Plan includes the preliminary and supplementary matter such as Letter of Promulgation, Record of Revision and the Identification of Custodians and the Plan Maintenance process.

1.7. Linkages to other Response Plans in the Region

When a pollutant is spilled into the water, the Canada Shipping Act is not the only legislation that applies. Recognizing that being designated Lead Agency for pollution response to mystery spills and spills from vessels does not preclude other agencies from completing their mandate CCG acknowledges that the Internal and External Partners listed in Sections 3.4 and 3.5 have plans that are active within Central & Arctic Region.

1.8. Linkages to International Joint Plans

International Joint Plans and agreements affecting Central & Arctic Region include:

- Canada-United States Joint Marine Pollution Contingency Plan
- Canada-Denmark Agreement for Co-operation Relating to the Marine Environment, Annex B (Joint Marine Contingency Plan concerning Incidents resulting from Shipping Activities)
- Great Lakes Water Quality Agreement, Annex 9
- International Boundary Waters Treaty Act

The Canadian Coast Guard Environmental Response Branch also provides technical support for the Emergency Prevention, Preparedness and Response (EPPR) Working Group of the Arctic Council. The EPPR Working Group exchanges information on best practices for preventing spills, preparing to respond to spills should they occur, and practical response measures for use in the event of a spill.

The Arctic Council is an intergovernmental forum of the eight circumpolar countries (Canada, Denmark, Finland, Iceland, Norway, Sweden, the Russian Federation and the United States of America) that provides a mechanism to address the common concerns and challenges faced by the Arctic governments and the people of the Arctic.

Some work has been initiated with the Russian Federation for the development of a Joint Pollution Response Plan. To date no agreements have been signed.

Section 2 - AGREEMENTS AND MEMORANDA OF UNDERSTANDING

2.1 Overview

The Canadian Coast Guard (CCG), both Central & Arctic and National Headquarters, maintain numerous memoranda and letters of understanding and agreement between other government departments which outline shared responsibilities in pollution response. A brief description of the major agreements is listed below.

- Letter of Agreement between Canadian Coast Guard, Environmental Response Branch and Canadian Coast Guard, Operational Services and Canadian Coast Guard, Technical Services regarding the use of Environmental Response First Response Units (FRUs) by non-environmental response staff. This agreement concerns the use of FRUs at the various CCG facility sites (bases, sub-bases and search and rescue stations).

- Northwest Territories/Nunavut Spills Working Agreement. This agreement formalizes procedures whereby spill investigation and monitoring in the Northwest Territories (NT) and Nunavut (NU) can be coordinated.

- Fisheries & Oceans (DFO) and Environment Canada (EC) Letter of Agreement respecting transfer of responsibility as lead agency for mystery spills from Environment Canada (EC) to the Canadian Coast Guard/Fisheries & Oceans Canada (July 1996)

- Transport Canada (TC) and Fisheries & Oceans (DFO) Memorandum of Understanding respecting Marine Transportation Safety & Environmental Protection (May 1996). This MOU outlines the responsibilities transferred from TC to DFO in accordance with the *Public Service Rearrangement and Transfer of Duties Act*. Those pertinent to this plan include:
    a) The responsibility for ensuring the provision of pollution clean up services
    b) The authority to take actions to mitigate or prevent pollution from ships

- Letter of Understanding between the Canadian Coast Guard and the Hamilton Port Authority to outline the roles that the CCG and the HPA will

play in the event of a pollution incident which falls within the mandate of the Canadian Coast Guard.

- Letter of Understanding between the Canadian Coast Guard and the Thunder Bay Port Authority to outline the roles that the CCG and the TBPA will play in the event of a pollution incident which falls within the mandate of the Canadian Coast Guard.

- Letter of Understanding between the Canadian Coast Guard and the Toronto Port Authority to outline the roles that the CCG and the TPA will play in the event of a pollution incident which falls within the mandate of the Canadian Coast Guard.

- Letter of Understanding between the Canadian Coast Guard and the Windsor Port Authority to outline the roles that the CCG and the WPA will play in the event of a pollution incident which falls within the mandate of the Canadian Coast Guard.

Some memoranda of understanding and letters of agreement have been rendered defunct by virtue of the dissolution or reorganization of the entities that signed the original document. It is the Region's intent to assess the need for an MOU and in those cases where renewal is needed, to draft a new MOU and submit to the partner organization the request for re-entry into that agreement. For further information on these memoranda, please contact the Environmental Response Planning Section.

Section 3 - ORGANIZATION

3.1 General Application

This section describes the primary working relationships between Fisheries and Oceans (DFO), Canadian Coast Guard, Environmental Response branch (CCG/ER) and the various internal and external partners, clients and external resources.

Internal partners include: Other DFO sectors, directorates and branches, and other federal departments which provide direct assistance or have specific mandates which directly affect response activities.

External partners include those entities that share the burden of pollution response for their specific area of responsibility. These agencies include the provincial and territorial government ministries with the generic mandate of pollution response.

Clients include those entities that are specifically identified by the *Canada Shipping Act (CSA)* and have direct involvement in the response regime; they include Oil Handling Facilities (OHF), Legislated Ships and Non-legislated Ships.

External resources are those resources outside of the government that the Canadian Coast Guard may engage while conducting spill response activities. These include the Response Organizations (RO) certified by Transport Canada and other independent contractors which may perform more specific functions.

3.2 Fisheries and Oceans, Canadian Coast Guard - Environmental Response Branch (CCG/ER)

The Assistant Commissioner, Canadian Coast Guard through the Maritime Services Directorate and the Superintendent of Environmental Response (ER) directs the Regional Environmental Response Team. This team represents one facet of the overall crisis management structure within Central and Arctic Region and performs the function of the Lead Response Agency for pollution incidents as defined in the *National Response Plan – Section 1* of the *Canadian Coast Guard National Response Strategy.* The branch consists of approximately seventeen (17) full time employees (FTEs).

Internally, the Environmental Response Branch is made up of five (5) distinct but integrated functions:

1) *Direction and Administration* - providing the overall guidance, management and liaison with Headquarters. The Superintendent holds the responsibility for escalating a response and/or dedicating resources.
2) *Planning* - providing the design and management of plans and procedures to facilitate the preparedness posture of the Region (responsible for developing and maintaining intradepartmental, interdepartmental, client and regime stakeholder relationships).

3) *Operations and Inventory Maintenance & Management* - provide the management and maintenance of equipment to ensure the operational response readiness of the Region.
4) *Training* - provides the coordination and delivery of educational materials, to internal as well as external partners and clients, in support of the overall preparedness posture of the Region.
5) *Exercising* - provides the management and coordination of internal and external partners and clients to validate, practice and reinforce all aspects of the Response readiness of the Region.

In addition to these core functions, each staff member is required to actively participate in the operational aspects of the response regime based upon their skill and ability levels. This includes assuming various roles within the Response Management Structure acting as Duty Officer (DO) and supporting the overall emergency preparedness structure within the Region (not necessarily related exclusively to oil spills or pollution).

In the context of this Plan, the Environmental Response Branch is tasked to:

- Fulfill the Canadian Coast Guard's obligations as Lead Agency in an OSC or FMO posture in responding to marine pollution incidents from ships in waters of Canadian interest as well as from unknown sources.
- Act as a Resource Agency in support of a response led by another agency when requested.
- Staff a Duty Officer position on a 24/7 basis which, together with other agency representatives, will assess or direct the assessment of spill reports.
- Ensure that an appropriate response to pollution incidents is initiated on a timely basis.
- Provide initial response capabilities throughout the region.
- Monitor response and clean-up priorities when polluter has accepted responsibility.
- Ensure international commitments in spill preparedness and response are fulfilled.
- Provide a pollution response capability for lightering, salvage and offshore recovery operations.
- Provide Regional and HQ briefings on status of emergency operations.
- Evaluate, acquire and maintain specialized marine emergency countermeasures equipment and develop deployment techniques.
- Develop, distribute and maintain the *Central and Arctic Regional Response Plan* of the *Canadian Coast Guard National Response Strategy* (including area annexes) on behalf of Fisheries and Oceans.
- Review and comment on other government as well as industry pollution response plans upon request.
- Provide pollution response related training to Canadian Coast Guard and civilian personnel.

- Conduct spill response exercises according to the Canadian Coast Guard National Exercise Program (NEP) standards.
- Provide detailed explanations of response operations and policies to representatives of the media, interest groups, industry, police and Provincial and Municipal governments.
- Provide a centre of expertise for pollution concerns.
- Develop and foster a good working relationship with other authorities, shipping and oil/chemical handling communities.
- Working with Environmental Response Headquarters and the Chemical Industry to develop, implement and maintain a corresponding and complimentary regional capability for spills of hazardous and noxious substances other than oil.

3.3 Internal Partners – Fisheries and Oceans

Other branches and directorates within Fisheries and Oceans which directly and in a continuous active way support preparedness and response activities include:

Marine Traffic and Communications Branch (MTCS) – CCG/Marine Programs Directorate

Marine Traffic and Communications Services operates a marine VHF/MF/HF communications system (depending on location) primarily for the provision of marine safety information, distress coordination and marine traffic regulation. MCTS will support Environmental Response (ER) activities by:

- Establishment of Movement Restriction Areas (MRA's) or exclusion zones as directed by the Federal Monitoring Officer (FMO) or On Scene Commander (OSC).
- Providing communications/radio equipment operators in support of off-site ER operations.
- Dissemination of marine information and issuing marine Notices to Shipping (NOTSHIPS).
- Providing vessel tombstone information including, but not limited to, vessel name, call sign, nationality, tonnage, dangerous cargo type and quantity.

Regional Operations Centre (ROC) and Fleet Resources – CCG/Operational Services Directorate

Regional Operations Centre

The ROC provides notification to the Environmental Response Duty Officer (ERDO) when notified of a spill or an occurrence which may result in a spill. Upon receiving information regarding a spill, the ROC confirms the report using reliable resources and agencies. When the incident has been confirmed the Operation Centre begins the alerting and notification procedure. A schedule of ERDOs, approved by the Superintendent Environmental Response Canadian Coast Guard, will be maintained by the ER Regional Emergency Operations Officer (REOO) and forwarded to ROC for distribution.

The Regional Operations Centre will support the Environmental Response Branch during a marine pollution incident by:

- Maintaining up to update contact lists for Canadian Coast Guard and other government agencies for use as incidents progress.
- Coordinating the allocation of CCG resources as required by the FMO or the OSC to respond to a marine pollution incident.
- Provide communications support (when necessary).

Fleet Resources

Fleet Resources may be called upon to provide a host of support and/or lead services depending upon the type and severity of the situation and limitations or constraints of the vessel. Commanding Officers maintain full responsibility for the operation and safety of their vessel and personnel and therefore, will/may:

- Be called upon to be interim On-scene Commander.
- Be the principal point of contact aboard ship for the Environmental Response Duty Officer or On Scene Commander.
- Investigate spill reports for the purpose of confirmation.
- Provide surveillance and monitoring of third party (or pollutant) as required.
- Initiate early spill response; containment, boom or sorbent material deployment, clean up and recovery procedures.
- Provide site safety, (i.e. fire fighting, first aid and crowd control).

Fleet does maintain their own limited capabilities to respond to their needs as required.

Canadian Coast Guard Bases

In preparation for and during a pollution incident, CCG bases may also provide resources for response. These resources are generally within the scope of normal base activities and include:

- Small vessel use
- Base facilities (boardrooms, workshops)
- Helicopter landing pads
- Boat launch and docking slips
- Staging areas

Safety, Security and Emergency Services Branch – DFO Corporate Services

For large spills of a significant nature the Regional Manager of Safety, Security & Emergency Services may provide the following:

- Advice and recommendations to the On Scene Commander on issues of site and employee safety and the application of departmental security policy measures.
- General occupational health & safety and security advice to the On-Scene Commander/Deputy On-Scene Commander as per the departmental Loss Control Manual.

- A Health & Safety Officer to perform the functions of the Heath & Safety Officer described in the Response Management System User Guide. This person will report directly to the OSC or FMO throughout the duration of the response.

On occasions when the Regional Manager of Safety & Security (or delegate) is not available, or when spills are of a minor nature, the On-Scene Commander shall appoint a member of the response team to fulfill the general duties required.

Communications Branch – DFO Communications
Communications team manages the media (external) handling inquiries from print, radio, television and internet news organizations through the application of *Fisheries & Oceans Crisis Communications Plan*. Communications branch coordinates all aspects of information being released to ensure the public is getting the most relevant, accurate information as soon as practicable.

Legal Services
The DFO Legal Services in CCG Headquarters section will provide legal advice and guidance in the event of a marine pollution incident where CCG may or has been engaged. This especially includes advice on the issuance of Letters of Undertaking (LOUs) and in situations where Canadian Coast Guard may have to take command and control of an incident away from the Polluter.

Other DFO Resources
Indirectly, but just as significant in the event of a spill, is the availability of other DFO resources. This includes any and all appropriate functions including, but not limited to the following:

- Trenton Joint Rescue Coordination Centre – CCG, Maritime Services Directorate, Search and Rescue Branch (SAR)
- Finance and Administration – Human Resources and Corporate Services Directorate
- Human Resources - Human Resources and Corporate Services Directorate
- Facilities – Real Property
- Other Technical Resources – CCG, Integrated Technical Services Directorate
- Fish Habitat Branch – Habitat Fisheries and Oceans Management

3.4 Internal Partners – Other Government Departments

Other federal departments which provide direct assistance or have specific mandates which directly affect response activities include:

Environment Canada (EC)
There are two (3) Environment Canada regions located within Central & Arctic region. They are Ontario, Prairie and Northern and Pacific and Yukon Regions.

The Environmental Emergencies Section provides:

- In Ontario, the Co-chair (with the Ontario Ministry of the Environment (MOE)) of the Regional Environmental Emergencies Team (REET).
- In the Arctic (consisting of the three Territories), the Co-chair (with the relevant Territorial Government, Department of Environment) for the Arctic Regional Environmental Emergencies Team.
- Coordination of the Shoreline Cleanup and Assessment Teams (SCAT).
- Advice concerning environmental impacts associated with vessel source spills, resource sensitivity and prioritization, environmental forecasting, spill and cleanup monitoring and clean up techniques and priorities
- Sampling assistance, identification and characterization of materials

The REET serves as a mechanism for the provision of consolidated, coordinated and comprehensive environmental information and advice concerning the fate and effects of hazardous and noxious substances, spill trajectories, resources and shoreline protection strategies, clean up priorities, physical and chemical counter measures, remedial endpoints, damage assessment, and the management of hazardous wastes generated during a spill and other matters which arise while planning and responding to emergency events which affect or risk environmental quality. In the planning mode REET members meet to improve contingency plans, resolve regional preparedness issues and exchange new scientific and response ideas.

In Ontario Region, Environment Canada has divided the province into eighteen (18) REET areas and plans to hold one (1) REET meeting per area per year, consolidating some areas where possible and maintaining annual meetings in the higher risk areas (Windsor, Sarnia, Sault Ste. Marie).

Two of three primary Arctic REET (AREET) areas are in Prairie and Northern Region: the Northwest Territories and Nunavut Territory. There is no REET established in Alberta, Saskatchewan and Manitoba.

The Meteorological Service of Canada (part of EC and REET) provides:

- Meteorological forecasting

The Canadian Wildlife Service (part of EC and REET) provides

- Advice on wildlife protection, rescue and rehabilitation
- Permits for wildlife hazing and capture

Transport Canada (TC)

The Environmental Response Systems Division in Ottawa is responsible for Canada's Marine Oil Spill Preparedness and Response Regime. It:

- works with other federal agencies and departments, such as Fisheries and Oceans Canada, the Canadian Coast Guard and Environment Canada to establish guidelines and regulatory framework for preparedness and response to oil spills and spills of noxious and hazardous substances into Canada's marine environment.

- Manages the National Aerial Surveillance Program

There are two Transport Canada regions located within Central & Arctic region. They are Ontario and Prairie and Northern regions.

The Aircraft Services Directorate provides:

- Aerial surveillance as part of the Prevention mandate within Transport Canada, and can provide aerial spill tracking, recording, and personnel transport.

The Marine Safety Branch provides:

- Technical advice and recommendations to the On-Scene Commander or the Ship Owner regarding, but not limited to, lightering, damage assessment and salvage.

  Note: The MOU between Transport Canada and Fisheries & Oceans Respecting Marine Transportation Safety & Environmental Protection (May 1996) Annex D – E-5 states that "Transport Canada and Fisheries and Oceans will jointly approve salvage operations, emergency lightering or discharge of cargo." After discussing this clause with two senior surveyors, they both agree – Marine Safety does not approve salvage plans. Marine Safety advises and recommends only.
- Restriction of transit or movement of a vessel following a damage assessment.
- Spill investigation and enforcement of the various aspects of the pollution prevention conventions and legislation in Canada
- Regional planning, in conjunction with EC and CCG, for the selection of Places of Refuge. Note: in the Great Lakes and connecting channels, selection of a place of refuge will be determined in conjunction with the USCG and USEPA.
- Monitoring of the spill preparedness activities of Oil Handling Facilities (OHFs) and certified Response Organizations (ROs) through a review and audit process.

Indian and Northern Affairs Canada (INAC)

Canadian Coast Guard (CCG) works most closely with INAC in Nunavut (NU) and the Northwest Territories (NT). INAC has lead responsibilities in the Arctic for spills on water which do not originate at federal facilities, exploration facilities or from ships and barges. INAC also, by letter of agreement, will investigate ship-source spills on behalf of CCG. INAC is also a member of the Beaufort Sea Emergency Preparedness Working Group, along with CCG/DFO, EC, TC and other appropriate agencies.

National Energy Board (NEB)

Based in Calgary, Alberta, the National Energy Board is an independent Agency that reports to parliament through the Ministry of Natural Resources. The NEB is the

Lead Agency for spills that occur at offshore and nearshore oil and gas exploration and production facilities.

In the event of a marine pollution incident where CCG is requested for assistance as a resource agency, CCG is available to provide pollution response expertise as indicated under Section 7.2 of the *National Response Plan* as it relates to NEB.

Public Safety Canada

Public Safety Canada is the federal coordinating department responsible for engaging relevant federal departments in an integrated Government of Canada response to an emergency.

For emergencies requiring an integrated Government of Canada response, federal support is based on a regional "single- window" concept. This concept is intended to facilitate regional interdepartmental and intergovernmental coordination, while not unduly restricting operations. Coordination includes sharing of pertinent information in order to maintain situational awareness.

The Government Operations Centre (GOC) is a 24/7facility where an integrated Government of Canada response is managed. It is the focal point of information management flow and provides strategic-level activities. It's permanent staff includes watch officers, duty officers specializing in national communications as well as a geomatics team to map incidents.

Indirect support from other federal departments in the form of advice or resources also comes from: Heritage Canada (Parks Service) in the form of support to REET, National Defense regarding assistance and resources, RCMP with respect to investigations and those sections or departments specifically identified in the various Memorandums of Understanding (MOU) as outlined in Section 2 of this chapter.

3.5 External Partners - Provincial and Territorial Ministries and Departments

In general, liaison with provincial and territorial concerns is facilitated through REET (Regional Environmental Emergencies Team), which is chaired by Environment Canada (EC) or, in the case of the Province of Ontario, is co-chaired by Environment Canada and the Ontario Ministry of the Environment (MOE). The following agencies have the primary mandate for marine or freshwater pollution response in their province or territory of jurisdiction:

Territory or Province	Department
Northwest Territories	Environment and Natural Resources
Nunavut	Department of Environment
Alberta	Alberta Environment
Saskatchewan	Saskatchewan Environment

Manitoba	Manitoba Conservation
Ontario	Ontario Ministry of the Environment

In emergency situations conflicts sometimes arise with respect to legal and administrative jurisdiction and application of standards and common practices. To facilitate these issues the various Ministries related to emergency measures are usually contacted to provide coordination and clarify where necessary the concerns. These include:

- Government of Nunavut – Department of Community of Government Services, Emergency Management Division
- Government of the Northwest Territories – Department of Municipal and Community Affairs – Emergency Services Division
- Government of the Yukon Territories – Department of Community Services, Emergency Measures Organization
- Government of Ontario - Ministry of the Community Safety & Correctional Service, Emergency Measures Ontario
- Government of Manitoba –Manitoba Emergency Measures Organization
- Government of Saskatchewan – Resource Management and Corrections & Public Safety, Saskatchewan Emergency Measures Organization
- Government of Alberta – Ministry of Municipal Affairs, Public Safety Division, Emergency Management Alberta

Provincial Governments can provide consolidated access to local, municipal and provincial resources.

Central & Arctic Region recognizes that First Nations have a vested interest in response operations that may occur in their territory and will ensure that they are represented on the REET or have access to the Federal Monitoring Officer or On Scene Commander through the CCG Liaison Officer.

3.6 Clients

With respect to ship-source pollution incidents, there are three major groups the Canadian Coast Guard will be directly engaged with. These are Oil Handling Facilities, Legislated Ships and Ships as defined in *Part XV* of the *Canada Shipping Act.*

Oil Handling Facilities (OHF)

Operators of facilities that transfer oil to or from oil tankers over 150 gross registered tonnes or other vessels over 400 gross registered tonnes are required by the Canada Shipping Act (2001) to:

- Have an Oil Pollution Emergency Plan (OPEP) on site.
- Have a declaration conforming to the regulations on site.
- Take reasonable measures to implement their required oil pollution emergency plan in the event of an oil pollution incident.

- Have on site the resources required to contain a spill of oil equal to the facility's rated capability within one hour.
- Begin recovery/cleanup operations of oil equal to the facility's rated capability within 6 hours.
- Have an arrangement with a certified Response Organization (RO) that permits the handling of spills beyond the rated capabilities of the Oil Handling Facility.[1]

Legislated Ships

In Canadian waters, ships over 400 gross registered tonnes and oil tankers over 150 gross registered tonnes are required to have a Shipboard Oil Pollution Emergency Plan (SOPEP) and an arrangement with a certified Response Organization (RO) to respond to an oil pollution incident of an amount equivalent to the maximum amount of product that the vessel can carry as fuel and/or as cargo up to a maximum of 10,000 tonnes.[1]

Other ships as defined by Part XV of the Canada Shipping Act (CSA)

Any ship that is less than 400 GRT or any tanker less than 150 GRT is still covered by the *Canada Shipping Act (2001)* in that it must report the potential or actual pollution incident to a Pollution Response Officer, or in the case of an incident in Canadian Arctic Waters as defined by the Arctic Waters Pollution Prevention Act to a Pollution Prevention Officer. The ship must take immediate steps to mitigate or remedy the situation. These ships are not required to have a Shipboard Oil Pollution Emergency Plan nor an arrangement with a certified Response Organization.

3.7 External Resources

There are two main categories of external resources that the Canadian Coast Guard (CCG) will engage. These are the Response Organizations certified by Transport Canada under the *Canada Shipping Act (2001)* and other contractors.

Response Organizations (ROs)

Response Organizations are privately established pollution response companies certified by Transport Canada. These companies hold a certificate of designation to handle oil spills of up to 10,000 tonnes (T). Response Organizations can provide the polluter or any lead agency with the resources, trained personnel and operational management structure to deal with a marine oil pollution incident within its identified Geographical Area of Response (GAR).

The Eastern Canada Response Corporation (ECRC) is the only certified response organization in Central & Arctic Region. The company is certified to ten thousand tonnes (10 000T) and two of its three regions cover Central & Arctic Region.

[1] There is no requirement for an Oil Handling Facility nor a Legislated Ship to have an arrangement with a Response Organization certified by Transport Canada in Canadian waters north of 60° North Latitude

1) ECRC Great Lakes Region is managed from the Response Centre in Corunna, Ontario. Its area of coverage includes all waters
   - south of 60 degrees north in the provinces of Alberta, Saskatchewan, Manitoba and Ontario to that portion of the St. Lawrence River in the Province of Ontario
   - to a line drawn between Butternut Bay (Latitude 44 31' 12" north and Longitude 75 46' 54" west) on the Canadian side
   - to Oak Point (Latitude 44 30' 48" north and Longitude 75 45' 20" west) on the US side of the St. Lawrence River.

2) ECRC Quebec Region (also known as Societé d'Intervention Maritime Est du Canada - SIMEC) is managed from the Response Centre in Quebec City, Quebec and has staffed Response Centres in Verchères, Quebec and in Sept-Iles, Quebec. Their coverage includes:
   - James Bay, Ungava Bay and in Hudson Bay south of the sixtieth parallel North and that portion of the St. Lawrence River in the Province of Ontario
   - to a line drawn between Butternut Bay (Latitude 44 31' 12" North and Longitude 75 46' 54" West) on the Canadian side to Oak Point (Latitude 44 30' 48" north and Longitude 75 45' 20" West) on the US side of the St. Lawrence River.

There are no certified response organizations established north of 60° N latitude.

Although resources from the Response Organizations in the south may be made available for use north of 60°, they must obtain the necessary approvals to move equipment from their designated area of response.

Contractors

Private sector contractors may be engaged by the CCG as required. All standard government contracting rules apply.

Section 4 – PREPAREDNESS

4.1 Overview

Oil spill preparedness is defined by the advanced planning used to create systems to effectively and efficiently combat the range of spills likely to be encountered.

In Central and Arctic Region, preparedness involves:

- The development of regional procedures to be followed in the event of an incident, coordinated by the Planning section.
- The implementation, training and maintenance of the Response Management System (RMS) to manage and combat the incident.
- The identification of priorities, development of strategies, logistics and tactics necessary to fulfill those priorities, lead by the Planning section.
- The liaising with internal and external partners, clients and resources that may be involved in pollution response activities, lead by the Planning section.
- The training and continued maintenance and upgrading of skills, coordinated through the Training specialist.
- The exercising and quality assurance activities required to continuously reinforce the training and contingency planning activities, facilitated through the Exercise specialist.
- The asset management including the acquisition, lifecycle maintenance, operational readiness and storage of equipment lead by the Operations section and Inventory specialist.
- The integration of other Canadian Coast Guard Assets and Human Resources, when necessary, through the Training and Exercising processes.

The Memorandum of Understanding (MOU) between the Director General/Maritime Services (MS) and the Director General/Integrated Technical Support (ITS) of the Canadian Coast Guard (March 2004) specifies that the ITS Directorate will be the single CCG focus for the life cycle management of all CCG physical assets and for the development of all technical solutions. It is unknown when ITS will assume the services of design, procurement, in-service support and disposal of all equipment and systems required to satisfy ER's mandate. In the interim, ER will remain the focal point.

4.2 Response Management System (RMS)

The Canadian Coast Guard uses the Response Management System (RMS) as its emergency management system. It is based on, and operates under the same principles as the Incident Command System (ICS) which was developed in the U.S. to coordinate multi-agency responses to large forest fires. The system was adjusted to reflect the current marine oil spill response regime and Canadian law. The Canadian Coast Guard does not implement the ICS principle of unified command, but will participate in any command structure used by the Polluter or Other Lead Agency.

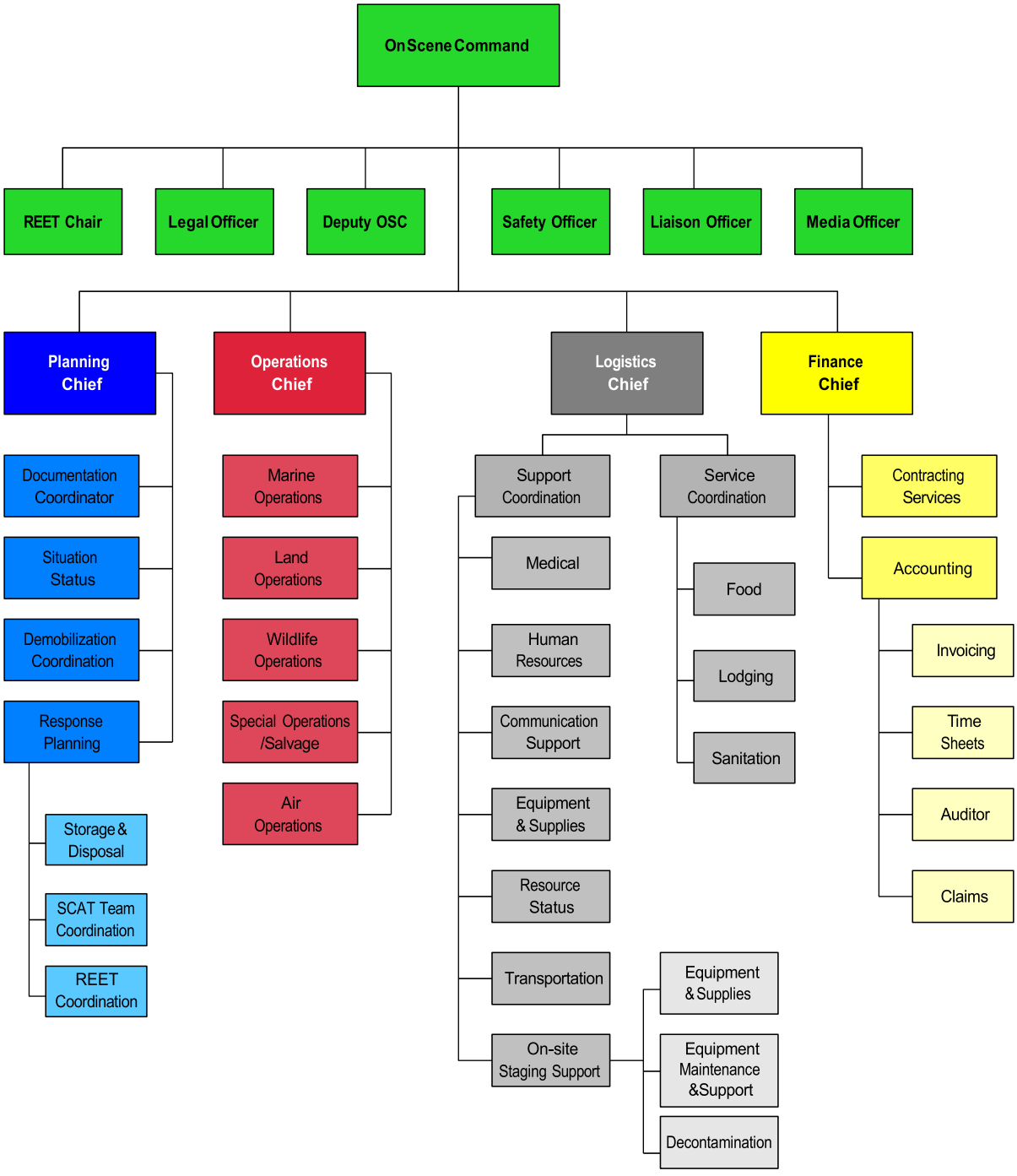
The RMS uses a “management by objectives” approach. It outlines the roles and responsibilities of individual positions, identifies the reporting structure, establishes a common set of terminology and uses standardized forms and paperwork. The central document in the RMS process is the Incident Action Plan, which documents the existing conditions and outlines objectives and strategies for recovery and response.

The system structure is designed to expand or contract to best fit the specific circumstances of the incident. Not all positions within the system will be staffed for every incident; in those cases the supervising position shall be responsible for all subordinate tasks/roles. Regional staff members have been designated as members of the Regional Response Team and may be called upon to fill specified roles in this management system (see Figure 4.1 for a fully expanded system design).

The system also contains management tools that can be used by the On Scene Commander and response personnel to better manage the system and the spill incident. These tools include a field operations guidebook, forms, reports, established meeting schedules and agendas. The RMS will also be used by the Federal Monitoring Officer and their Incident Monitoring Team while monitoring the Polluter’s response to an incident.

The detailed RMS process is contained in a separate document referenced in Section 9.1 of this plan (Response Management Systems User’s Guide, Version 3.0 (May 2006)).

Figure 4.1 - CCG RMS Command Structure



4.3 Planning

Area Plans

To facilitate an effective and efficient response, Canadian Coast Guard administers 16 area plans as an annex to the Central & Arctic Regional Response Plan. They are Keewatin, Baffin, Beaufort Sea & Amundsen Gulf, Great Slave Lake, Hudson & James Bay, Kitikmeot, Mackenzie River & Delta, Inland Waters S of 60, Lake Erie, Lake Huron, Lake of the Woods, Lake Ontario, Lake Superior, St. Lawrence, St. Mary's and St. Clair & Detroit areas. These plans incorporate detailed response information for specific manageable geographic areas or response communities. The normal operating period for an area plan is the first 12-24 hours of a spill response.

They are developed and maintained as follows:

1) Risk Analysis
   The risk analysis determines which communities or areas are most likely to be endangered by a potential oil spill and why, their associated environmental sensitivities, plus the typical type of spill that could be expected. When considering the environmental sensitivities, the focus is on what is most likely to be impacted and to consider as many factors as are applicable. A single factor discovered in the risk assessment is just one of many layers in the decision to make a site a priority.

2) Priority Identification/Verification
   Current priorities are discussed with members of the Regional Environmental Emergencies Team (REET) at planning meetings. It provides the opportunity for additions, deletions or modifications. Where there are no REET meetings held, community consultations are organized by the Planning section.

3) Strategy and Tactics Development
   Canadian Coast Guard determines RMS objectives for the agreed upon priorities. Strategies are designed, that name the activities relative to those objectives. Those activities may be response actions to be implemented, or may be the type of resources that could be affected by the spill. For area plan development, tactics provide the detail for implementing the selected strategies. Tactics then specify the resources, both human and equipment, to facilitate, to install or to maintain the strategy.

4) Updating
   Area plans are reviewed and updated annually.

Regional Procedure Development

Regional procedures for notification, verification, activation and cost recovery of a response are all described in the *Central & Arctic Regional Response Plan* of the *Canadian Coast Guard National Response Plan*. Supporting documentation in the

form of Standard Operating Procedures and supplementary plans (e.g. Health & Safety Plan and Media Relations Plan) are not included in the Regional Response Plan but are referenced in Section 9.

Liaison with External and Internal Partners, Clients and Resources

To ensure that all partners, clients and resources are aware of the Canadian Coast Guard's mandate and responsibilities as they pertain to pollution preparedness and response, the Environmental Response Planning Section takes the initiative to:

- Work with Internal Partners within Fisheries & Oceans to communicate the branch's needs in the event of a pollution incident.

  Exception: Coordination of the Duty Officer (DO) function between Environmental Response (ER) and the Regional Operations Centre (ROC) is coordinated by the Regional Emergency Operations Officer REOO).
- Work with other government departments that have a mandate for pollution response within their jurisdiction to communicate the role that Canadian Coast Guard plays in marine and freshwater pollution incidents and to share what resources Canadian Coast Guard maintains for pollution response activities and the mechanism to access these resources in the event that another Lead Agency may require them for a non-CCG mandated spill or other type of emergency.
- Liaise with potential clients (oil handling facilities, shipping companies and other operators) so that CCG expectations in the event of an incident are understood.
- Provide copies of area plans to CCG vessels that are relevant to their area of operations. CCG ER will brief Operations at the pre and post season conferences on any changes to the plans and/or to the captain and/or crew's responsibilities.
- Maintain a network of contractors that can provide services to Canadian Coast Guard in the event of a pollution incident that exceeds the resource capability of the region.
- Upon request of the Regional Advisory Councils (RACs) or Secretariat (Transport Canada) on Marine Oil Spill Response, provide information on Central & Arctic Region's preparedness and spill response activities.

Arctic Community Emergency Plans

The Canadian Coast Guard is committed to assisting Arctic communities in the development of the marine pollution component of their Community Emergency Plans. This commitment was made in 1999 when the CCG Arctic Response Strategy (ARS) was published. The Arctic Response Strategy has since been re- assessed and viable components have been incorporated into the text of this Plan.

4.4 Training Program and Curriculum

Introduction

The Training Curriculum of the Environmental Response Branch is focused on providing the necessary skills and knowledge for responders to function effectively during a spill response operation. As the competencies required for an effective spill response are described and organized within the Response Management System (RMS), so too can the training curriculum be described in the context of RMS.

With RMS as the framework for spill response, all response team members will be trained in theory and application of RMS. The level of training complexity will vary by level of individual responsibility, but all members will have fundamental knowledge of the structure and processes that drive the RMS.

In addition to the training curriculum described in this section, it is understood that there are competencies and certifications required that are not specific to ER or spill response. These would include driver's licenses, radio operator's licenses, and familiarity with basic electronic equipment such as phones, fax machines, cell phones and laptop computers.

Training Curriculum

Command Staff

During a spill response operation, the command staff will vary depending on the size and complexity of the spill.
On a smaller spill, senior ER staff members may be appointed to command positions with few subordinate or supporting positions.
On larger scale spills, the OSC may be the Director of Maritime Services, or Assistant Commissioner Canadian Coast Guard, with multiple support positions from ER staff, CG fleet, base personnel and contractors.

To adequately prepare personnel for the management functions of spill response, the following curriculum has been identified:

On Scene Command Course (OSC)
This course trains participants in all aspects of spill response including planning, implementation, and supervision. Other topics include legislation, legal issues, financial responsibilities, and media relations. Prerequisites include BOSRC, MSROC, PPO designation, media relations and management training.

Response Management System Course (RMS)
The current RMS curriculum is an introductory two-day course on the system and its user's guide. It is anticipated that future development will include multiple levels of training which will include organizational structure and

responsibilities, as well as in-depth requirements of each position within this emergency management structure.

Federal Monitoring Course (FMO) - Proposed
Subject to national development, this course will augment the On Scene Command Course to provide those persons designated as Canadian Coast Guard Federal Monitoring Officers the necessary skills and knowledge to perform FMO duties.

Operations Section

During a spill response operation, the operations section of the RMS may be populated by regional ER staff, CCG fleet officers and crew, CCG/DFO base personnel or contractors. The resident knowledge of this group will vary, and a comprehensive ER training program exists to train responders in spill response operations. Training for members of the CCG Regional Response Team (RRT) personnel is offered in the following three areas:

(a) Safety Training
(b) Operational Training
(c) Specialty Training

(a) Safety Training

Health and Safety training is required to ensure compliance with federal and provincial legislation with the ultimate goal of ensuring the health and safety of response personnel. Additional video and printed reference material is available through the Canadian Coast Guard ER Training Officer.

Site Safety Course
The Site Safety Course is designed for response personnel prior to commencing work on a response site. Topics include employer and employee responsibilities, classification and hazards of petroleum products, and the safety practices and considerations associated with both water-based and shore-based operations. Site safety training is mandatory for Regional Response Team members and all volunteers or short time workers who may be employed during a response.

Workplace Hazardous Materials Information System (WHMIS)
This 3-hour course is provided to Canadian Coast Guard employees to ensure compliance with appropriate worker safety legislation. It was developed to ensure workers have the necessary information to work safely with hazardous materials in their workplace.

First Aid/CPR
This 16 hour course provides the participants with the skills and knowledge to successfully obtain the St. John Ambulance Standard First Aid Certificate. The primary focus of this 14-hour course is to provide adequate knowledge

and level of skill to persons in positions of responsibility to provide for persons suffering from respiratory and circulatory arrest. Preventative measures are discussed.

Small Non-Pleasure Vessel Basic Safety Course - MED A3
The 8-hour MED A3 course is *required by regulation* for crewmembers of small non-pleasure vessels of not more than 150 GT operating not more than 20 miles offshore. Topics include marine hazards and emergencies, marine firefighting, lifesaving appliances and abandonment and survival and rescue skills.

Transportation of Dangerous Goods (TDG)
This 6-hour course provides personnel with the responsibility for the transportation of dangerous goods to be aware of and comply with safety measures and appropriate legislation concerning TDG.

(b) Operational Training
There are various levels of oil spill response courses designed for response team members, ships crews and other responders who may be expected to assist with marine oil spill response. Operational training related to the assessment and response to petroleum spills is delivered by ER while training for response to hazardous and noxious materials spills is obtained outside of the Branch.

First Responder Oil Spill Training (FROST)
This 1 day course is designed specifically for CCG personnel in Central & Arctic Region who are designated custodians of First Response Units (FRUs), and may be tasked with deployment of the pollution countermeasures equipment. It has also been adapted for use in communities north of 60° where Arctic Community packs function as first response units.
It teaches First Responders to:

- assess an oil spill according to its extent, possible source and likely behavior
- deploy boom for containment and protection purposes and in support of response activities
- work safely at the spill site

Basic Oil Spill Response Course (BOSRC)
This 20 hour course instructs First Responders how to:

- assess an oil spill according to its extent, possible source and likely behavior
- deploy boom for containment and protection purposes and in support of response activities
- operate oil recovery equipment
- undertake basic shoreline cleanup operations
- work safely at the spill site

Marine Spill Response Operations Course (MSROC)

This 40-hour course will enable trained and experienced personnel to coordinate and supervise the response operations of a marine oil spill. It is intended to train individuals to be On Scene Commander (OSC) for small (tier 1) spills, or operations section chief on larger spills. Topics include legislative framework, safety, equipment suites and strategies, media relations, RMS, shoreline assessment and cleanup techniques, and disposal. Prerequisites include BOSRC, a Radio Operator License and current or future deployment to a spill response team.

Environmental Response Duty Officer (ERDO) Training

This 15 hour course is a prerequisite for duty officers for the ER branch and the regional operations centre. It introduces the participant to CCG mandate, lead agency responsibilities and introductory spill assessment techniques. It also integrates delivery of training on the Marine Pollution Incident Reporting System (MPIRS), the database used to capture spill report and response information.

Pollution Response Officer (PRO) Training

This three day course is currently provided by the Environmental Response Branch of the Canadian Coast Guard and is required training for all Environmental Response personnel. Participants who successfully complete this course earn the designation of Pollution Response Officer under Part 8 of the Canada Shipping Act (2001). This course examines the powers of a PRO, specific procedures related to vessel directions and detentions and the legal framework and implications surrounding the execution of those powers. Course participants also learn sampling procedures and gain an understanding of the role of other government agencies involved in a marine pollution incident.

Pollution Prevention Officer (PPO) Training

This 40 hour course is currently provided by the Marine Safety Branch of Transport Canada. It is a prerequisite for any officer of the Canadian Coast Guard to be delegated Pollution Prevention Officer (PPO) powers under the *Arctic Waters Pollution Prevention Act*. Participants learn the existing pollution prevention and response regime, the powers of a PPO and the specific tasks of prevention, control, investigation and prosecution.

Small Vessel Operator Proficiency

This 21-hour course meets the training needs of the small vessel master. This course is required by regulation (for vessels less than 5GT on sheltered and near coastal voyages) and teaches participants to effectively manage safety of those on board, protect the vessel from damage and protect the marine environment.

Basic Barge Operator Training
This course was developed and is delivered by regional ER staff. Through both classroom and practical sessions, the course introduces participants to safe boating practices and procedures, rules of the road, collision regulations, load plans for pollution response vessels, safe deployment of oil spill response equipment and basic trailer towing and maneuvering.

Single Side Sweep System
The single side sweep is an equipment suite designed to allow one vessel to perform oil containment and recovery, and allow for temporary storage. This two day training session is provided to some ER staff and crews of Canadian Coast Guard vessels that can support this equipment. This training typically is conducted with crews who have previously completed BOSRC.

HAZMAT Awareness
This 6-hour course is intended for First Responders on the scene of a hazardous materials incident and shows how to assess the incident. Topics include; First Responder's role and responsibilities, scene safety, recognizing and identifying hazardous materials, incident management, and sources of assistance.

HAZMAT Technicians Level
This 40-hour course is designed for responders to releases or potential releases of hazardous substances. The focus is on recognizing and evaluating a hazardous materials incident, organizing the response team, protecting response personnel, identifying and using response resources, implementing basic control measures, decision-making, and protecting the public and environment. Emphasis is on hands-on use of equipment practically applying lecture information through exercises. Participants will wear fully encapsulating suits.
Prerequisite: Hazmat Awareness.

(c) Specialty Training
Specialty training includes training that only select members of the Regional Response Team (RRT) will have to apply.

Shoreline Clean up and Assessment (SCAT)
This 24-hour course covers how oil impacts the shoreline. Specific topics include shoreline types and effects of oil, wind, waves and ice on shorelines. Shoreline protection and cleanup methods are described in depth. Field exercises are conducted as part of the training.

Media Training
This 16-hour course is designed to provide participants with the skills and knowledge to communicate effectively and proficiently with various forms of media. Topics include; developing and disseminating incident information to

news media, incident personnel, other appropriate agencies and organizations.

Communications System Training
This 8 hours hands-on course provides participants with the knowledge and skills to provide communications in support of a spill response. Topics include; mobile telephone, fax, and intercom set up, preparing communication plans, and internal/external spill response communications.

Wildlife Rehabilitation
The capture and treatment of oiled wildlife is typically assigned to the trained experts at Canadian Wildlife Service (CWS). This CWS training is periodically made available to outside agencies, and some ER staff may participate to facilitate a better understanding of each others' role at the time of a spill.

Financial Management
This training is provided by the Public Service Commission (PSC) and teaches government spending and cost accounting principles. It is imperative that any response team member who may have to purchase assets or manage contracts be familiar with these practices and procedures.

Planning Section

During a spill response operation, the planning section of the RMS will likely be populated with ER staff whose substantive positions are as Planning Officers within the branch. Therefore, the planning skills and training required to effectively and efficiently perform these tasks should be resident within our branch staff.

Should additional personnel be required to fulfill these roles, they would require training in RMS, as well as Site Safety (as required by OSH regulation). The required planning skills and spill response knowledge may be acquired through various training or experience factors, and would be assessed prior to assignment on the response team. In addition to planning skills, preferred training might include SCAT, FROST and/or BOSRC, and MSROC.

Logistics Section

During a spill response operation, the logistics section of the RMS will likely be populated with ER staff whose substantive position involves the tracking of spill response equipment inventory and human resources within the region. Therefore, the skills and training required to efficiently and effectively perform the logistics function should be resident within our regional ER staff.

Should additional personnel be required to fulfill these roles, they would require training in RMS, as well as Site Safety (as required by OSH regulation). The required logistical skills may be acquired through various training or experience factors (knowledge of IRCMS and TMA, BOSRC training) and would be assessed prior to assignment on the response team.

Finance Section

During a spill response operation, the finance section of the RMS will likely be populated by regional finance staff whose substantive positions involve government expenditure and cost accounting knowledge and application. Therefore, the skills and knowledge required to effectively and efficiently perform the finance function should be resident within regional Canadian Coast Guard staff. These personnel will require RMS and Site Safety training prior to deployment on a spill response team.

Training Records

Records for personnel trained in spill response and/or emergency management are maintained by the Region.

4.5 Exercise Program

Introduction

Under the guidelines of the National Exercise Program (NEP), the Environmental Response Branch will implement a Regional Exercise Program. This program will be conducted over a three-year cycle. Coordination of the program will be the responsibility of the Regional Exercise Officer (RXO) of the Environmental Response Branch. Exercises will be designed and conducted in coordination with departmental staff, CCG base staff and CCG vessels on a regular basis. The purpose of the Regional Exercise Program is to validate environmental response training and regional emergency preparedness standards, policies and procedures.

Canadian Coast Guard will, through regional and area-specific exercising, ensure high priority initiatives such as exercising complex equipment (i.e. Lori Brush skimmers, sweep systems and command/communications facilities) are undertaken and will use industry and private sources of personnel where possible and/or appropriate.

Exercise Planning Matrix

The matrix below represents a typical three year exercising cycle followed by Canadian Coast Guard. The program cycle is designed to test all 17-response functions as outlined under NEP as well as including the different types of exercises. It includes internal, external (with other government departments as well as private sector organizations) and international exercises.

Table 4.1 *- Central & Arctic Region Exercise Matrix*

EXERCISE TYPE	YEAR1	YEAR2	YEAR3
Notification	**Quarterly**	**Quarterly**	**Quarterly**
Management	**2**	**2**	**2**
Operational drills	**3**	**3**	**3**
Combined Functional	**1**	**1**	**1**
Full Scale	**0**	**1**	**0**

Notification exercises will test the regional call-out system. Some of these exercises will be internal to the branch, some will be a full regional call-out to all CCG and DFO staff as well as to external resources (eg: freight contractors to check their availability to move Marine Emergency Response Trailers (MERTs) or First Response Units (FRUs).

Management exercises will focus on the development of the spill through the Response Management System (RMS).

Operational Drills will focus on equipment deployments in packages (i.e. a First Response Unit, NOFI V-Sweep).

Combined Functional exercises will be an equipment deployment (operational drill) with the goal of implementing a tactic designed in one of the Region's Area Plan Annexes.

A *Full Scale* exercise will incorporate a management-type exercise with the concurrent deployment of a spill countermeasure system (system = pollution containment, recovery, primary and secondary storage devices)

Exercising Partnership

Canadian Coast Guard will endeavor to participate, by request and on a situation by situation basis, in exercises lead by Oil Handling Facilities (OHFs), certified Response Organizations (ROs) and other government agencies throughout the Region.

Central and Arctic Region is a part of the Canadian Coast Guard response community and as such is also part of the International Response Community. Canadian Coast Guard's regional boundaries are in such close proximity with our United States neighboring response communities that joint exercising is a high priority. Specifically this region conducts joint exercises in the geographic areas of the Great Lakes and the Beaufort Sea with the United States Coast Guard's (USCG) (9^{th}) ninth (Great Lakes) and (17^{th}) seventeenth (Alaska) districts, respectively.

Exercise Evaluation and Shared Learnings

An important part of the National Exercise Program is the evaluation and use of subsequent findings. Four types of information can be learned from an exercise, all of which lead to improvement of overall response capability.

1) Contingency planning
2) Response techniques
3) Response training
4) Exercise program development

The primary sources of the information and learning will be the formal exercise evaluation report that is produced for every exercise by the evaluation team. This formal exercise report will follow the format laid out in Section 11 of the *Canadian Coast Guard National Exercise Program Planning and Evaluation Guide*.

4.6 Inventory Management, Maintenance and Infrastructure

Inventory Response Control Management System

To ensure that a nationally consistent and effective state of preparedness is maintained, an Inventory Response Control & Management System (IRCMS) has been implemented which utilizes The Management Authority database as its main tool. CCG HQ administers this system in concert with regional IRCMS Officers. In this region the program is administered by the Logistics and Statistics Officer in the Operations Section.

This system has been developed to:

- Maintain a real time record of the location and quantity of resources;
- Maintain a proper state of readiness through a pro-active approach using work orders and preventative maintenance;
- Assist in keeping response managers informed about Environmental Response's state of preparedness;
- Assist in the tracking of National Response Team personnel or equipment assigned to National or International incidents

Pre-positioned Equipment Caches and Depots

Central and Arctic Region covers an extremely large geographical and culturally diverse portion of Canada. There are, in essence, two zones of operation which are entrenched in the *Canada Shipping Act*. These are:

- the Arctic Zone, or all areas of Canadian jurisdiction north of 60^0 North Latitude; and
- the Central Zone, dominated in a marine transportation sense by the Great Lakes, but which include the southern portions of Hudson and James Bay, along with the major waterways and watersheds of Lake Winnipeg, Winnipegosis, Lake of the Woods, and Lake Athabasca.

The Environmental Response (ER) Branch has pre-positioned equipment to facilitate and maintain an effective response operation. Response strategies in each of the two zones (Central or Arctic) are based upon identification of local and regional response. This is means that the equipment generally required for such a spill size is contained within the Region. This capacity is supplemented by nationally available resources, which would be "cascaded" from/to other regions when and if required. Preparedness capacities in other regions are identified in their respective Regional Response Plans.

Arctic Zone

Arctic Community Packs (ACPs) are placed in northern communities for rapid (local) initial response. Canadian Coast Guard provides initial response training to members of the communities so that they may effectively deploy equipment in the ACPs in the event of a spill. Access (keys) for the ACPs have been given to an official in each community in most cases. The Senior Response Officer (ER-Hay River) maintains the current key holder listing.

The inventory for each Canadian Coast Guard Arctic Community Pack location is listed in Table 4-2. The program has received funding under the Health of the Oceans Initiative to proceed with placing Arctic Community Packs in additional sites. The equipment profiles at the existing Arctic Community Pack sites will be changed to reflect characteristics of the community. The inventory at all communities will be "site specific" and will coincide with response strategies designed by the ER planning group. The locations for the proposed additional Arctic Community Packs are: Baker Lake, Broughton Island (Qikiqtarjuaq), Chesterfield Inlet, Churchill, Hall Beach, Kimmirut, Iqaluit, Pangnirtung, Tuktoyaktuk and Yellowknife.

The main base of operations with Environmental Response dedicated personnel is located in Hay River, Northwest Territories. This base is home to a Rapid Air Transportable (RAT) cache of equipment known as the "RAT150". The RAT150T used in conjunction with the "Delta" (Δ) 1000T meets planning standards for a 1000 tonne (T) response. The selection of equipment for the RAT150 must meet pumping rates / capacities of 1000T thresholds and be complimentary[2] to the equipment held in the Δ1000T depots.

The response package, warehoused in Hay River, will be maintained in 100% readiness during the shipping season. The equipment will be broken down and be containerized such that it will fit through the smallest cargo door of any of the selected aircraft. Equipment will be TDG compliant, be palletized as appropriate, and labelled for ease of selection and loading.

[2] The logistics of moving large bulky items (ISO containers) in the arctic necessitates a LCM, deck barge, cargo vessel, icebreakers or any combination thereof. Consequently it is estimated that the 1000T design capacity would be available staged on-scene in 5 - 7 days. Following the doctrine *something sooner rather than everything later* having 150T of the 1000T equipment suite air-lifted within 48 hours is preferable to having nothing until the entire 1000T capacity arrives a week later.

Table 4-2 *- Canadian Coast Guard Arctic Community Pack Locations*

LOCATION	EQUIPMENT SUMMARY			
	Boom (24")	**Skimmers**	**Boats**	**Storage**
Arctic Bay (Ikpiarjuk)	3,650'	TDS-118	16' Aluminum	Open top Tank
Cambridge Bay (Ikaluktutiak)	1,350'	TDS-118	16' Aluminum	Open top Tank
Cape Dorset (Kinngait)	1500'	TDS-118	16' Aluminum	Open top Tank
Clyde River (Kangiqtugaapik)	4,500'	TDS-118	16' Aluminum	Open top Tank
Coppermine (Kugluktuk)	1,350'	TDS-118	16' Aluminum	Open top Tank
Coral Harbour (Salliq)	1,500'	TDS-118	16' Aluminum	Open top Tank
Gjoa Haven (Uqsuqtuuq)	1,350'	TDS-118	16' Aluminum	Open top Tank
Holman (Ulukhaktok)	1,500'	TDS-118	16' Aluminum	Open top Tank
Rankin Inlet (Kangiqsiniq)	2,200'	TDS-118	16' Aluminum	Open top Tank
Resolute (Qausuittuq)	1,350'	TDS-118	16' Aluminum	Open top Tank
Hay River FRU +	1,000'	-	37' Seatruck 42' Cutter	-

In combination with the RAT150T, equipment found in the ∆1000T depots will be at a 1000T capacity. Hence, the delta or "∆" is the difference between the RAT150T and a full 1000T. The ∆1000T depots will have containerized heavier equipment (not suitable for air transport to smaller communities) augmenting the RAT150T to a 1000T capacity, ready to be loaded on deck barge, Canadian Coast Guard icebreaker or freighter. While response personnel cascade in to the spill site pre-identified local, CCG base and available ER personnel will mobilize to the centres and load the equipment on suitable marine transport.

Three ∆1000T depots are strategically located in the northern communities of Tuktoyaktuk (NorthWest Territories), Iqaluit (Nunavut), and in Churchill (Manitoba). For the purposes of response in Central & Arctic Region, Churchill is included in the Arctic Zone of operations despite it being south of 60° North Latitude due to the similarities in response characteristics that it shares with locations north of 60° North Latitude.

Table 4-3 *- Canadian Coast Guard Arctic Design Inventory*[3]

PCM equipment	Description	Hay River RAT150T	Tuk Δ1000T	Iqaluit Δ1000T	Churchill Δ1000T
Skimmers	Light to medium product /disk type	3	1	1	1
	Heavy product /weir type	0	2	2	2
Boom	24" river type	0	10000'	10000'	10000'
	24" lay-flat type	5000'	0	0	0
Land storage	4T Open top tank	0	0	0	0
	8T Open top tank	7	3	3	3
	45T shore bladders	3	0	0	0
O/w storage	Total (in 5-25T Seaslugs)	50	250T	250T	250T
Pumps	2" low pres / volume style	4	1	1	1
	4" trash	5	1	1	1
	3" positive displacement	6	1	1	1
Vessels	"Car-topper" + 9.9hp	0	0	0	0
	Seatruck	0	2	2	2
	RAT RHI	2	0	0	0
Generators	5KW gas	7	2	2	2
Pressure washer	Larger hot water type	1	1	1	1
	Small cold water type	3	1	1	1
Incinerator	Sorbent	2	0	0	0
	Liquid waste	2	0	0	0

Central Zone

The Central zone is dominated by the Great Lakes and has well defined road transportation infrastructure.

Local / first response inventories have been established at all regional Canadian Coast Guard shore-side facilities that have fleet assets or a significant number of program vessels and that have operational personnel to deploy the equipment. Standardized inventory consists of a 20-24' trailer with a 1000' (nominal) of 24" boom and related accessories.

The 2500T Rapid Road Transportable cache is centred around the St. Mary's River and from time to time in major CCG facilities in Ontario. The response package warehoused in a series of 45' transport trailers will be maintained in 100% readiness during the shipping season. The primary purpose of the RRT 2500T system is significant containment of resources; shoreline, sheltered, and off-shore sweep and recovery ability; and staging and storage transfer area equipment.

[3] Inventories in Tuktoyaktuk and Iqaluit are at 95% completion. The Churchill Depot is at about 50% (pending the construction of a new and adequate facility) with the bulk of the inventory in storage at the Thundar Bay Coast Guard base. The RAT 150 needs an evaluation of the command and control component as well as storage for the second Saccke burner.

Table 4-4 *Canadian Coast Guard RRT 2500T Design Inventory*

PCM equipment	Description	BOOMERT #1-5 (each)	SKIMMERT #1 and #2[4]	Softside
Skimmers	Light to medium product/ disk type	-	3	
	Heavy product/ weir type	-	1	1
Boom	24" river type	4000'		
Sweep	36" Nofi V-sweep	-		1
Land storage	4T Open top tank	-	7	1
O/w storage	25T Towable bladders	-	4	4
Pumps	3" positive displacement	-	4	1
Generators	5KW gas	-	2	

Table 4-5 *Canadian Coast Guard locations for First Response Units (FRUs)*

Location	Relevant Area Plan(s)	Primary custodian	Secondary custodian
Amherstburg	Lake Erie/St. Clair-Detroit	SAR crew	ITS field services
Cobourg	Lake Ontario	SAR crew	
Gimli	Lake Winnipeg	SAR crew	
Goderich	Lake Huron	SAR crew	
Kenora	Lake of the Woods	ITS field services	
Kingston	Lake Ontario	SAR crew	
Meaford	Lake Huron	SAR crew	
Parry Sound	Lake Huron	ER personnel	ITS field services
Port Dover	Lake Erie	SAR crew	
Port Weller	Lake Ontario	SAR crew	
Prescott	St. Lawrence River	ER personnel	ITS field services
Selkirk	Lake Winnipeg	ITS field services	
Thunder Bay	Lake Superior	SAR crew	ITS field services
Tobermory	Lake Huron	SAR crew	
Hay River	Mackenzie River & Delta	ER personnel	ITS field services

[4] An additional SkimMERT is being added this year to accommodate additional hoses. The exact configuration of each SKIMMERT is not known yet so the inventories will remain listed together for this year.

Section 5 - RESPONSE OPERATIONS

5.1 Pattern of Response

Based upon the principles outlined in the *National Response Plan*, *(Sections 1.3, 1.5 & 4.4),* Central and Arctic Region assesses, notifies relevant parties, and initiates the tasking/deployment of necessary resources. This is based upon the determination of CCG's role as Lead or Resource Agency and the appropriate CCG Posture. The Duty Officer (DO) is tasked with this initial assessment, which is then verified by the Superintendent, Environmental Response. The appropriate response is activated by the Superintendent who in turn assigns an On-scene Commander (OSC) or Federal Monitoring Officer (FMO) and notifies Canadian Coast Guard (CCG) Management. Upon termination of the incident cost recovery actions are undertaken. To illustrate the generic process see Figure 5-1-Typical Sequence of Events and Table 5-1-Typical Functions Descriptions has been provided.

CCG Expectations of Ships for Response

In most instances when a spill occurs the initial report will trigger the mobilization of local response organizations. It is not normally practical for ship personnel to be directly involved in the clean up activities.

Small Spills

Ships are expected to take whatever actions listed in their Shipboard Oil Pollution Emergency Plan (SOPEP) that are reasonable and necessary to prevent the oil from escaping over the side and having done so, to take action to clean-up the oil contained on deck. Spilled oil should not be washed overboard, nor should degreasers or dispersants be used on spilled oil in the water. Once the oil is in the water, the ship's ability to respond in a practical manner is greatly reduced. It is Canadian Coast Guard's expectation that a response organization or other competent contractor be called upon to provide operational response capability at the discretion of the Polluter.

Where there is no availability of local response contractors or where there is a delay in response activation, the Master of the vessel should consider the use of available materials to contain and clean up the spilled oil by, for example, using ship-stocked absorbent material or utilizing mooring ropes or air filled hoses as makeshift booms.

Large Spills

The ship is restricted as to what action it can take to respond to a major spill. In the case of a casualty the safety of the ship and crew take priority. Therefore the ship's actions will be limited to reporting the incident details

to the appropriate authorities and to ensure that a response is initiated. In large spills it is Canadian Coast Guard's expectation that the Polluter appoint an On-Scene Commander (OSC) which may be a representative of the company that owns the ship or the ship's insurer.

Canadian Coast Guard needs to be kept informed as to the escalating response costs accrued by the Polluter during a response in order to prepare for the possibility that the Polluter will cease their response activities once their Limit of Liability is reached.

CCG expectations of Oil Handling Facilities (OHF) for Response

In most instances when a spill occurs, the initial report will trigger the mobilization of the facility response team. It is normal, in most cases, for the oil handling facility personnel to be the initial responders when a spill occurs.

Small Spills

For the purpose of this plan, a small spill will be defined based on the maximum oil transfer rate of the oil handling facility (i.e. what Level it is assigned under the *Canada Shipping Act, 2001),* which directly links to the minimum spill size to which it must be prepared to respond to within one hour. Oil handling facilities are required to have the resources on site to contain a spill of a minimum size within one hour and have the resources required to recover, or where the oil cannot be recovered the resources to control a spill of a minimum spill size within six hours. Response organizations may be called upon to provide additional operational response capability at the discretion of the Polluter.

Large Spills

For the purposes of this plan, any spill above the facility's minimum spill size will be characterized as a large spill. Oil handling facility personnel are still expected to deploy their on-site equipment. Response organizations will likely be called upon to provide additional operational response capability at the discretion of the Polluter.

Figure 5-*1 - Pattern of Response – Typical Sequence of Events*

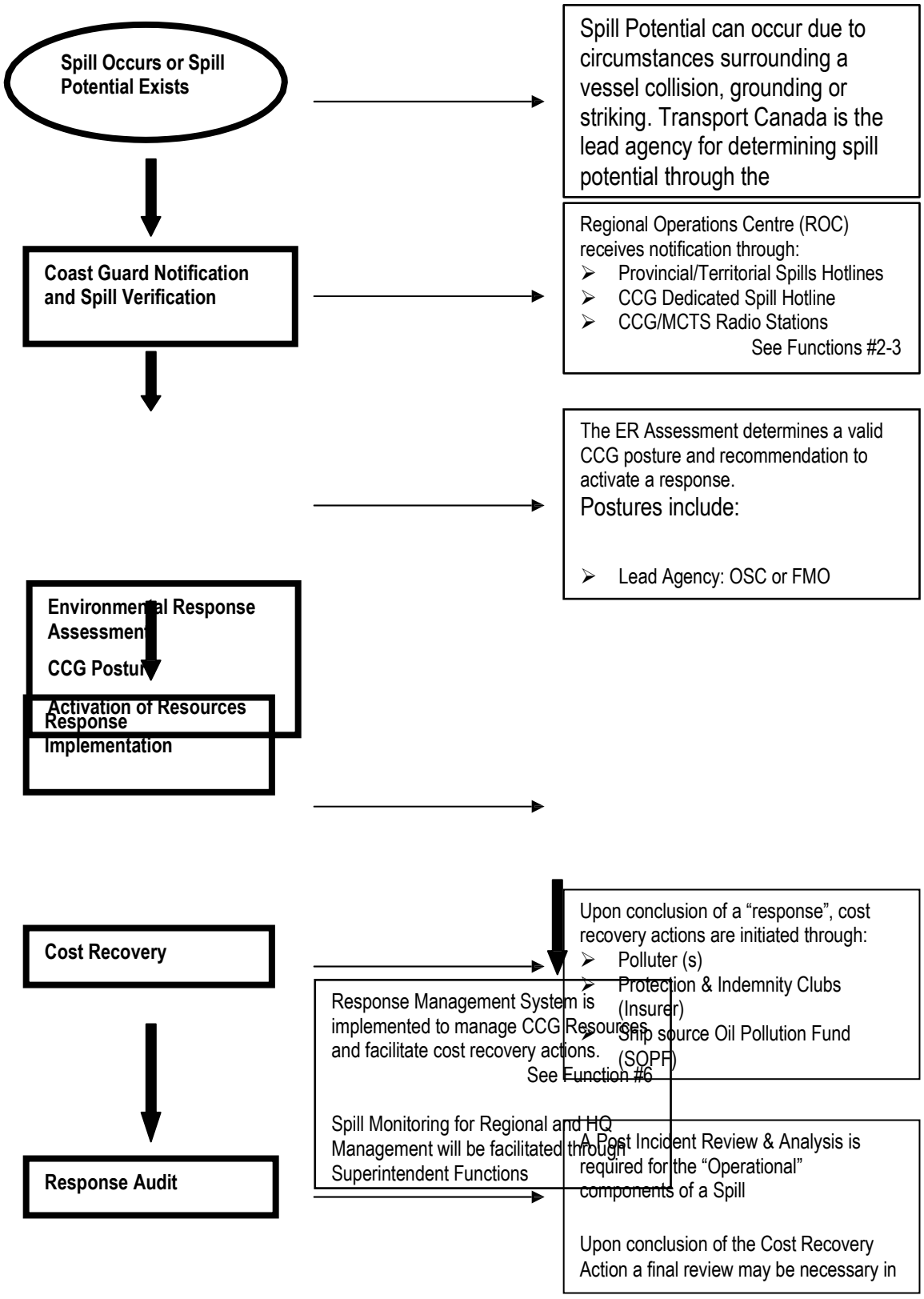


Table 5-1 *- Pattern of Response – Function Descriptions*

Function		***Description***
1	**Responsible Party/Third Party Functions** *(Spill occurs or sufficient potential risk exists)*	• Spill is sighted/reported. Spill reports originate from source (to regulatory body) or by third party (to various emergency or dedicated pollution hotlines) • Transport Canada is responsible for determining potential risk
2	**Spills Hotline Functions** *(Canadian Coast Guard Notification)*	• Assessment for dissemination • Dissemination (fan out according to applicable procedures) to relevant parties, calls from other spill hotlines are received by CCG-ROC.
3	**CCG-ROC Duty Officer Functions** *(Canadian Coast Guard Spill Verification)*	• Spill Assessment-pollution verification ➢ Mandate Confirmation ➢ Pollution Verification ➢ Source Credibility • Notification to ERDO • Dissemination • Initiation of MPIRS
4	**ER Duty Officer Functions** *(Environmental Response Assessment – CCG Posture)*	• Spill Assessment-response analysis • Source Control/Mitigation • Safety Issues • Tactical & Logistical Issues • Recommendation to Superintendent of likely Response Posture • Documentation – MPIRS
5	**Superintendent Functions** *(Environmental Response Assessment – Activation of CCG Resources)*	• Response Posture Evaluation ➢ Potential Risk to CCG Personnel and Equipment ➢ Propriety of request ➢ International Implications • Identification of OSC/FMO • Obtain an Order-In-Council (Arctic) • Obtain a Finance Code & Regional File Number • Notification of Senior Management and ongoing monitoring • MPIRS documentation • Obtain AC CCG sign off on MPIRS situation report
6	**OSC/FMO Functions** *(Response Implementation*	• Management or monitoring of response using the Response Management System (RMS). Escalation or de-escalation in accordance with needs of the incident. • Consolidation of all documentation upon conclusion of the response for Cost Recovery purposes. • Coordinate final debrief to facilitate future improvements to the systems and processes in place.
7	**Chief Financial Officer Function** *(Cost Recovery)*	• Utilizing CCG Ship-source and Marine Pollution Response Costing Principles and Documentation Standards (DFO 6332) compile pollution response costs recovery claim.

8.	**Internal** **Review Team Functions** *(Audit)*	• Utilizing the National Exercise Program Planning and Evaluation Guide, a Team is selected to complete the Post-Incident Review of an incident. • Improvements & corrective actions are to be documented

5.2 Spill Potential or Pollution Risk Assessment

Given an actual spill (i.e. pollutant in the water), the activities specified in this plan are rather obvious. However, in the event of vessel grounding, striking or collision that does not immediately result in a release, the responsibility for determining the risk of pollution rests with a Pollution Prevention Officer (PPO) within the Marine Safety (MS) branch of Transport Canada (TC). Should TC-MS be unable to make that determination, the Canadian Coast Guard (CCG), Environmental Response Duty Officer (ERDO) will complete that requirement. In some cases this may involve engaging a marine architect as no accredited expertise for vessel stability assessment resides within the ER section.

For all other areas where Canadian Coast Guard is the Lead Agency, this activity shall be considered the responsibility of the Canadian Coast Guard, Environmental Response Duty Officer.

5.3 Notification

To facilitate the notification of Canadian Coast Guard, and in addition to the existing Marine Communications system, a series of call-out or “Spill Hotline” agreements with the Province of Ontario, Nunavut and Northwest Territories and other Federal Departments within the Region have been implemented.

In addition, Central and Arctic Region, provides a 24 hr public access spills hotline:

24 hour toll free - Spills Hotline:
1-800-265-0237

Notification may occur through various mechanisms, depending upon the manner in which the spill (incident) occurs.

5.4 Verification

In all cases, spill information is initially processed and verified through the Regional Operations Centre (ROC) located in Sarnia, Ontario (See Section 3.3 – Organization). The ROC Officer on duty:

1. Determines whether the pollution is within Canadian Coast Guard’s mandate as Lead Agency or as a potential Resource Agency
2. Establishes the credibility of the source

3. Identifies the following:
    - Incident name (nature of incident)
    - Time of call (local / UTC)
    - Time of spill (local/UTC) *(if available)*
    - Reported by / call back particulars
    - Source determination
    - Incident background and description of clean-up activities (if any)
    - On-scene environmental/atmospheric conditions
    - Pollutant type and quantity
    - Verifying party contact information (as applicable)
4. Initiates an MPIRS entry for the following cases:
    - Originally pursuing verification as Canadian Coast Guard mandate but additional information about source changes lead to another agency
    - Canadian Coast Guard mandate and verified no pollution
    - Canadian Coast Guard mandate and verified pollution
    - Likely to impact on / impacting on foreign waters
    - Significant impact on region, though not falling under Canadian Coast Guard mandate.
    - Request for Canadian Coast Guard as a resource agency.
5. Enters information into MPIRS (indicated in #3 above) as well as name of paged ERDO.

This information is then relayed to the Environmental Response Duty Officer to determine Canadian Coast Guard posture. It should be noted that all spill incidents, irrespective of CCG's mandate, may require Canadian Coast Guard resources if requested (see Resource Agency Role in Section 1.5 of the *National Response Plan).*

By agreement, spill verification will be completed by the Regional Operations Centre (ROC) Duty Officer. The verification will be complete when the ER Duty Officer is advised where Canadian Coast Guard is Lead Agency. (see Figure 5.2 Pollution Verification Process and Figure 5.3 Response Analysis Process)

5.5 Spill Assessment – Environmental Response Duty Officer

To facilitate the requirement for efficient and rapid notification and assessment of incidents, Central and Arctic Region, in accordance with the *National Response Plan,* Section 4.4, has instituted a 24-hr year round monitoring regime integrated with the Regional Operations Centre (ROC). The following sections identify the context in which this activity is carried out.

Coordination

The coordination of the ER Duty Officer is the responsibility of the ER Regional Emergency Operations Officer (REOO). These duties include assigning shifts in an equitable manner, keeping records of the duty officer schedules, maintaining equipment required to perform ER Duty Officer functions, reviewing individual ER Duty Officer performance, reviewing ER Duty Officer procedures, and liaising with the ROC and National HQ.

Performance

The ER Duty Officer function shall be performed by the following positions provided sufficient experience, appropriate training, and at the discretion of the Superintendent ER:

- ✓ Senior Officers
- ✓ Those in capacity to act for Senior Officer.

Review

The ER Duty Officer procedures shall be reviewed in reaction to:

- Changes at the Regional Operations Centre (ROC) affecting the ER Duty Officer function
- Changes in Canadian Coast Guard (CCG) policy on the response to ship source pollution
- In consideration of accepted recommendations stemming from exercises and operational responses.

The individual officer performance shall be reviewed in context of their execution of a spill assessment.

Responsibilities

At the beginning of the ER Duty Officer's shift the following are required:

- Functioning communication equipment (pager, cell phone/Blackberry);
- The necessary analytical tools (e.g. spill assessment forms, Greenwood's Guide to Great Lakes Shipping, Area Plans, Oil Spill Response Field Guide, OSH reference tools, and the CANUTEC Emergency Response Guide book.)

During the ER Duty Officers shift the following are required to be complete:

- MPIRS cases for any spill reports that required ER Duty Officer analysis by noon of the next business day;
- Extra Duty Reports;
- Notification of the next ER Duty Officer and the ER Regional Emergency Operations Officer of any on-going cases.

Availability

The availability of the ER Duty Officer is 24 hours/7 days a week. Pages must be responded to within 10 minutes of notification. Should the ER Duty Officer (DO) be unable to fulfill their duties at any time during the shift, they are required to

notify the ER Regional Emergency Operations Officer (REOO) immediately who will notify the ROC of any changes immediately. The following activities conflict with the performance of the ER Duty Officer function:

- travel out of country / region / pager range;
- inability to respond immediately due to performance of other job functions (instructing a course, running an exercise, delivering a presentation, involved in a maintenance run that would be too difficult to reschedule, chairing a meeting, or participating in any activity that requires attendance or would be inappropriate to leave);
- inability to respond immediately due to personal reasons (vacation, sickness, etc.).

Should an individual become unavailable for a significant portion of the shift for reasons noted above, that shift may be assigned to another officer at the discretion of the ER Regional Emergency Operations Officer.

Function

The primary function of the ER Duty Officer is to complete an initial incident assessment and analysis, making a recommendation to the Superintendent of ER as to the appropriate course of action. [**]

The initial assessment will be complete for the following cases:

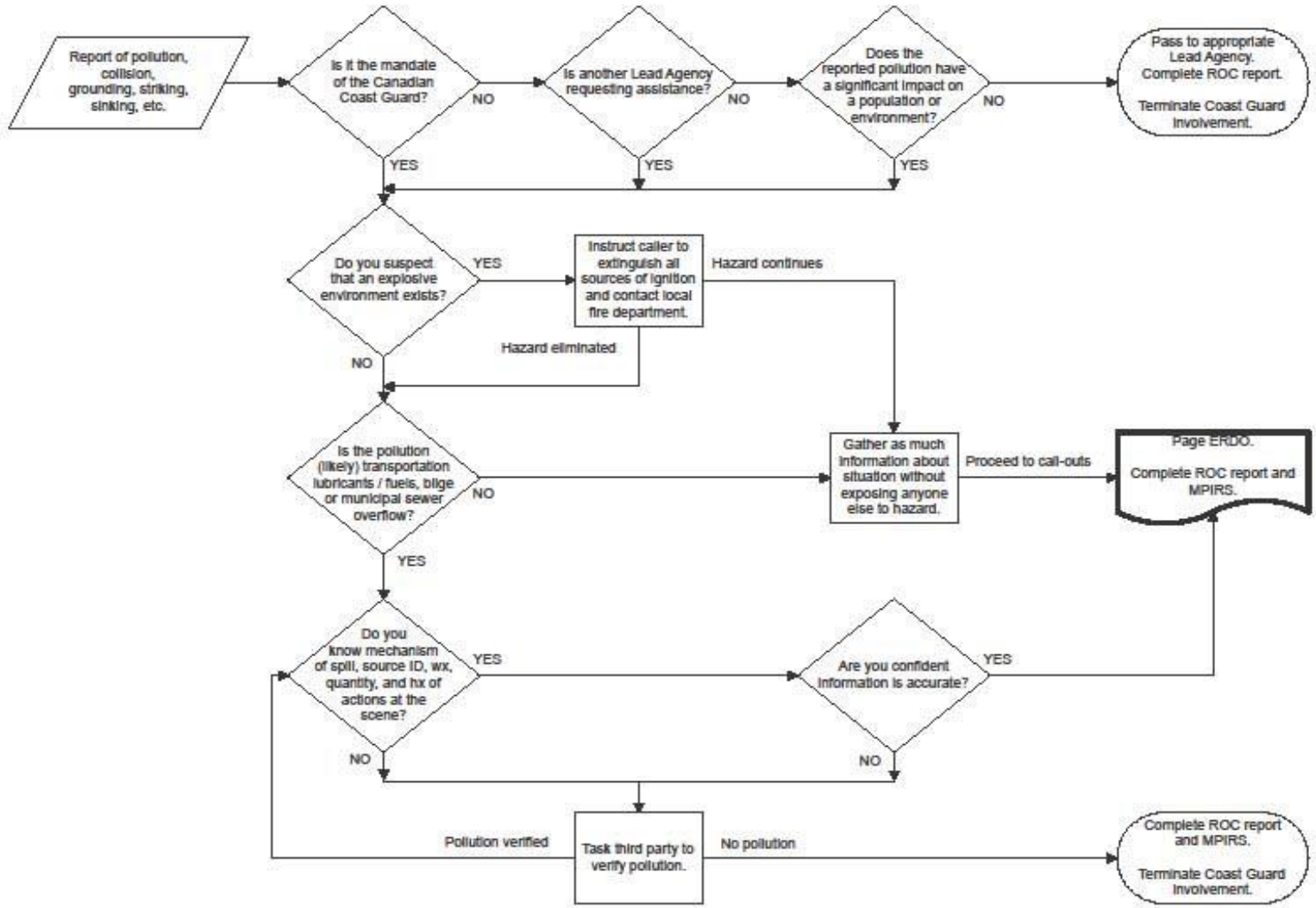
- Canadian Coast Guard mandate and verified pollution
- Likely to impact on / impacting on foreign waters
- Significant impact on region, though not falling under Canadian Coast Guard mandate.
- Request for Canadian Coast Guard as a resource agency.

The analysis function is complete when the Superintendent ER is informed and advised of the recommended course of action that will consider the following (see flow chart):

- polluter's actions and intentions (if applicable);
- safety concerns, tactical, logistical, and environmental feasibility of any response.

[**] The ER Duty Officer does not need to notify the Superintendent of any incidents that require "no activation" of CCG resources (assets/personnel) in monitoring/clean-up activity.

Spill assessment: *pollution verification process*



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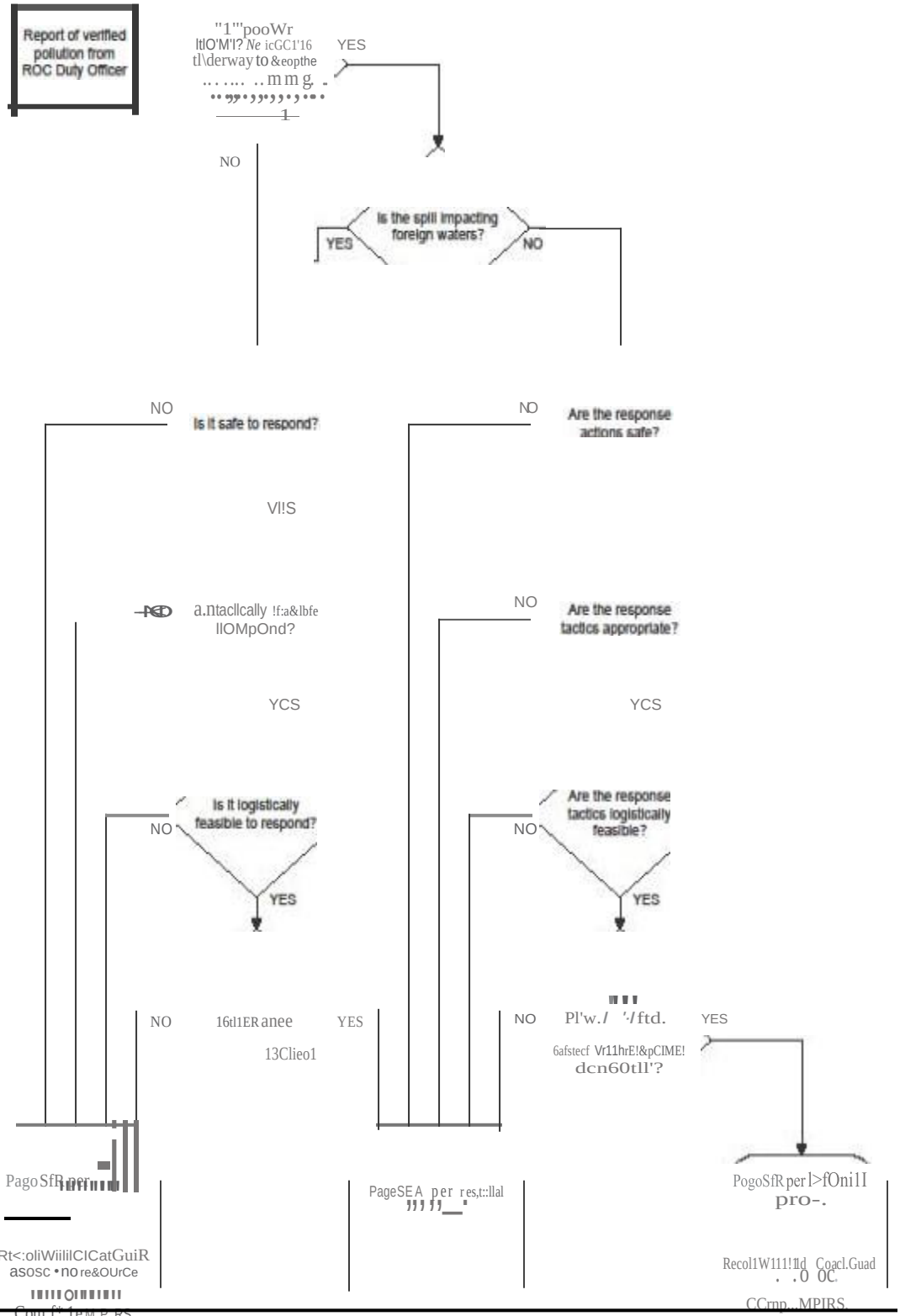

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5.6 Activation of Canadian Coast Guard Response Resources

In the event of small (0-150 T) to medium size (150-1000 T) spill incidents, the Superintendent, Environmental Response, acting upon the assessment provided by the Duty Officer, initiates/activates the appropriate response. This entails, but is not limited to, the following activities:

- Identification of overall health and safety risks to response personnel.
- Establishing the propriety of the recommended response posture. This includes the verification of international issues in border areas.
- Verification of Canadian Coast Guard capability to respond, impact on normal regional operations and, if necessary, the potential requirement for the notification and activation of the National Response Team.
- Assignment of the designated On-Scene Commander (OSC) or Federal Monitoring Officer (FMO). SROs are typically assigned as FMO/OSC for incidents occurring within their geographic area.
- Obtaining the necessary Order-in-Council, for spills in Arctic Waters
- Obtaining the financial project code, and forwarding it to the OSC/FMO.
- Signing a contract with the Response Organization (RO) in accordance with PWGSC contracting rules.
- Creation and dissemination of initial situation report to Regional and National management in accordance with the *Safety and Environmental Response Systems (SERS) – Incident Notification Guidelines*.
- Completion of MPIRS to document above activities.

For significantly larger spill incidents (1000T and above) the Superintendent, Environmental Response shall immediately assume the OSC/FMO role, notify Regional and National management of the situation and initiate the Response Management System (RMS) (and activation of the National Response Team, if necessary) in addition to the above activities. Upon stabilization of the immediate emergency, the Assistant Commissioner, Canadian Coast Guard, Central and Arctic Region and/or Director General, Canadian Coast Guard shall assess the requirement for assigning a new OSC/FMO.

5.7 Response Implementation

As stated previously (Section 4 - Preparedness), the Canadian Coast Guard will employ the Response Management System (RMS) as its primary management and operational tool. At the heart of this system is the development of clear obtainable objectives and the implementation of the supporting tactical deployment. This is achieved through the creation of incident action plans spanning specified operational time periods. For small spills these plans can be rather informal. As spill size and impacts increase, so to will the complexity of

operational assignments and hence a need for greater formalization of the Incident Action Plan.

All operations shall be carried out in accordance with the Guiding Principles set out in *Section 1.3* of the *National Response Plan* and the *Oil Spill Response Field Guide* (ISBN 0-660-16112-5).

Central and Arctic Region covers an extremely large geographical and culturally diverse portion of Canada. There are, in essence, two zones of operation which are entrenched in the *Canada Shipping Act*.
These are the:

- Arctic zone, or all areas of Canadian jurisdiction north of 60^0 N Latitude;
- Central zone, dominated in a marine transportation sense by the Great Lakes, but which include the southern portions of Hudson, James and Ungava Bay, along with the major waterways and watersheds of Lake Winnipeg, Winnipegosis, Lake of the Woods, and Lake Athabasca.

Arctic zone – first response
The highest risk of pollution in the arctic is during a ship fuel transfer to facilities in Canada's northern communities. Should pollution occur, the vessel and oil handling facility have responsibilities to implement their Oil Pollution Emergency Plans (OPEP) that deal with source control. The next step would be for the community to respond using its response plan, protecting the identified priority area(s) and employing the response equipment in an Arctic Community Pack, if so equipped.

Arctic zone – escalation
If the pollution is beyond the ship, facility, and community response then the Rapid Air Transportable (RAT)150T will be the first line Canadian Coast Guard ER response (Arctic icebreakers or Special River Nav-aid Tenders may have been on-scene first). Upon activation of the RAT150T, standing offers with aviation contractors will be called up. Closest ER personnel will be dispatched to the community to assess, plan, assemble (and train) responders, while preparing to stage the in-coming equipment. The Hay River base personnel will transport the pallets to the airport where they will be loaded into the awaiting airframe. Upon arrival the pallets will be unloaded and a trailer tongue and wheels affixed to the pallet to facilitate movement (by ATV if necessary) to a forward staging area and ultimately to a beach site. The timeframe for full forward staged capacity with personnel at any community with suitable runways is under 48 hours.

The hospitality industry of Arctic communities can be rapidly overwhelmed with the influx of as little as 10 people. Experience has shown that these communities could only support 10-15 additional personnel and only offer 10-15 community responders. Consequently, the RAT was designed considering the amount and type of equipment that is most easily handled by a combination of trained

Canadian Coast Guard personnel and community responders. The RAT150T response is predicated on an in-community response with the following positions identified in the table below:

Table 5-2 *Anticipated personnel usage for the RAT150T in an Arctic community*

Position	Canadian Coast Guard responder	Community responder
OSC	X	
OSC support		X
Chief Ops & Planning	X	
Logs – services	X	X
Logs – support	X	X
Ops skimming (A)	X	X
Ops skimming (B)	X	X
Ops shoreline (A)	X	X X X X
Ops shoreline (B)	X	X X X X
Ops booming vessel (A)	X	X
Ops booming vessel (B)	X	X
Transfer / disposal	X	X
Totals	**11**	**16**

Upon escalating beyond a RAT150T response, the Δ1000T will be stood up. Standing offers / arrangements with local contractors will be activated to move the containers / seatrucks to a location where they can be transferred to a ship / barge. If required, closest Canadian Coast Guard base personnel will be dispatched to the depot to assist. The closest suitable marine transportation asset will also be contracted to move the equipment to the spill site. The timeframe for full forward staged capacity with personnel is estimated at one week.

As the 150T response is predicated on an in-community response a larger spill would have to be supported by a Canadian Coast Guard icebreaker, rented camp barge, or flown in from surrounding communities.

Table 5-3 *Anticipated personnel usage for the 1000T in an Arctic community.*

Position	Canadian Coast Guard ER responder	CCG Fleet or professional contractor	Community responder
OSC	X		
OSC support		X	X
Chief of Planning	X		
Plan – response	X		
Plan – demobilization	X		
Chief of Logs	X		
Logs – services		X	X
Logs – support	X X	X X X	
Chief of Ops	X		
Air Ops		X	
Ops on-water	X X	X X X X	
Ops shoreline	X X		X X X X X X X X X
Ops booming	X X	X X X X	
Transfer / disposal	X	X	X
Totals	**14**	**13**	**13**

Central Zone – first response

The highest risk of pollution occurring in the region is found in the Great Lakes. Statistically the areas in the Great Lakes of highest risk are the connecting channels due to volumes, numbers of transits, and convergence factors (existing VTS / navigational aid systems recognize this). Areas with traditionally high pleasure craft and small commercial craft traffic experience frequent (though low in volume) pollution incidents.

If the pollution is in the local vicinity of a Canadian Coast Guard Search and Rescue (SAR) station or facility with operational staff, a First Response Unit (FRU) may be deployed as an initial attempt at containment. If more equipment sweeps systems or recovery units are required then the Rapid Road Transportable (RRT) 2500T will be activated.

Transfer of Lead Agency

Transfer of Lead from CCG

Should an incident initially appear to fall within the jurisdiction of the Canadian Coast Guard yet later is determined to be another government agency's

responsibility, the CCG-appointed OSC or FMO will verbally acknowledge the transfer of Lead Agency responsibility followed by written confirmation on the terms of the transfer (this may require time for termination of a response contract with CCG and the establishment of a response contract with the appropriate Lead Agency.) When the Lead is transferred from CCG to another Lead Agency, CCG will submit an invoice of its response costs to the Lead Agency for response activities undertaken up to the time of transfer recognition.
Should the Lead Agency wish to retain CCG as a Resource Agency, the criteria in Section 7 of the *National Response Plan* of the *CCG National Marine Spills Response Plan* will apply.

Transfer of Lead to CCG
When the Lead is transferred to Canadian Coast Guard from another agency, the Canadian Coast Guard will incorporate the appropriate costs borne by the other agency in the initial stages of the spill into its claim to the Polluter or to the Ship Source Oil Pollution Fund, (SOPF) as the case may be.

Safety Procedures and Considerations

All petroleum cargoes are considered hazardous substances. Canadian Coast Guard command, clean-up, monitoring and verification personnel have protective equipment and training available to them up to Level “D”. All Environmental Response branch staff have been issued with a variety of personal protective equipment (PPE) and are expected to deploy to a spill site (includes exercises and training) with all appropriate gear. Safety glasses and rain suits with rubber boots and gloves are appropriate for Canadian Coast Guard's traditional verification of and response to oil pollution.

Bulk chemical carriers, rail cars, road trailers, sour (H2S) petroleum products or BTX (benzene, toluene, xylene) carried on oil tankers are all sources of substances for which Canadian Coast Guard personnel are not readily equipped for. In most cases where the pollutant reported is suspected to be from one of these sources Canadian Coast Guard assets should not be tasked to verify. If it falls within Canadian Coast Guard mandate the ER program personnel will get directly involved in the verification, likely looking to other government departments or contractors to continue with the assessment and response.

When the pollution is reported to the ROC by a member of the public, or by a credible professional as a mystery spill, closer examination of the circumstances or probable cause of the pollution will occur as part of spill verification. During the conversation with the individual reporting the incident the ROC Duty Officer will want to find out what it is that they observed. These are:

- Colour [typical petroleum silvery to rainbow to dark purple / brown or is it frothy, green organic matter, rusty, etc.]
- Odour [does it smell like gas, diesel, rotten eggs, no odour]
- Proximity to any likely source [vessel, industrial outfall, municipal outfall, midlake, mid channel, washed up industrial storage drum]

- Volumes [football field sized, shopping mall parking lot big, or a thin ribbon]
- Other factors [heavy rainfall in last 12 hours; seasonal conditions / times / areas known for algae blooms; fish or animal kills].

By picking up on any "flags" during an assessment it can be reasonably determined whether the pollution should not/should be classified as a hazardous substance (for which CCG personnel are unable to respond to). The ER duty officer will consult with experts in Environment Canada (EC), Spills Action Centre (SAC), and CANUTEC, as appropriate to determine the safety for personnel.

Alternative countermeasures

Alternative countermeasures are those non-mechanical techniques utilized in oil spill response operations such as in-situ burning, dispersant application, and shoreline cleaner application.

Central Zone

The likelihood of approval of in-situ burning operations on the Great Lakes or in connecting channels or inland lakes is minimal. The use of dispersants in the Great Lakes, connecting channels or in inland waterways will not be considered. Shoreline cleaner agents approved by Environment Canada may be considered.

Arctic Zone

In view of the difficulties associated with mounting an effective response in the Arctic, the CCG has recommended that further research be done in the areas of in-situ burning, the use of dispersants (reference Quebec paper) and other oil in ice recovery methods. This research should be operational R&D and assume that the product spilled is Arctic diesel and that the spill occurs during the Arctic shipping season.

5.8 Summary Report and Post Incident Review

It is regional policy to provide a Summary Report and/or conduct a formal Post Incident Review for incidents deemed noteworthy or valuable by the OSC/FMO or Assistant Commissioner, Canadian Coast Guard.

Summary Report

The summary report shall contain at minimum the following, but can include any information deemed relevant by the OSC/FMO.

Summary Incident Report Format

(a) Overview of Crisis Event

- spill source (not cause), initial environmental conditions and assessment of situation

(b) Spill chronology
- spill response activities and climate/wind /sea condition data
- key response objectives (success and failures in implementation), major shifts in tactics, other agencies involvement

(c) Costs and cost recovery issues
- total estimated cost summary
- identification of Cost Recovery requirements and options

(d) References
- Situation Reports

Post Incident Review

The main objective of a Post Incident Review is the evaluation of the incident to ultimately improve Canadian Coast Guard's effectiveness at spill response. To that end, this requirement is essentially similar to the principles of exercise evaluation. Therefore, when required, the review shall be conducted in accordance with the principles contained in the *National Exercise Program – Evaluation guidelines, Chapter 11*.

This entails six distinct tasks:

1) Brief the Evaluation Team
2) Brief the Response Team
3) Evaluate the Incident
4) Prepare a Preliminary Summary of Key Observations
5) Hold an Incident Debriefing Session
6) Prepare an Official Post Incident Evaluation Report

Post Incident Evaluation Report Format

(a) Executive Summary -Summarizes overall findings and observations

(b) Overview of Incident Objectives -Briefly describes the key objectives, environmental conditions and initial situation assessment

(c) Evaluation Techniques and Criteria - Describes the technique(s) (i.e. self, peer or independent evaluation) and the major evaluation criteria used

(d) Assessment of Key Incident Objectives - This provides a critical appraisal of the incident objectives or major shifts in tactics. Each key objective assessment will include the following:

Findings – A summary statement describing key positive and negative findings.

Specific Observations - Observed decisions and tasks noted during the incident by responders, management and interested parties.

Conclusions - Assessment of the impact of the finding on overall achievement of the incident objective(s)

Recommendations – A description of potential corrective or follow-up action required to implement the findings to improve overall marine spill response preparedness.

(e) Appendices or Attachments - May or may not be required

Section 6 – CLAIMS & COST RECOVERY

6.1 Purpose

The purpose of this section of the *Regional Response Plan* is to outline the requirements and regional processes to assist in the creation of a claim to the relevant fund or directly to a polluter.

The ability of Canadian Coast Guard to recover or pursue recovery of response expenses or costs associated with monitoring activities is set out in the *Marine Liability Act, Part 6, "Liability and Compensation for Pollution"*. This ability to recover costs is seen as the embodiment of the polluter-pay-principle set out in the *National Response Plan, Guiding Principles, Section 1.3*.
Note: That at this time there is no mechanism to recover monitoring costs from an oil handling facility.

In addition to the above and recognizing the potential financial risks and impacts to Canada, Canadian legislation also provides for the creation and maintenance of a Ship-Source Oil Pollution Fund, (SOPF). This fund, in addition to the International Oil Pollution Compensation Fund (IOPCF) and the Protection & Indemnity (P&I) Clubs, provides for the assessment of claims/loss against member ships and/or shipping companies. Neither of these funds hinder nor otherwise limit Canadian Coast Guard's ability to lay claims directly against a Polluter. However, the Polluter is only required to reimburse a claim up to its Limit of Liability. This limit is calculated using the guidelines established in the *Convention on Limitation of Liability for Maritime Claims (LLMC), 1976*.

6.2 Policy Guidelines

The following points serve as regional guidelines for pursuing cost recovery activities:

- The decision to seek cost recovery should be made based on common sense and in consultation with other operational and finance team members.
- Cost recovery should be avoided in situations where the administrative costs of recovery action exceed the dollars expected to be recovered.
- Cost recovery embodies the "Polluter Pays" principle.
- Costs incurred while acting as a resource agency must be recovered from the lead agency.
- Costs incurred while acting as OSC/FMO are recoverable from either the polluter, its P&I Club, the Ship-Source Oil Pollution Fund or from the International Oil Pollution Compensation Fund.

6.3 Responsibilities

On-Scene Commander/Federal Monitoring Officer (OSC/FMO)
The OSC/FMO is responsible for ensuring that complete and accurate documentation is provided for a timely and effective cost recovery process. The OSC/FMO is responsible for preparing all documentation necessary to initiate cost recovery.

Regional Finance Staff
Response, monitoring and administrative costs must be calculated in accordance with national financial accounting and recording practices. Senior administrative officers within Maritime Services may be called upon to provide expert advice as required. It is recommended that a regional finance representative be on-scene as soon as possible to help establish procedures, to safeguard documentation, and to ensure the integrity of the costing process.

Environmental Response Headquarters
The Environmental Response Senior Advisor for Cost Recovery and Claims will submit those claims that are intended for the Ship-Source Oil Pollution Fund and to International Fund Conventions in accordance with the guidelines specified by each. The Advisor will also issue equipment charge-out rates periodically for use by all regions.

6.4 Process
The Response Management System (RMS) documentation (field notes, Incident Action Plans, Minutes and meeting records, time sheets and any and all expense records, invoices/requisitions etc.) shall form the basis of data for the Cost Recovery action.

The Region will initiate cost recovery actions against the Polluter. Should the Polluter be unable or unwilling to pay the costs, the Region will forward the claim to HQ Senior Advisor for Cost Recovery and Claims for submission to the Ship-Source Oil Pollution Fund. Should the costs of the response exceed the Limit of Liability of the Polluter, reimbursement of costs will be through the SOPF and then through the IOPCF. Claims associated with mystery spills will be submitted directly to HQ for a claim against the SOPF.

6.5 Documentation
Proper documentation alleviates the need to reconstruct the incident after the fact, reduces the volume of questions, and adds credence to the claim. The key source of information that enables various parties to determine the degree of reasonableness of the actions taken and the costs claimed is the part of the cost recovery summary known as a “narrative”. That justification is considered to be a critical component to successful and timely claims.

The regional guideline for producing cost summaries and documentation handling is as follows:

Incidents of minimum complexity and limited expenditures (under $15K)

- Expenditures may be summarized within the body of the Final Report, including any description of "calculated" values (i.e. administration costs)
- Original invoices shall be kept on the dedicated spill file.

Incidents of medium complexity and moderate expenditures (up to $50K)

- Expenditures will be summarized in a single table by Cost Element within the body of the Final Report.
- A supporting cost summary document or appendix shall be created to provide a detailed cost summary by date. Copies of the expenditure documentation will be included.
- Original invoices shall be kept on the dedicated spill file organized by date.

Incidents of high complexity and significant expenditures ($50K plus)

- Expenditures will be summarized in a single table by Cost Element within the body of the Final Report. (similar to medium complexity incidents)
- A supporting cost summary document will be created summarizing the daily expenditures by individual cost element, followed by a cumulative summary of each cost element (spreadsheet of all daily summaries). The sum total of all cost elements will then be summarized for use in the final report.
- Due to the volume of transactions, copies of the expenditure documents will not be provided in the supporting cost summary document.
- Original invoices will be kept in their original state, filed by date and archived when feasible to a dedicated file.

Table 6.1 Sample Cost Element Table

Cost Element	Description
Personnel	Includes hourly regular and overtime costs associated with CCG Staff (includes EBP)
Equipment	Includes cost of all CCG assets, based upon established charge out rates
Purchases/Expendables	Includes expendables such as office supplies and PPE
Travel	Includes meals and accommodation costs incurred by CCG staff accordance with TB travel directive.
Contractors	Includes the costs of all private sector contractor/goods and services.
Administration	Includes the cost of CCG administration.
Total Estimated Cost	

6.6 References

- CCG Ship Source and Marine Pollution Response Costing Principles and Documentation Standards DFO2004-6332
- Cost Recovery of Ship Source and Marine Pollution Response Directive # D-4010-2001-01
- Cost Recovery Related Policies, Memorandum dated October 26, 1998, File AWE 1001-5-2-1 (AWEA)

6.7 Third Party Claims

While monitoring or responding to an incident, Canadian Coast Guard will refer all inquiries regarding third party claims to the Polluter. In the case of a mystery spill, the Canadian Coast Guard will encourage claimants to submit a claim directly to the Ship Source Oil Pollution Fund.

Section 7 - PLAN MAINTENANCE AND CUSTODIANS

7.1 *Maintenance Process*

Responsibility
The *Regional Response Plan* of the *Canadian Coast Guard Marine Spills Response Plan* for Central & Arctic Region is the responsibility of:

Assistant Commissioner, Canadian Coast Guard
Central & Arctic Region
520 Exmouth Street
Sarnia, Ontario
N7T 8B1
fax (519) 383-1991

Revision Requests
All requests or suggestions for revision to this plan should be forwarded, in writing, to the above noted address and should include the following information:

- Originator (including return address and telephone number)
- Date
- Subject (i.e. request for revision)
- Suggested change (including section and page number references)
- Reason for revision

All formally received requests will be acknowledged in writing and assessed for inclusion into the plan. Upon approval the revision will be distributed accordingly.

Revision Record
Upon receiving a revision transmittal, recipients are requested to ensure that its number is next in sequence to the previous issue, process the amendments according to the transmittal instructions and complete the revision record in this section.

Should there be any discrepancies or questions, the recipient should contact the Canadian Coast Guard, Assistant Commissioner, Central & Arctic Region at the above address.

The onus is on the plan holder to maintain a current plan.

7.2 *Canadian Coast Guard Custodians*

This document is structured to reflect the fundamental phases of Environmental Response (ER) activities and hence reflects the co-operative nature of each

aspect of the Central and Arctic Region Environmental Response organization. In conjunction with this, each component has been assigned to a specific section within the branch (e.g. training is the responsibility of the Training Officer). The Assistant Commissioner – Canadian Coast Guard, Central and Arctic Region retains the overall responsibility for the document's implementation. The Emergency Plan Development Officer (EPDO) facilitates the physical management and co-ordination of this document.

These custodial relationships herein are designed to facilitate the annual review and maintenance of the *Regional Response Plan*.

Letter of Promulgation	Emergency Plan Development Officer
Record of Revision	Plan Holders
Section 1 – Introduction	Emergency Plan Development Officer
Section 2 - Agreements & Memoranda of Understanding	Emergency Plan Development Officer
Section 3 – Organization	Emergency Plan Development Officer
Section 4 – Preparedness 4.2 RMS	Regional Training Officer
4.3 Planning	Emergency Plan Development Officer
4.4 Training	Regional Training Officer
4.5 Exercising	Regional Exercise Officer
4.6 Inventory Maintenance & Management	Regional Emergency Operations Officer
Section 5 – Response Operations	Regional Emergency Operations Officer
Section 6 – Claims & Cost Recovery	TBD
Section 7 - Plan Maintenance & Custodians	Emergency Plan Development Officer
Section 8 – Contacts	Emergency Plan Development Officer
Section 9 – References & Annexes	Responsibility for each annex is assigned in each Annex.

All unassigned sections shall be considered the responsibility of the Emergency Plan Development Officer unless otherwise indicated.

7.3 Plan Distribution

The *Regional Response Plan* shall be distributed to all holders of the *Canadian Coast Guard Marine Spills Response Plan*, in accordance with the Area of Responsibility set in Section 1 - Introduction. This includes the relevant Federal and Provincial Lead Agencies as described in the National Response Plan Section 1, sub-section 1.5; all Canadian Coast Guard Management; Facilities and Vessels; all Oil Handling Facilities and relevant certified Response Organizations by request and in accordance with Transport Canada-Marine

Safety, Compliance and Enforcement division. All subsequent revisions will be automatically distributed to these plan holders.

Any member of the general public wishing to obtain a copy may do so through the Fisheries and Oceans, Canadian Coast Guard, National Headquarters. These plan holders will not be advised of revisions.

Section 8 – CONTACTS

8.1 Pollution Reports for Canadian Coast Guard, Central & Arctic Region

To report a pollution emergency anywhere within Central & Arctic Region telephone the Canadian Coast Guard, Regional Operations Centre (ROC) toll free at:

1-800-265-0237

or report via

Marine Radio on VHF, Channel 16.

8.2 Other Lead Agencies that Maintain Spill Report Lines

- Ontario Ministry of the Environment - Spills Action Centre: 1-800-268-6060
- Territorial Spills Line – Arctic Alarm: 1-867-920-8130
- Manitoba Conservation: 1-204-944-4888
- Saskatchewan Environment - Saskatchewan Spill Centre: 1-800-667-7525
- Alberta Environment: 1-800-222-6514

8.3 Canadian Coast Guard, Environmental Response Branch (CCG/ER) Phone List – Regular Office Hours

Regional Office, Canadian Coast Guard **520 Exmouth Street** **Sarnia, ON N7T 8B1**	
Title	**Telephone**
Superintendent, Environmental Response	519-383-1954
Emergency Plan Development Officer	519-464-5126
Assistant Contingency Planning Officer	519-383-1953
Regional Exercise Officer	519-383-1978
Regional Emergency Operations Officer	519-383-1956
Environmental Training Officer	519-383-1957
Administrative Assistant	519-383-1951

Canadian Coast Guard Base **42037 McKenzie Highway** **Hay River, NT X0E 0R9**	
Title	**Telephone**
Senior Response Officer	867-874-5557
Response Specialist	867-874-5558
Response Specialist	867-874-5559

Canadian Coast Guard Base **PO Box 1000, 401 King Street** **Prescott, ON K0E 1T0**	
Title	**Telephone**
Senior Response Officer	613-925-2865 x 157
Response Specialist (2)	613-925-2865 x 262
Logistics and Statistics Officer	613-925-2865 x 126

Canadian Coast Guard Base **28 Waubeek Street** **Parry Sound, ON P2A 1B9**	
Title	**Telephone**
Senior Response Officer	705-746-2196 x 228
Response Specialist	705-746-2196 x 270
Response Specialist	705-746-2196 x 201

Section 9 – REFERENCES & ANNEXES

9.1 References

The following list includes those documents which supplement the Regional Response Plan.

Supplement	Custodian
Environmental Response Manual – Standard Operating Procedures and Directives	Canadian Coast Guard, Environmental Response, Headquarters
Response Management System User's Guide, version 3.0 (May 2006)	Canadian Coast Guard, Environmental Response, Headquarters
Environmental Response Superintendent's Manual	Superintendent, Environmental Response, Regional Office
Environmental Response Regional Health & Safety Plan	Environmental Response, Regional Emergency Operations Officer
National Exercise Program (NEP) Manual	Canadian Coast Guard, Environmental Response Headquarters
Inventory Control and Response Management System – TMA database	Regional Logistics and Statistics Officer, Environmental Response
DFO Crisis Communications Plan	DFO Corporate Services, Communications Branch

9.2 Annexes

The following Area Plans make up the Annexes to the Regional Chapter:

1) St. Lawrence River and Lake Francis
2) Lake Ontario
3) Lake Erie
4) St. Clair and Detroit River
5) Lake Huron, Georgian Bay and North Channel
6) St. Mary's River
7) Lake Superior
8) Lake of the Woods
9) Inland waters (South of 60°N Latitude)
10) Hudson and James Bay
11) Baffin Region
12) Keewatin Region
13) Kitikmeot Region
14) Great Slave Lake Region
15) Mackenzie River and Delta
16) Beaufort Sea and Amundsen Gulf

APPENDIX G – Agnico Internal Spill Report Form

Spill >100 L need to be declared to Env. Dept. Immediately

Meliadine Gold Project
Internal Spill Report Form

Everyone is responsible of cleaning their spills

	Date of spill
	Date of spill report
AGNICO EAGLE	Date at the end of cleanup/incident
	* special note :

Reported by / Unreported		Select one Cause for the incident
Contractor Involved	☐	In the selection under :
Employee Involved	☐ Chec	Equipment Breakdown
Supervisor Involved	☐ Chec	Equipment malfunction
Equipment Involved	☐ Chec	Human error
Nature of Contaminant	☐ Chec	Improper storage
Quantity of Contaminant	☐ Chec	Act of god
Exact Location : Easting / Northing	☐ Chec	Non respect of procedure
Environmental Personnel Contacted	Chec	Other

Description of the incident

Immediate Corrective Action

Action to be taken to reduce/eradicate risk of similar incident in the future

Volume (in m3 - cubic meter) of soil transferred to the landfarm

Report Completed by

For Environmental Department Purpose Only

Incident Investigation Recommended
Government agency notified
Date of notification to government agency
Comment :
Environment Personnel Signature

APPENDIX H – NT-NU Spill Report

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR	REPORT NUMBER
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME	☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	____-____
C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION		
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION		
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR EQUIPMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS			

L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

APPENDIX I – Latest MOCK Scenario

AGNICO EAGLE

On August 4, 2018 the AEM Environment Department conducted a mock spill event at the Itivia refueling station/tank farm with AEM emergency response (ERT) members, Orbit Garant Environmental/health and safety AEM warehouse staff, AEM Site Service/HTO vice president and AEM community relations personnel., Spill Training contractor, Nunatta Environmental was on site to assist and provide advice/training, The Rankin Inlet Fire Chief also attended the event as an observer.

An AEM ENV Tech documented the spill response actions and acted as the "Control Room" responder, Rankin Inlet dispatch and the ENV Tech/ENV Coordinator on site.

The mock scenario involved a broken fuel line fitting at the onshore receiving manifold during refueling (from offshore ship) of the fuel storage tanks at Itivia.

14:12 – Spill occurs (4000 L of leaking fuel towards the shoreline) Dave Loder spotted fuel leaking from the broken fitting/line

14:13 – ERT responder calls the vessel to stop transfer of fuel ASAP and relays the message of a leaking fitting to the Captain.

14:18 - Confirmation from the Captain that the transfer has stopped. During that time, AEM Site Service blocked the access to the area and called "CODE 1" to Rankin Inlet dispatch and requested to have environmental personnel contact ERT responder on the radio.

14:19- ERT responder asks ENV Coordinator to contact the coast guard
14:20 – ERT responder requested heavy equipment from construction/site services to dig a trench (no operators in area)

14:25 – Fire Marshall from Rankin Inlet arrived (did not participate but was ready with staff if assistance needed assistance)

14:25- AEM Warehouse staff from Itivia and started deploying booms along coast from emergency sea-can/ ERT responder supported.

14:38- Additional AEM Environment Dep't staff were travelling on the road to Meliadine site when the "CODE 1" was called (came to Itivia to provide support) and helped deploy absorbent booms and rags as ERT responder instructed.

15:50 – full ERT team arrived for assistance- First ERT responder (Commander) instructed immediate deployment of marine curtain (water was too rough 80 km/hr winds- did not want to put anyone's safety at risk; deployed on shore)

16:00 – More absorbent booms are placed in front of the marine barrier to collect spill and prevent it from going under marine barrier- no operators present for heavy equipment; ERT and environment staff attempted to make a trench – did not succeed due to bed rock

16:04 – Absorbent padding was placed on top of spill where visible product was observed behind marine barrier (wind blowing toward shore)

17:25 – ERT, ENV and Agnico staff declare the spill has been contained and absorbed; called off the ”CODE 1” and spill report prepared with follow up investigation of event.

Summary:

Nunatta - guided and assisted AEM staff (total 14 on site) to implement the correct procedures and equipment handling to successfully participate in the mock spill training event (fuel leak/water); the ERT commander did a great job of delegating responsibilities with everyone; all communication was satisfactory during the event. Heavy equipment (excavator) would be required as the area is underlain be bedrock – shovels and picks were not effective to dig a collection trench. It took 23 minutes for the spill to go from the pipe connection to the marine barrier- it would in a realistic scenario take ERT a minimum of 1 hour (It took 1.5hr) to get from Meliadine to Rankin Inlet (includes time to prepare) and Environment Dep’t staff members could mobilize within 50 minutes. In order to provide additional line of defense to capture fugitive oil/fuel spills the overburden on the inter-tidal zone should be removed so that loose absorbent can be spread. Nunatta advised that we contact Department of Fisheries and Oceans and ask if we can remove some rock along the beach in case of an emergency (this is fish habitat). A collection trench or sump would reduce the speed of any spill.

AEM and Nunatta Comments/Recommendations

- Buoys that can be attached to the maritime barrier or the fuel line were not blown up- these should be blown up prior to refueling season
- Sea-cans that contain Emergency environmental spill response should be placed together (one is placed on top of hill- these sea-cans should be placed as close to the shore manifold as possible)
- Shore line where fuel line connects should be cleaned of all obstructions to prevent injury to staff and damaging the containment booms
- Life jackets or mustang suits must be worn while working near the water and/or on boats
- It’s required that AEM warehouse staff working at Itivia area review the OPEP and Emergency Response Plan with ENV Tech prior to barge/fuel transfer season (both rotations)
- AEM observed that the OPEP and Spill Contingency plan was located in the Itivia warehouse office
- Follow up with DFO; if strip of overburden can be removed from inter-tidal zone to facilitate spill response and pro spill prevention measures
- Order more shackles
- OPEP should include the local municipality emergency numbers (I included this document in the PDF)
- AEM and ERT members will conduct annual training with Environment Dep’t staff.
- Lighter anchors (20 pound range) for the boat (ordered); currently have 60 pound anchors

Annual Mock Spill Attendee List

AGNICO EAGLE
MELIADINE

CREDO
An injury can be avoided: drop the excuses. When we believe in safety, we first follow the instructions. Everyone is responsible for behavior that ensures its safety.

4 m^3 - water truck

ANNUAL MOCK SPILL EVENT

Fill out this form, attach the minutes and handouts

Department: ENV

Supervisor:

DATE: 2018-08-04

MEETING (DÉTAILS) :
Topic: Mock Spill event - Itivia refueling area
Safety Concerns: High winds

NAMES (PRINT)	SIGNATURE	NAMES (PRINT)	SIGNATURE
Randy Schwandt	[signature]		
Jean-Francois Demers	[signature]		
Hugues Dubé	[signature]		
David Loder	[signature]		
Claudia Tremblay	[signature]		
Robert Eno	[signature]		
Candace Ramcharan	[signature]		
Richard Jadeau	[signature]		
ISRael Aliyak	[signature]		
Matt Guillman	[signature]		
Sean Airda	[signature]		
MARK WYATT	[signature]		
RÉJEAN FA[illegible]	[signature]		

Emergency Contact Numbers

Last update: Jan 15, 2017 Version D

Radio: Channel 1; call "CODE 1, CODE 1, CODE 1"

AGNICO EAGLE
MELIADINE

Agnico-Eagle Mines (AEM) Meliadine Project
25 km north-north-west of Rankin Inlet

63.027400 (N), - 92.171700 (W) (Helipad)

Meliadine Site Telephone Number: **819-759-3555**
Rankin Office: (Ext:3199) 867-645-2920

Onsite Health Care Professional: 3911

Medical Emergency		
Rankin Inlet Health Center Head Nurse: Gracy Dcunha	Monday - Friday 8h30 to 17h00 AFTER HOURS EMERGENCY	**(867) 645-8300** **(867) 645-6700**
Rankin Inlet Ambulance Service (Fire Dept.)	**Emergency**	**(867) 645-2525**
Rankin Inlet Search and Rescue		(867) 645-3300
Poison Control Centre (Qikiqtani General Hospital, Iqaluit)	Emergencies General inquiries	(867) 979-7350 (867) 979-7300
Law Enforcement, Rescue, Wildlife		
RCMP in Rankin Inlet (Death on camp or for Search & Rescue) (0123 = General Information, 1111 for emergency, 24H)		(867) 645-1111 (867) 645-0123
Workers' Safety and Compensation Commission (WSCC) Mine Inspector: Lex Lovatt		(800) 661-0792 **Hot Line** (867) 920-3849
Coroner		(867) 975-7292 (867) 975-1063 cell
Conservation & Wildlife officer in Rankin Inlet Officer Johanne Coutut Autut		(867) 645-8084 (867) 645-8085
Hazmat & Spills		
CANUTEC		(613) 996-6666
Spills Hotline	Phone	(867) 920-8130
Agnico-Eagle Mines (AEM)		
Program Manager: Martin Plante martin.plante@agnico-eagle.com	Office	(819) 759-3555 ext:8058 (819) 856-1873 Cell
Others		
Health & Safety Superintendent: Dominic Richard dominic.richard@agnicoeagle.com Environment Superintendent: Nancy Harvey nancy.harvey@agnicoeagle.com Human Resources Superintendent : Sandra Marseille sandra.marseille@agnicoeagle.com		(819) 856-4104 Cell (819) 856-4385 Cell (819) 860-3723 Cell
FM Radio Frequencies		
Channel 1 – CAMP (Emergency call Channel)		Rx & Tx: 167.43000
Channel 2 – CONSTRUCTION		Rx & Tx: 163.32000
Channel 3 – EXPLORATION		Rx: 163.57500 Tx: 168.70500
Channel 8 – ROAD Meliadine		Rx: 162.54000 Tx: 165.57000
Channel 9 – ROAD Rankin		Rx: 162.66000 Tx: 167.64000
Channel 10 – UG OPERATION		
Channel 11 – UG Spare		

APPENDIX J – Product Transfer Area Assessment

Meliadine Gold Project

Product Transfer Area Assessment – Rankin Inlet Itivia Oil Handling Facility

January 6th 2019

Prepared for:

Environment and Climate Change Canada

Prepared by:

Agnico Eagle Mines Limited – Meliadine Division

Document Control

Version	Date	Tank/EC number	Section	Revision	Author
1	January 2019	EC# 00044507		Implementation of the Product Transfer Area Assessment – Rankin Inlet Itivia Oil Handling Facility for the ERP	Dan Gorton Env. Coordinator
2					

1. Introduction

The purpose of this document is to satisfy the requirement of section 15 of the Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations made pursuant to Canadian Environmental Protection Act, 1999 which states

15 (1) The owner or operator of a storage tank system must ensure that petroleum product and allied petroleum product transfer areas are designed to contain any releases in liquid form in the environment that occur during the transfer process. In accordance to the STSPPR a ''transfer area" means the area around the connection point between a delivery truck, railcar, aircraft or vessel and a storage tank system in which the tanks have an aggregate capacity of more than 2 500 L. Furthermore, Subparagraph 2.1(2) of the STSPPR states a person must not release or permit or cause any release of a petroleum product or allied petroleum product, in liquid form in the environment, during the transfer of the product to or from a storage tank system if, in the case of a system that has a transfer area, the release during transfer reaches outside the transfer area.

2. Summary

Location: 62°48'16.66" N, 92°05'5.32" W. Itivia Road, Rankin Inlet.

Tank System ID: EC# 00044507

Figure 1 and 2: Agnico Eagle Ltd.'s Itivia Site Fuel Storage Area

Figure 3 and 4: Agnico Eagle Ltd.'s Itivia Site Fuel Storage Containment

The diesel (13.5ML and 20ML) storage tank system owned by Agnico Eagle Mines (AEM), located at Rankin Inlet was evaluated in accordance with Environment and Climate Change Canada's (ECCC) approach to transfer area protection. A number of potential incidents, risk and related receiving environments were identified for this product transfer area. The risk evaluation identified two risks requiring action. The risks were mitigated by designing secondary containment for the two product transfer areas.

At the marine line connection point, a 400L concrete spill basin was installed to catch small quantities of product in the event of a pinhole leak at the connection point, or during disengagement of the coupling. At the vehicle refueling station, a secondary containment area was designed to accommodate a fuel tanker during refueling. This containment area is designed to capture small spills that may result during disengagement of the dry quick connect coupling.

In addition, there were several procedures related mitigation measures developed for this site to address the identified risks (see Section 5 - SOP).

3. Background

The oil handling facility contains two steel tanks of 13.5ML (tank 1) and 20ML (tank 2) capacity. The tank system is owned and operated by Agnico Eagle Mines Limited. Tank 1 was installed in 2017 and Tank 2 was installed in 2018. Both tanks are operational 12 months of the year. The tanks are refilled annually (July to October). There have been no previous failures where product reached the environment with this storage tank system.

Refueling station to truck transfer area

There is one loading arm with dry quick connect coupling for tank truck filling operation, connected to an insulated pumping station (watertight 20' container). A single continuous 3m x 100mm hose transfers fuel from the loading arm to the fuel truck. The flow rate is a maximum of 800 L/min, or less, depending on the truck.

Transfer of fuel into trucks is performed in conformance with procedures outlined in:

- The National Fire Code of Canada (NFCC);
- The American Petroleum Institute (API) Standard: 2610-94: *"Design, Construction,*
- *Operation, Maintenance and Inspection of Terminal and Tank Facilities"*
- The Canadian Petroleum Products Institute (CPPI, 1992*): "Professional Driver's*
- *Manual".*
- Canadian Council of Ministers of Environment (CCME) – Code of Practice (COP) 2003.
- Agnico Eagle fuel transfer procedure.

Ship to shore transfer area

The ship to shore PTA consists of a marine line connection with flange connection and check value. A 400L concrete spill basin is present beneath the connection point. Product is transferred via a 120m x

100mm hose at a rate of 250m^3/h. The ship's pumping system is fitted with an emergency shut off system which is activated when pumping pressure is lost.

Transfer of from ship to shore is performed in conformance with procedures outlined in:

- The National Fire Code of Canada (NFCC);
- The American Petroleum Institute (API) Standard: 2610-94: *"Design, Construction,*
- *Operation, Maintenance and Inspection of Terminal and Tank Facilities"*
- The Canadian Petroleum Products Institute (CPPI, 1992*): "Professional Driver's*
- *Manual".*
- Canadian Council of Ministers of Environment (CCME) – Code of Practice (COP) 2003.

The risks identified under the following table (Section 3) as needing action have been addressed.

4. Analysis of Product Transfer Area Risks

The table below lists potential incidents, outcomes, description of PTA and receiving environments that have been identified for the storage tank system on site. The table also provides an evaluation of identified risks and an assessment on whether further action is required, and a list of mitigation measures.

Table 1: Product Transfer Risk Assessment - refueling station to fuel truck

Potential Incident	Outcome	PTA and Receiving Environment	Spill Consequence	Probability	Potential Impact	Evaluation	Mitigation Measures
Overfill during loading of fuel truck	Approximately 132.27L product is captured in secondary containment	Secondary containment Adjacent soil/gravel area within ~10m Melvin Bay	Low: the product is confined secondary containment. Moderate: the product reaches bare ground. High: the product reaches a water body.	Moderate	Low	No Action Required	Secondary containment with 40000L capacity at tanker connection point Scully fitted with optic overfill prevention system Permanent indoor structure with visual display for operator in cold weather
Overfill device fails	Product flows into 40000L secondary containment			Moderate	Low	No Action Required	Shut off button and tanker overfill pipe
Coupling/equipment fails at pump station-hose connection.	Broken piping/hose releases ~1000L of fuel to adjacent gravel area.			Moderate	Moderate	No Action Required	Shut off button, drainage to low point on roadside. Emergency Response Plan and Spill Contingency Plan Trained spill response staff and equipment for large spills on site.
Absence of inspection (pre-op, checklist)	Faulty component or leak is not detected resulting in slow release of ~1L of product			Moderate	Moderate	No Action Required	Pre-op inspection (daily by M&T and AEM) Standard Operating Procedure (SOP)
Public access	Member of the public attempts to take or release fuel			Low	Low	No Action Required	Signage and surveillance cameras Fuel system security coded Community awareness conducted by AEM
Vehicle contact with building/equipment	Broken piping releases ~1000L of fuel to adjacent gravel area.			Low	Moderate	No Action Required	Secondary containment structure protects fuel station from collision by forming a barrier. Fuel lines connected to tank farm can only release contents of the line.

Table 2: Product Transfer Risk Assessment – refueling station to fuel truck cont.

Potential Incident	Outcome	PTA and Receiving Environment	Spill Consequence	Probability	Potential Impact	Evaluation	Mitigation Measures
Inappropriate equipment for arctic conditions (arm/valve)	Valves and components fail in arctic conditions releasing ~100L of product			Moderate	Moderate	No Action Required	Valves and hoses suitable for arctic conditions installed. Pre-op inspection (daily by M&T and AEM)
Operator spills small amount of fuel while uncoupling hose	~100ml of fuel is captured in secondary containment			High	Low	No Action Required	Portable drip tray used within secondary containment

Table 3: Product Transfer Risk Assessment – Ship to shore

Potential Incident	Outcome	PTA and Receiving Environment	Spill Consequence	Probability	Potential Impact	Evaluation	Mitigation Measures
Leakage if fuel remains in line after off loading and leakage at all couplings in the line (by the boat and outside the connections)	Maximum of ~1500L of fuel is released to Melvin Bay	Secondary containment Adjacent soil/gravel area within ~10m Melvin Bay	Low: the product is confined secondary containment. Moderate: the product reaches bare ground. High: the product reaches a water body.	Moderate	High	No Action Required	Trained Intertek Personal oversee product transfer Line is cleared of fuel following transfer
Coupling/equipment fails at onshore coupling	Maximum of ~1500L of fuel is released to Melvin Bay			Moderate	High	No Action Required	Ships pumping system shuts off if hose pressure is lost. Trained Intertek Personal oversee product transfer Transfer point is up gradient of pumping point so line does not completely drain if uncoupled. Emergency Response Plan and Spill Contingency Plan Marine spill response equipment adjacent to transfer point.
Coupling/equipment fails at offshore coupling	Maximum of ~1500L of fuel is released to Melvin Bay			Moderate	High	No Action Required	Spill contained onboard at pumping area.
Public interference	Transfer hose is damaged by passing boat or transfer impacted by public protest			Low	High	No Action Required	Community awareness conducted by AEM Boat traffic monitored by Desgagnes and Intertek
Operator spills small amount of fuel while uncoupling hose	~100ml of fuel is captured in secondary containment			High	Low	No Action Required	Portable drip tray used within secondary containment

Table 4: Product Transfer Risk Assessment - Ship to shore cont.

Potential Incident	Outcome	PTA and Receiving Environment	Spill Consequence	Probability	Potential Impact	Evaluation	Mitigation Measures
Vehicle contact with piping between transfer point and tank	Broken piping releases ~5000L of fuel to adjacent gravel area, potentially reaching Melvin Bay.			Low	High	No Action Required	Rock barrier protects pipeline from vehicles. Double walled piping installed beneath roadway. Fuel lines connected to tank farm can only release contents of the line.

Please see Appendix A for the calculations relating to the product transfer areas. In summary, potential product spillage, volume has been calculated as follows:

Fueling station: a confirmed maximum delivery rate of 800 L/min and an emergency shut off time of 8 seconds would result in a product spillage volume of approximately 108.72L. Based on 10cm hose at 3m in length, a potential spill at the tank / hose connection would result in an additional volume of 23.55 L, for a total 132.27 L of fuel spilled.

Ship to shore: a confirmed maximum delivery rate of 4166.67 L/min and an emergency shut off time of 8 seconds would result in a product spillage volume of approximately 556 L. Based on 10 cm hose at 122 m in length, a potential spill at the tank / hose connection would result in an additional volume of 957 L, for a total 1512 L of fuel spilled.

5. Mitigation of Risks

Refueling station to truck transfer area
At the vehicle refueling station, a 40,000L secondary containment area was installed to accommodate a fuel tanker in the event of an accidental overfill or connection failure during fuel transfer. This area is a lined and bermed depression where the transfer station and the fuel truck are located during the fuel transfer process.

In the event of a spill three potential receiving environments have been identified for the refueling system: the gravel area surrounding the refueling station and extending a distance of approximately 10 meters, the adjacent soil/ground surface, and the adjacent body of water, Melvin Bay.

Any product amount of 1000L or less that spills onto the gravel area can be recovered using the spill kit and heavy equipment on site. For spills of over 1000L, the product will likely reach the adjacent soil/ground surface and/or the Melvin Bay directly via overland surface flow (depending on the season). The low point containing a double wall culvert would contain the product before reaching soil or Melvin Bay. During winter, the likely hood of product flowing to the shoreline increases; however, snow berms can be quickly installed. Mitigation measures include;

- 60 L secondary containment for hose storage
- 40000L secondary containment for refueling of fuel trucks
- Standard Operating Procedure
- Trained operators
- Spill kit at refueling area containing absorbent pads
- Personnel monitor transfer from viewing window in pump station
- Five wire optic transfer system to prevent overfill
- Containment designed to hold 110% of fuel truck load limit

Ship to shore transfer area
At the marine line connection point, a 400L concrete spill basin was installed to catch small quantities of product in the event of a pinhole leak at the connection point, or during disengagement of the coupling.

In the event of a spill three potential receiving environments have been identified for the fuel transfer system: the gravel area partially surrounding the secondary containment and extending a distance of approximately 5 meters, the adjacent soil/ground surface, and the adjacent body of water, Melvin Bay.

Any product amount of 100L or less that spills onto the gravel area can be recovered using the spill kit and shovels. For spills of over 100 L, the product will likely reach the adjacent soil/ground surface and/or Melvin Bay directly via overland surface flow (depending on the season). During winter, the likely hood of product flowing to the shoreline increases; however, snow berms can be quickly installed. Mitigation measures include;

- 400L secondary containment at onshore connection point
- Pump and 1000L portable containments on standby during transfer if concrete containment overfills
- Trained Intertek Personnel oversee product transfer
- Standard Operating Procedure

- Emergency Response Plan and Spill Contingency Plans on site
- Oil Pollution Prevention Plan on site
- Marine spill response equipment on site

6. Standard Operating Procedure (SOP)

Refueling station to truck transfer area

The AEM procedure for refueling fuel trucks in summarized as follows;

1. Perform an inspection of the vehicle.
2. Park the vehicle in the vicinity of the refueling tank and shut off your ignition.
3. Install wheel chocks on either side of the tanker tire.
4. Inspect the entire working area including the steps up to the HMI and the area in front of the loading arm and scully system; call your supervisor if there are problems.
5. Install the portable spill containment underneath the connection point.
6. Check the maximum capacity for the tanker being used. Ensure to only fill the tanker at 90% of the capacity to have room for fuel expansion at different temperatures, and a safe level for haulage. Verify the current tank level from the electronic gauge on the side of the tanker, fill the tank to 37800 L maximum (18.9 in each compartment).
7. At the valve control panel, lift all the levers up, and make sure the valves are open.
8. Remove the cap of the scully plug and push and twist it onto the receiving end on the truck. Make sure the green light is on before continuing.
9. Connect the loading arm to the tanker.
10. Below is a picture of the final arrangement. Make sure the valve are open on each side.
11. Open the valve on the building.
12. Enter the control room and begin to program the fuel loading on the HMI.
13. Enter the applicable Microload identification and load sequence.
14. Enter the volume measure with the pop-up keypad.
15. Select the tank from which to pump fuel.
16. Select the start button to activate the pump.
17. Once the fueling begins, the operator must monitor the situation diligently; this includes checking for leaks or monitoring any other unusual situations. The operator must be at the connection point at all times during fueling.
18. When finished pumping, close the valve on the building.
19. Disconnect the loading arm first, and then the truck level control.
20. Put the arm back and the truck level control in place. Close the valve.
21. Put the protection bag over the scully and the hose. Verify if the caps are put back on the truck.
22. Put back the portable spill containment, and unhook the overflow hose, install the cap and close the valve.
23. At the valve control panel, pull down all the lever to close valve, and make sure they are closed.
24. Complete the mechanical verification in the pump station, just beside the HMI trailer. Make sure they have no leaks on the equipment.
25. Before you leave, make sure the three doors are locked at the fuel station.
26. Remove the wheel chocks and fully inspect the vehicle before beginning to bring the fuel to the Meliadine Fuel Tank Farm.

27. If you encounter any emergency or a spill occurs, call your supervisor immediately and the supervisor of Agnico Eagle Mine Meliadine.

Ship to shore transfer area

The AEM procedure for refueling tanks in summarized as follows, however the fuel transfer is overseen by Intertek (contracted first responder);

1. The Oil Pollution Emergency Plan (OPEP) must be reviewed on an annual basis and updated prior to the first annual discharge. This will include but not limited to:
   a) Reviewing the phone numbers for emergencies
   b) Updating maps
   c) Review and if necessary update equipment lists
   d) Review roles and responsibilities
   e) Update Declaration
2. Contact Canadian Coast Guard and Transport Canada Pollution Prevention and make them aware of plans for transferring of fuel into our Oil Handling Facility (OHF) for that season.
3. Complete *Inventory report for Spill Response Sea Can at AEM's Oil Handling Facility in Rankin Inlet.*
4. Ensure Shipping Company has provided Hose Testing Annual certification.
5. All personnel who will be a part of the fuel transfer (including Rankin Inlet Supervisor and third part contractor Intertek) must review the OPEP and be familiar with preventive measures to take and with the steps to take in the case of a spill event while fueling.
6. Install and monitor secondary containment underneath each connection of conduit on land.
7. Ensure there is two-way functional communications between the OHF and the off-loading vessel.
8. Ensure there is lighting in place at the transfer flange to provide illumination during any transfers taking place during the low to no light hours.
9. Prior to any discharge Agnico Eagle must receive a copy of the ship/shore checklist completed by the shipping company. Agnico Eagle should also verify this has been completed (as much as realistically possibly without boarding the ship).
10. Contact must be made with both the H&S, Environment, Warehouse and Community Relations Departments prior to the discharge of fuels.
11. The *Pre-discharge Checklist for AEM's Oil Handling Facility in Rankin Inlet* must be completed, signed and provided to the Environment Department prior to discharge.
12. Photos of the complete fuel transfer process should be taken, proving that all above procedures have been reached.
13. During the ship-to-shore transfer, Agnico Eagle will have competent personnel on location at all times to monitor the fuel transfer and maintain contact with the tanker's crew.
14. Monitor the fuel transfer at the beginning of each transfer and after that on an hourly basis checking the manifold, conduit, tank, and any connection points on land for spills and/or leaks. Communication between shore and ship should take place on an hourly basis.
15. Have a fuel spill scenario annually to cover both crews .

7. Conclusion

The Itivia Fuel Tank Farm, owned by Agnico Eagle Mines and located in Rankin Inlet, NU, has recently undergone modifications to mitigate risks associated with transfers of fuel at the ship to shore transfer area, as well as the truck transfer station. A 400L concrete spill basin was installed at the ship to shore PTA, beneath the on-shore connection point from the ship. This ship to shore PTA was designed to contain spills that may occur in the event of a pinhole leak at the connection point, or during unexpected disengagement of the coupling. Additionally, a 40,000L secondary containment was constructed for the truck transfer area. Fuel transfer vehicles now park within a lined and bermed depression, designed to contain spills that may occur from an accidental overfill, coupling device failures, and other spill scenarios while transferring fuels.

In addition to the secondary containment areas noted above, emergency spill response equipment is located near the ship to shore transfer valve on shore. In the event of a spill reaching Melvin Bay, Marine containment booms, anchors, trench shovels, absorbant pads, pumps and a dedicated boat and ATV are accessible year-round, and regular spill response training is conducted with members of the Meliadine Emergency Response Team and Environment Department. Meliadine Environment Technicians also conduct regular inspections of the Itivia site in order to ensure proper spill prevention and containment equipment is available, and that proper fuel transfer protocols are followed. All of the measures noted above are in place in order to contain, mitigate and prevent spills during the process of transferring fuel.

Appendix A - Potential Spill Quantities

Fuel Station to Fuel Truck

Flow rate = 800L/min maximum rate
Scully arm and hose length: 300cm, 10cm diameter

1. Calculate Volume of Spill (from time it takes operator to shut off pumping)
   800L/min = 800/60s = 13.34
   8s = time it takes for operator to turn off the pump should the tank start to overflow

   Volume = 13.34L/s * 8s
   = 108.72
2. Calculate the Volume of the pipe:

   Radius = (diameter of the pipe / 2)

   Radius = (10/2)
   = 5

   Volume of a cylinder: V = πr2h

   Volume = 3.14 * 5^2 * 300
   = 23550

3. 1 Litre = 1000m^3
   Volume in Litres = (volume in cm^3) * (1L/1000cm^3)
   Volume = (23550 / 1000 L)
   = 23.55 L

   Total Potential Spill = 108.72 + 23.55
   = 132.27 L

Therefore, the amount of a potential spill at the site would be 23.55L of fuel in the hose, plus 108.72L (using 8s before shut off) for a total of 132.27L.

Ship to shore:

Flow rate = 4166.67L/min maximum rate
Transfer hose length: 12192cm, 10cm diameter

1. Calculate Volume of Spill (from time it takes operator to shut off pumping)
   4166.67L/min = 4166.67/60s = 69.45
   8s = time it takes for operator to turn off the pump should the tank start to overflow

   Volume = 69.45L/s * 8s
   = 555.6L

2. Calculate the Volume of the pipe:

   Radius = (diameter of the pipe / 2)

   Radius = (10/2)
   = 5

   Volume of a cylinder: V = πr2h

   Volume = 3.14 * 5^2 * 12192
   = 957072

3. 1 Litre = 1000m^3
   Volume in Litres = (volume in cm^3) * (1L/1000cm^3)
   Volume = (957072 / 1000 L)
   = 957.07 L

   Total Potential Spill = 555.6 + 957.07
   = 1512.67 L

Therefore, the amount of a potential spill at the site would be 957.07 L of fuel in the hose, plus 555.6 L (using 8s before shut off) for a total of 1512.67 L.

APPENDIX K – STR’s Cross Reference Table

Table 1. Cross-reference of STS Regs, s. 30 to 32, to this emergency plan for P-50 Diesel Storage Tank System STS EC-00044507

STS Regs reference	Information required	Location of information in this emergency plan
s. 30(1)	The owner or operator of a storage tank system must prepare an emergency plan taking into consideration the following factors:	
s. 30(1)(a)	- the properties and characteristics of each petroleum product (i.e. Jet A1) or allied petroleum product stored in each tank of the system and	- MSDS for P-50 Diesel in Appendix D of the OPEP - Spill Contingency Plan and Hazardous Materials Management Plan, submitted with the annual report
s. 30(1)(a) continued	- the maximum expected quantity of the petroleum product or allied petroleum product to be stored in the system at any time during any calendar year; and	Can be find in section 4.1
s. 30(1)(b)	- the characteristics of the place where the system is located and of the surrounding area that may increase the risk of harm to the environment or of danger to human life or health.	- Site Description outline in section 4.1 and 4.3 of the OPEP
s. 30(2)	The emergency plan must include:	
s. 30(2)(a)	- a description of the factors considered under s. 30(1)	- See the rows above.
s. 30(2)(b)	- a description of the measures to be used to prevent, prepare for, respond to, and recover from any emergency that may cause harm to the environment or danger to human life or health;	- OPEP: s. 10 Spill Procedures s. 10.2 Spill Reporting s. 11 Spill Scenarios and Responses; s. 12 Spill Prevention; s. 12.1 Spill Training; .
s. 30(2)(c)	- a list of the individuals who are required to carry out the plan and a description of their roles and responsibilities;	- OPEP: s. 9 Roles and Responsibilities s. 9.1 First Responder s. 9.2 Emergency Control Group Figure 3. response Management System.

Table 1. Cross-reference of STS Regs, s. 30 to 32, to this emergency plan (continued)

STS Regs reference	Information required	Location of information in this emergency plan
s. 30(2)(d)	- identification of the training required for each of the individuals listed under s. 30(2)(c);	- OPEP s. 12.1 Training and Appendix I Mock scenario
s. 30(2)(e)	- a list of the emergency response equipment included as part of the plan, and	- OPEP s. 7 Equipment and PPE

	the equipment's location; and	
s. 30(2)(f)	- the measures to be taken to notify members of the public who may be adversely affected by the harm or danger referred to in s. 30(2)(b)	- OPEP s. 8.1.1 Communication with the Public
s. 30(3)	The owner or operator of a storage tank system must ensure that the emergency plan is ready to be implemented:	
s. 30(3)(a)	- in the case of a storage tank system that is installed before the coming into force of these Regs, no later than two years after the day on which these Regs come into force (i.e. by 12 Jun 2010); and	N/A
s. 30(3)(b)	- in any other case, before the day on which the first transfer of petroleum products or allied petroleum products into any tank of the storage tank system occurs.	- OPEP v.1.1 Sept 2017 - Spill Contingency Plan v6 March 2017
s. 31(1)	The owner or operator of a storage tank system must keep: - the emergency plan up-to-date and - keep a copy of it readily available for the individuals who are required to carry it out, - as well as a copy at the place where the storage tank system is located if that place is a place of work.	- OPEP is reviewed annually prior every shipping season and a hard copy is available at the Rankin Inlet Marshalling facility during transfer operations - Spill Contingency Plan is reviewed annually season and a hard copy is available at the Rankin Inlet Marshalling facility during transfer operations
s. 31(2)	The owner or operator must notify the Minister of the civic address of each location where the emergency plan is kept.	- No civil address, coordinates are at page ii of this document.

Table 1. Cross-reference of STS Regs, s. 30 to 32, to this emergency plan (continued)

STS Regs reference	Information required	Location of information in this emergency plan
s. 32(1)	If the owner or operator of a storage tank system has prepared an emergency plan with respect to the system on a voluntary basis or for another government or under an Act of Parliament and the plan meets the requirements of s. 30(1) and (2), they may use that plan for the purposes of meeting those requirements.	- OPEP and Spill Contingency Plan
s. 32(2)	If the plan does not meet all of the requirements of s. 30(1) and (2), the owner or operator may use the plan if they amend it so that it meets all of those requirements.	- OPEP and Spill Contingency Plan