



## SAFEMED III Seminar on EMSA's pollution response services

13-14 May 2014



Experience of the EU Member State: Cyprus

### National Contingency Plan for Oil Pollution Combating



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## Why do we need Contingency Plans?

- Oil is a toxic substance which causes severe consequences on humans, the marine life and environment and takes many years to recover but has also,
- Long-term adverse consequences on the quality of human life, on the country's economy and tourism



### THEREFORE:

- To achieve an effective response to a serious oil spill depends to a great extent on the level of preparedness of a country and its organizations.
- Preparedness should be comprising all practical steps and requirements necessary for an immediate and effective response, should an oil spill occur.



## Plan Overview

**The Plan is divided into 4 main sections:**

### 1. Introduction

Scope, risks, objectives, legislation, coverage, properties of oil

### 2. The National System of oil spill Preparedness

Division of responsibilities, responsible national authority, national combat agency, organizational structure, other combat agencies, plan support, international assistance, training and exercises

### 3. The National System of oil spill Response

Levels of Response, notification, initial assessment, planning and strategy H&S, third party services, special arrangements, waste management, wildlife and restoration, claims and compensation, plan update

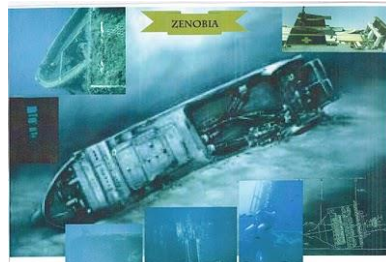
### 4. Supporting documentation - Appendices

Equipment inventory, key contact points, maps, reporting formats, sources of material and personnel, technical guidelines



## 1. Introduction

- The capsizing and sinking of the vessel “ZENOBIA” off the coast of Larnaca in June 1980 was the historical benchmark for the development of oil spill response capacity in Cyprus.
- In 1990, the initial “National Contingency Plan for Oil Pollution Combating” was developed. Revised in 1995, 2001 and 2005.



## Introduction

**A few years ago it became necessary to redraft it in order to reflect to a series of developments in recent years such as:**

- A new government decision in April 2011 related to assignment of duties between the various governmental entities in cases of oil pollution incidents;
- The increasing tanker traffic in the maritime area of Cyprus;
- The increasing oil and gas exploitation activities in Eastern Mediterranean;
- The increase in the number of ship-to-ship transfers of heavy fuel oil (HFO) and other fuel products outside territorial waters in Cyprus EEZ and,
- The placement of an EMSA oil recovery ship in Cyprus for combating pollution in the area, which became operational since in 2011.



## Objectives

- To facilitate a well organized, quick and effective response to marine oil spill incidents in such a way as to minimize any potential adverse effects on the marine environment.
- To assign duties, roles and levels of responsibilities to all parties involved in the preparedness and response structure.
- To provide a synergy between the national arrangements with those of private oil handling facilities in order to arrange for the oil recovery and necessary clean-up operations to emergencies which are beyond the capacity of the polluter.
- For calling out emergency support by third party oil spill service providers, from the European Union and from other countries.



## Risks related to oil pollution

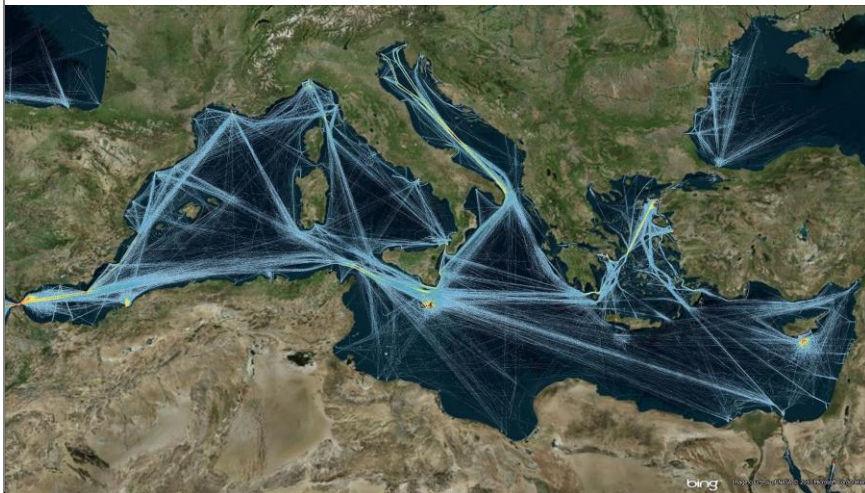
**Cyprus has approximately 640 km of coastline, which is exposed to potential pollution incidents due to routine maritime operations including:**

- bunker fuelling operations of ships,
- hydrocarbon loading or unloading operations,
- ship-to-ship transfer (STS) operations,
- other commercial operations, and maritime casualties
- Oil & Gas exploitation in the Eastern Mediterranean.
- increased shipping and oil tanker traffic



## Risks related to oil pollution

### AIS Tanker Traffic Analysis in the Mediterranean Sea



## Risks related to oil pollution

### Ship to Ship Transfers of Oil (STS)

STS operations in the maritime area of Cyprus accounts yearly **11,5 millions tons** of oil products



STS operations area  
In Cyprus



## Risks related to oil pollution

### Correlation: Tanker size and spill amount

- An operational discharge during HFO transfer at a power station could feasibly result in the release of several hundred tons of oil into the environment, close inshore.
- By experience and past accident analysis, an empirical correlation between the tanker size and spill amount is given in the following table:

Deadweight (DWT) tons	30,000	50,000	70,000	100,000	200,000	240,000
Estimated spill amount	700	1100	3,000	5,500	10,500	15,000

TABLE 8- Correlation between the tanker size and the estimated spill amount



## Legal Instruments

**The following international/regional legal instruments require Contracting Parties to take measures to prevent, reduce, control and combat marine pollution:**

### **UNCLOS**

United Nations Convention on the Law of the Sea

### **OPRC**

International Convention on Oil Pollution Preparedness, Response and Co-operation

### **MARPOL**

International Convention for the Prevention of Pollution from Ships

### **BARCELONA CONVENTION**

Convention for the Protection of The Mediterranean Sea Against Pollution



## Legal Basis

### **Barcelona Convention – Article 4**

#### **ARTICLE 4**

#### **GENERAL OBLIGATIONS**

1. The Contracting Parties shall individually or jointly take all appropriate measures in accordance with the provisions of this Convention and those Protocols in force to which they are party to prevent, abate, combat and to the fullest possible extent eliminate pollution of the Mediterranean Sea Area and to protect and enhance the marine environment in that Area so as to contribute towards its sustainable development.

### **Barcelona Convention – Emergency Protocol – Article 4.1**

#### **ARTICLE 4**

#### **CONTINGENCY PLANS AND OTHER MEANS OF PREVENTING AND COMBATING POLLUTION INCIDENTS**

1. The Parties shall endeavour to maintain and promote, either individually or through bilateral or multilateral cooperation, contingency plans and other means of preventing and combating pollution incidents. These means shall include, in particular, equipment, ships, aircraft and personnel prepared for operations in cases of emergency, the enactment, as appropriate, of relevant legislation, the development or strengthening of the capability to respond to a pollution incident and the designation of a national authority or authorities responsible for the implementation of this Protocol.

## Legal Basis

### Barcelona Convention – Offshore Protocol

#### Article 16 - CONTINGENCY PLANNING

1. In cases of emergency the Contracting Parties shall implement *mutatis mutandis* the provisions of the Protocol concerning Cooperation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency.
2. Each Party shall require operators in charge of installations under its jurisdiction to have a contingency plan to combat accidental pollution, coordinated with the contingency plan of the Contracting Party established in accordance with the Protocol concerning Cooperation in Combating Pollution of the Mediterranean Sea by Oil and Other Harmful Substances in Cases of Emergency and approved in conformity with the procedures established by the competent authorities.
3. Each Contracting Party shall establish coordination for the development and implementation of contingency plans. Such plans shall be established in accordance with guidelines adopted by the competent international organization. They shall, in particular, be in accordance with the provisions of Annex VII to this Protocol.

### National Law 57/1989 (MARPOL ratification law)

Article 10 “requires that during the loading and unloading of oil, those in charge shall implement precautionary measures”.



## 2. The National System of Preparedness

### Responsible Authorities:



#### Department of Fisheries and Marine Research (DFMR)

- Responsible for implementing the “National Oil Spill Contingency Plan”;
- Maintain adequate resources, anti-pollution vessels and equipment.



#### Department of Merchant Shipping (DMS)

- Responsible to call out EU/international assistance in case of larger oil spills beyond national capability;
- Liaise with EU/EMSA in order to contract and mobilize EMSA's oil spill response vessels (i.e. “ALEXANDRIA”).





## Division of Responsibility



Territory	Responsibility of
<b>Shoreline/Coastline</b>	The relevant District Administrations
<b>Within territorial waters</b>	National Combat Agency
<b>Within Port Areas</b>	The Port Operator
<b>Oil Terminals</b> <b>Power Plants</b>	The relevant Oil Company/Power Plant Operator
<b>Offshore Installations</b>	The relevant licensed Offshore Operator



## National Combat Agency

### Department of Fisheries and Marine Research (DFMR)



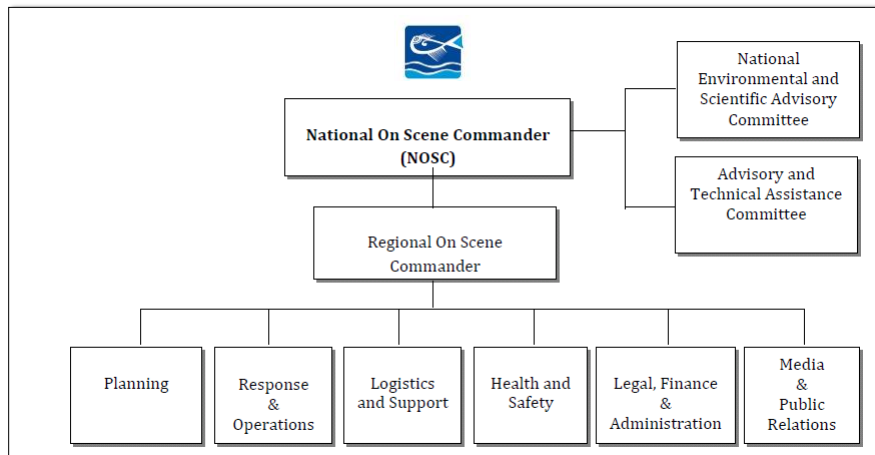
- Oil control, response and implementation of the Plan is the responsibility of the Department of Fisheries and Marine Research (DFMR) of the Ministry of Agriculture, Natural Resources and Environment (MANRE).
- MANRE will appoint the National On-Scene Commander and/or the Supreme On-Scene Commander, as the case may be.
- Responsibilities for responding to oil spills in the Cyprus maritime and coastal areas are shared and undertaken mainly between the National Combat Agency, the District Administrations and the Combat Agencies of port operators, operators of coastal installations handling oil and oil loading/unloading terminals.





## National Combat Agency

### Command Structure



## National Combat Agency

### Duties of the Supporting Groups:

- **Planning:**  
Development of strategic and incident response plans
- **Response & Operations:**  
Oil Containment at sea & shore, recovery, dispersion, beach clean-up
- **Logistics & Support**  
Supply & Transportation of personnel, equipment, material, consumables, removal of waste , catering
- **Health & Safety**  
Site and hazard safety assessment, site access restriction, PPE, sanitation and First Aid provision
- **Legal & Finance & Administration**  
Record keeping, financial, legal, procurement, clerical, accounting, equipment and support resources, claims and compensation
- **Media & Public Relations**  
Provision of updated information on spill development and operations.



## National Combat Agency

### Duties of the Advisory Committees (Team of Experts):

#### ➤ National Environmental and Scientific Advisory Committee

Composed of permanent representatives of government agencies and supplemented by specialized scientific consultants, can support the NOSC with expert advice on environmental issues, sensitivity issues, restoration and recovery etc..

#### ➤ Advisory and Technical Assistance Committee

Formed by national experts from government officers or other public and private bodies, including EU institutions with the task to provide the NOSC with specialist technical advice. Such advice may include the fate of oil, selection and deployment of pollution control equipment, use of innovative response equipment and methods, dispersant use. It may also provide specialized advice in relation to the safety, salvage and towage of ships.



## Other Combat Agencies

**Every coastal oil handling facility (ports & marinas, fishing shelters, oil terminals, power stations) have the operational responsibility to:**

- maintain a Facility Contingency Plan (FCP), coordinated with the National Contingency Plan (NCP).
- to take action in order to respond to any oil spill in the marine environment in accordance with their FCP.
- to maintain an adequate stock of oil spill response equipment and personnel capable of dealing with every identifiable oil spill risk which is likely to occur.



## Other Combat Agencies

- Every operator is required to have arrangements capable of dealing with an oil spill incident of the TIER 3 category.
- This can be achieved either by own resources, or by a mutual aid agreement(s) between the operator and other oil industry stakeholders and/or third party service providers.
- Should a situation develop where the necessary response is beyond the control of the oil handling installation/oil terminal, the Combat Agency will transfer the command of operations to the National Combat Agency.
- In this event, the industry's resources will continue to be involved in the oil spill clean-up and recovery operations under the command of the National Combat Agency and NOSC.



## Tiers (Levels) of Response

Category(Severity) of oil spill (TIER)	Level of Response	Plan Implemented by
<b>TIER 1 -</b>	A relatively small and confined oil spill for which the Combat Agency will be generally able to respond to and clean up a spill utilizing own and local resources. In case additional resources are needed, these will be available from mutual aid agreement, or by utilizing the National Combat Agency	Combat Agency
<b>TIER 2 -</b>	A medium sized oil spill requiring additional resources under mutual aid agreements and/or national assistance. The resources of the Combat Agency will be needed to be supplemented by private third party oil spill responders and if necessary by the National Combat Agency.	Combat Agency + Additional (external) resources
<b>TIER 3 -</b>	A large oil spill requiring national assistance. The Combat agency will require local, regional, national and possibly the intervention of international assistance.	Combat Agency + Additional resources + National Combat Agency



## Priority Areas for Protection

- Commercial Ports
- Electric Power Plants
- Oil Terminals
- Public Beaches
- Tourism areas
- Archaeological sites
- Fishing Farms
- Other coastal facilities



## 3. The National System of Response

### Distribution of national equipment

To ensure for an adequate and rapid response, equipment is distributed around the island, covering the most likely risk scenarios:

- Limassol (main)
- Vasilikos Power Plant
- Larnaca (regional)
- Paralimni
- Paphos



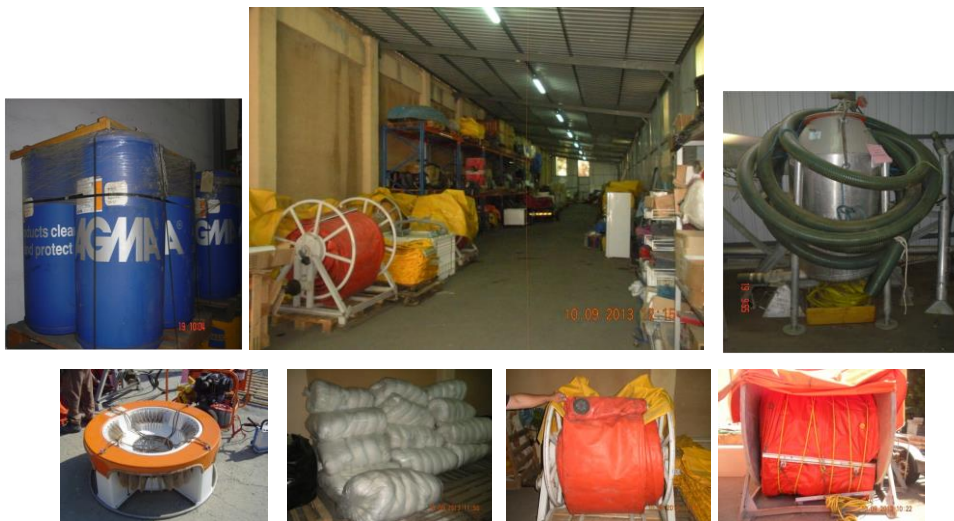
## National Response equipment Inventory

**In general, the national stockpile maintains:**

- Open sea, harbour and beach sealing booms
- Oil recovery equipment (oleophilic disc and brush skimmers, vacuum oil transfer equipment)
- Portable oil storage tanks
- Dispersants
- Boat and individual dispersant Spray systems
- Oil/Water Transfer Pumps
- Power packs (electric generators)
- Auxiliary equipment needed in Oil Spill combating
- Sorbent Material (Booms and pads)
- Beach and rock cleaning equipment
- Oil Spill Kits (for rapid deployment)
- Personal Protective Equipment



## Limassol central stockpile



## Application of Dispersants

### Vessel and boat spray systems



### Aircraft spray systems



## Vessels

### Counter Pollution Tasks:

- patrol
- boom placement & handling
- dispersant application
- Carriage of personnel, equipment and waste

Type	No.	Length (m)	Construction Material
Offshore Patrol Vessel	1	21	steel
Workboat/ Multipurpose	2	12	GRP (Fibre glass)
Inflatable boats	2	8,5	GRP (Fibre glass)



## Aircraft (Department of Forests)

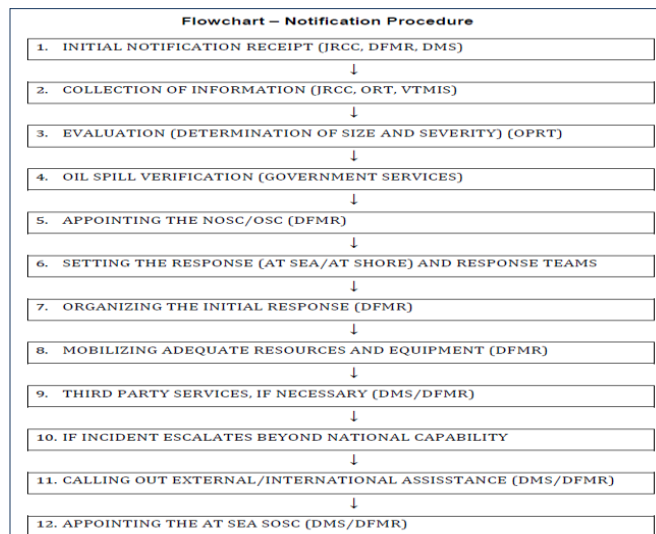
### Counter Pollution Tasks:

- Patrol
- Maritime Surveillance
- Dispersant application
- Monitoring the fate of oil

Type	No.	Dispersant Capacity (tons)
Air – Tractor 802	1	3
Thrush 550	1	2,5



## Notification Procedure





## Steps for the assessment and response to a marine oil spill

Procedure	Required Information
INITIAL REPORT	Position and Location, Time, Extend of spillage, Quantity of Oil spilled, Type of Oil spilled
VERIFICATION	Aerial&Naval Surveillance
ASSESSMENT	Sea State, Currents, Tides, Properties of Oil, Oil Spill Predictions - Fate of Oil
RESPONSE DECISION	Availability and Location of Response Equipment & Personnel, Support tools, Priority setting
RESPONSE	Evaluation of effectiveness of response, top-up and adapt as necessary



## Response Planning and Strategies

**The generally acceptable methods for dealing with oil pollution incidents are given below and shall be selected on a case by case basis:**

- Monitoring and assessing;
- Stopping or limiting the discharge source;
- Restricting access and removing ignition sources;
- Containment and mechanical recovery of the oil spilled;
- Chemical dispersion, whenever the conditions allow;
- Protection of priority sensitive areas (environmental, economic);
- Even if no active response is deemed necessary, regular surveillance and modeling of the fate and trajectory of oil will be necessary.



## Response Planning and Strategies

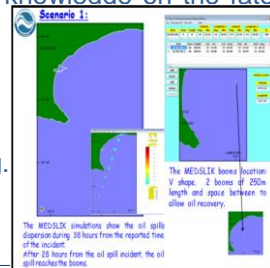
### Hierarchy of actions and counter measures to be employed:

- Control, minimize and/or stop the oil outflow from the source
- if coastal, marine or economical resources are threatened, determine whether to begin response operations, either at sea and/or to protect sensitive resources
- Contain the oil while at sea and avoid its further spread
- Determine appropriate cleanup priorities and other response measures for the shoreline areas affected
- The procedures set out in the Mediterranean Oil Shoreline Assessment Guidelines (REMPEC, 2009) may be used as a guidance and reference.



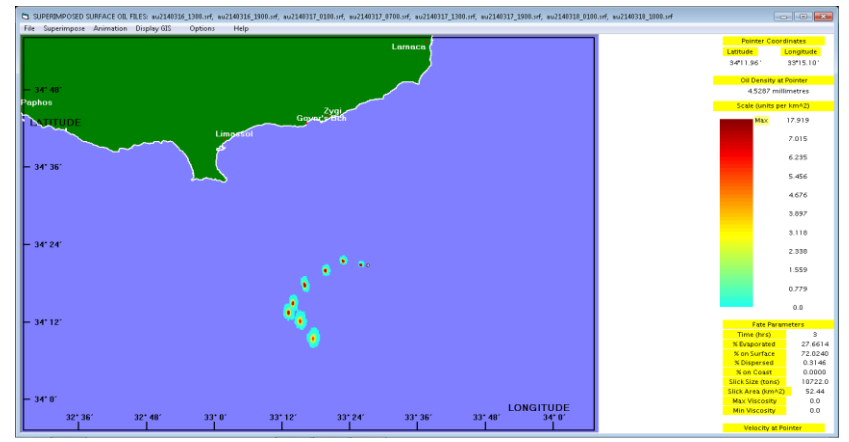
## Oil Spill Drift Prediction

- oil spill trajectory models constitute an essential element in contingency planning and in preparing effective response strategies to combat hazardous oil spills at sea.
- Such models rely on the ability to predict meteo-marine conditions of the sea through the use of atmospheric, wave and hydro dynamical numerical models; in combination with information on the location, rate, nature and characteristics of an oil spill, the derived forecasted fields are used to provide in advance some knowledge on the fate and track that the oil slick will follow in time.
- Upon the request of the NOSC/SOSC, the Oceanography Center of the University of Cyprus may deliver data and prognosis on the fate of oil along with ocean forecasting.



## Oil Spill Drift Prediction

### MEDSLICK (OCEANOGRAPHY CENTER – UNIVERSITY OF CYPRUS)



## Chemical Dispersants

- Spraying dispersants removes oil from the water surface but does not cause the oil to disappear.
- Act to penetrate the oil slick and break it into smaller droplets in order to speed up natural weathering processes.
- Not the preferred response option for spills in Cypriot waters, but is recognized as a potentially effective technique in certain situations (according to type of oil spilled, extent of weathering and emulsification, weather and sea conditions, the size and location of the spill and the resources at risk)
- Dispersant use is restricted to waters above a certain depth and is excluded from waters in the vicinity of National Parks, Marine Reserves and Specially Protected Areas.
- Only dispersants approved i.e. In UK/France are allowed for use in Cyprus



## International Assistance

### EMSA Emergency Response Services

- In case of a large scale marine pollution incident exceeding the national capability, the competent authorities may request assistance from EMSA and the EU.
- The contracting of EMSA Stand-By Oil Spill Response Vessels is subject to prescribed procedure which involves the national civil defense agency, the DG ECHO (ERCC/CESIS), the Department of Merchant Shipping and EMSA



## International Assistance

### Other International Assistance

- International Assistance or specialist advice from other countries may be also requested through the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), in the framework of the regional system for the protection of the Mediterranean Sea established by the United Nations Environment Program (UNEP), or
- through the Sub-regional Agreement for combating major marine pollution incidents affecting or likely to affect the territorial sea, coasts and related interests of Cyprus, Egypt and Israel or at a bilateral State level.



## Waste Management and Disposal

- Oil response operations and clean-up actions may generate substantial amounts of oily debris, either liquid or in solid form.
- Waste can become the biggest challenge and one of the most difficult parts of any response operation.
- Waste and response material shall be preferably reduced, re-used or recycled.
- Logistics at sea and at shore must be in place for the receipt and transport of waste so that the operational groups can maximize their useful operational time at the site.
- The waste from the sea shall not become waste at shore, which means that waste shall be delivered **ONLY** in properly licensed oily waste reception facilities.
- “Mediterranean Oil Spill Waste Management Study and Decision Support Tool” of REMPEC can provide comprehensive guidance.



## Training and Exercises

**To test the efficiency of the national response structure we perform regular national exercises:**

- **At sea (“NIRIIS 2011”, “NIRIIS 2012”)**



- **Shoreline and beach cleaning**



## Other Important Provisions covered in the Plan

- Occupational Health and Safety
- Contracting Third Party Services
- Special Marine Operations, Towage and Salvage
- Environmental Impact Monitoring and Restoration
- Collecting Evidence and Sampling Analysis
- Equipment Recovery
- Claims and Compensation
- Updating the Plan



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Thank You



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