DP WORLD
London Gateway

Oil Spill Contingency Plan

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This document arises from a statutory requirement set out in the Maritime Coastguard Agencies' (MCA) National Contingency Plan which specifically requires ports to produce an "Oil Spill Response Plan" appropriate to their locality and circumstances.

This Oil Spill Contingency Plan (OSCP) has been prepared in accordance with the requirements of the Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998

The London Gateway Oil Spill Contingency Plan (OSCP) is therefore meeting the above statutory obligation but most importantly is specifically designed to:

"Enable a swift, timely and appropriate response from the London Gateway team, to any pollution incident".

The document contains guidance, information, advice and contact details to facilitate an efficient, effective and appropriate response.

Captain Colin Hitchcock
Harbour Master
London Gateway

The responsibility of the upkeep, amendment and review of this contingency plan has been assigned to the Harbour Master, whose responsibility it is to ensure the plan is reviewed in accordance with legislative requirements.

If you would like to contact London Gateway regarding the Port of London Gateway Oil Spill Contingency Plan, please contact:

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London Gateway Port Limited
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Stanford-le-Hope
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Revision History

Date	Part	Page(s)	Brief Details	Amended By
20/07/2012	Entire Document		Created	CH/ ED
6/09/2013	Entire Document		Updated to reflect Operational Activities	ED/JH
30/03/2017	Entire document		Updated to reflect Operational Activities and Procedures	CH/RHJ/TC

MCA Plan Approved Letter

Glossary

ADCP	Acoustic Doppler Current Profiler
DHM	Duty Harbour Master
EA	Environment Agency
MCA	Maritime & Coastguard Agency
MMO	Marine Management Organisation
OMT	Oil Management Team
OPRC	Oil Pollution Preparedness, Response and Cooperation (1990)
VTS	Vessel Traffic Services
(ADCP) BUOY	Acoustic Doppler Current Profiler
SAC	Scientific Area of Conservation
SOLAS	Safety of Life at Sea
SOSREP	Secretary of States Representative
SRC	Shoreline Response Centre
SSSI	Sites of Special Scientific Interest
SINCs	Sites of Importance for Nature Conservation
MRC	Marine Response Centre
PLA	Port of London Authority
LOA	Length Overall
TEU	twenty foot equivalent units
OSMT	Oil Spill Management Team
RSPCA	Royal Society for the Prevention of Cruelty to Animals
RSPB	Royal Society for the Protection of Birds
LONGEX	London Gateway Exercise
PCPSO	Principle Counter Pollution and Salvage Officer
OMT	Operations Management Team
POLREP	Pollution Report

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1.0 Strategy

Responsibility for the Plan

1.1 The London Gateway Harbour Master is responsible for the upkeep and amendment of this Oil Spill Contingency Plan (OSCP) to ensure that information in the plan remains current reviewed in accordance with legislative requirements.

Purpose/ Scope of the Plan

1.2 The purpose of the plan is to provide a structured and clear framework for responding to an oil pollution incident which may occur within London Gateway Port's jurisdiction, including response actions and resources for Tier 1 and Tier 2 oil pollution incidents and to aid the response of a Tier 3 incident.

1.3 The jurisdiction of London Gateway Port extends to 60m from the sea wall. Anything that extends beyond this is under the jurisdiction of the Port of London Authority (PLA).

1.4 In the event of a Tier 2 and 3 oil spill incident in the water London Gateway will draw upon the Thames Oil Spill Clearance Association (TOSCA) and Adler and Allen to assist in the water response. However once the oil is ashore the clean-up operation becomes the responsibility of the local council.

Geographical boundaries of London Gateway Port

1.5 Situated on the north bank of the River Thames in Essex. London Gateway's jurisdiction as a Harbour Authority extends to 16m into the River Thames and also includes the newly created mudflats; Stanford Wharf Nature Reserve (located to the West of London Gateway, Essex) and Salt Fleet Flats (located on the south side of the River Thames opposite London Gateway in Kent).

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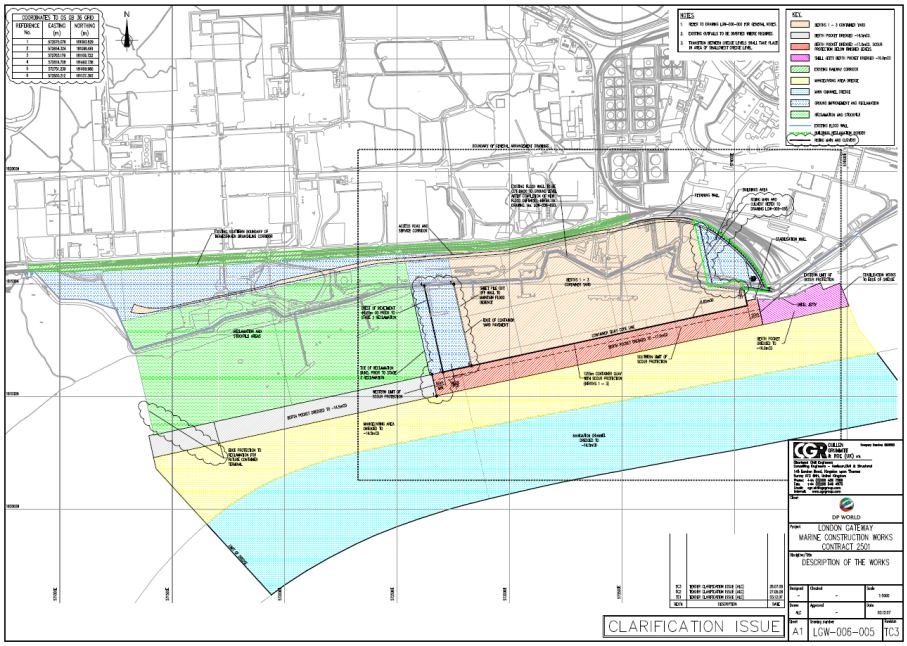
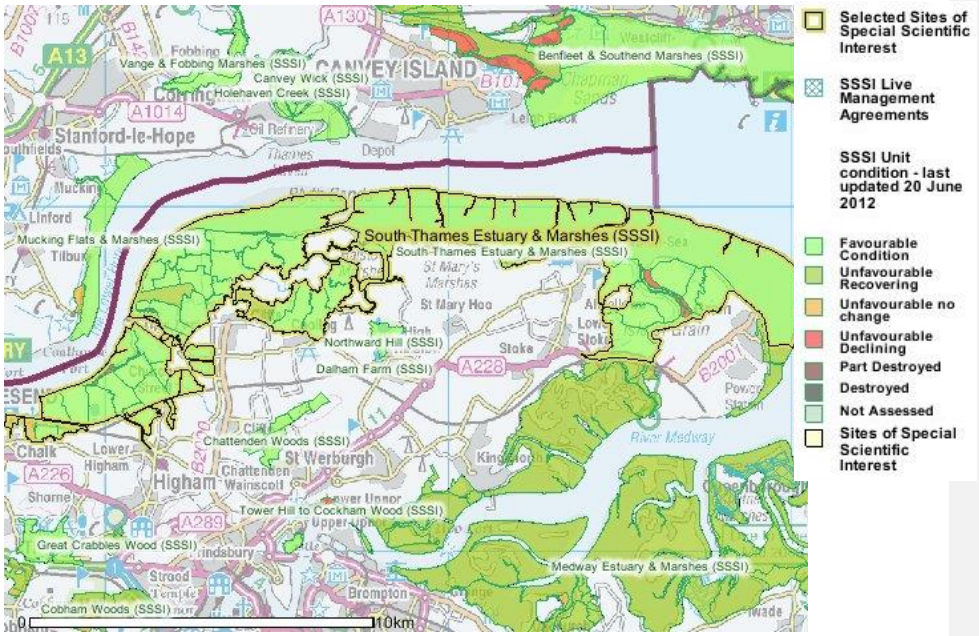
1.6 Figure 1 outlines the 60 metre limit surrounding London Gateway.

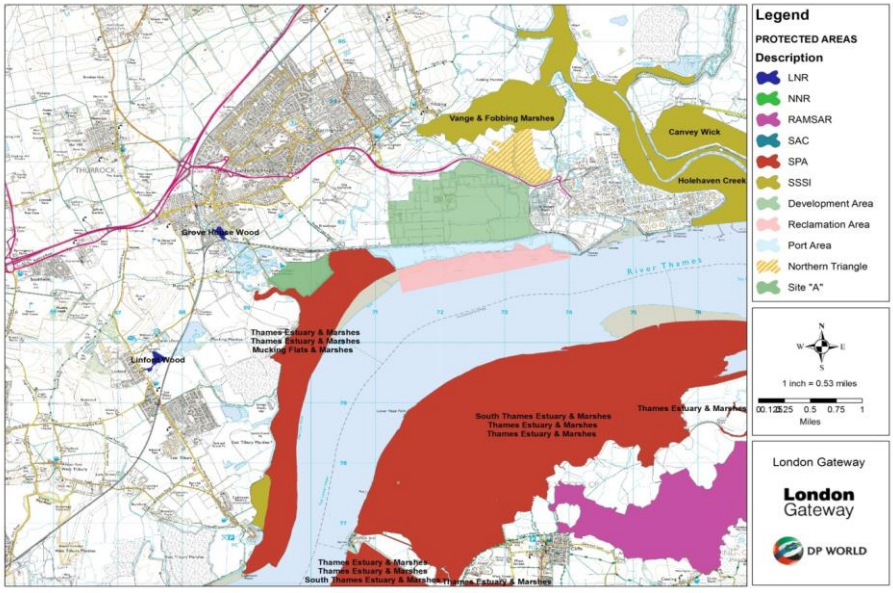
Figure 1



Environmental Setting

1.7 The River Thames is an iconic river and is a major national and local resource for both the economy and personal well-being. The Thames water quality has improved dramatically in the last 50 years and is ecologically diverse estuary. It provides an important 'wildlife corridor' for migrating species, nursery areas for juvenile fish including commercially important fish stocks, foraging grounds for birds and marine mammals and supports a myriad of habitats throughout. London Gateway's harbour limits extend to cover areas of important scientific interest. It is necessary to be aware and prepared of these important environmental areas and how they can be affected by an oil spill incident.





Introduction to Oil Spills and the Requirement

1.8 Statistics show that over 80% of marine oil spill incidents occur within ports and harbours. A concentrated amount of commercial operational and industrial activity takes place in these busy environments. Harbour authorities have overall responsibility for the safety of marine operations on waters within their jurisdiction. The area of jurisdiction for London Gateway Port as is shown in figure 1. It is better to prevent and prepare for incidents, rather than be surprised by them once they have occurred, this will save time on the clean-up operations and increase the recovery time thereby ensuring that the port can return back to its fully operational status. Incident preparedness is paramount to all environmental, commercial and economic interests.

1.9 "Marine pollution" in the National Contingency Plan refers to pollution by oil or other hazardous substances. "Oil" means oil of any description (see section 151 of the 1995 Act) and "other hazardous substances" are those substances prescribed under section 138A of the 1995 Act. This covers any substance that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

Legal Background for Marine Pollution Contingency Planning

1.10 As a party to the UN Convention on the Law of the Sea (UNCLOS), the UK has an obligation to protect and preserve the marine environment.

1.11 Section 293 of the Merchant Shipping Act 1995, as amended by the Merchant Shipping and Maritime Security Act 1997, gives the Secretary of State for Transport the function of taking, or co-ordinating, measures to reduce and minimise the effects of marine pollution. The Environment Act 1995 places similar duties on the Environment Agency for England and Wales with respect to pollution from land-based sources.

1.12 The UK Government also has obligations under the International Convention on Oil Pollution Preparedness, Response and Co-operation 1990 (the OPRC Convention). The Merchant Shipping (Oil Pollution Preparedness, Response and Co-operation Convention) Regulations 1998 (SI 1998 No 1056) implement the obligations of the Convention. In particular, they require harbour authorities to have a duty to prepare plans to clear oil spills from their harbour and for those plans to be compatible with the National Contingency Plan for Marine Pollution from Shipping and Offshore Installations (NCP).

1.13 The NCP was first published by the MCA in January 2000, a revised document was published in August 2006. It sets out the circumstances in which the Maritime and Coastguard Agency deploys the UK's national assets to respond to a marine pollution incident to protect the overriding public interest. The plans prepared by harbour authorities, oil handling facilities, coastal local authorities and offshore installations underlie this national plan and provide detailed information on the local response to marine incidents. They should also describe arrangements for mutual support and need to be fully compatible with plans that operate at national levels.

Other legislation that is relevant to this Contingence Plan is:

1.14 the Dangerous Vessels Act 1985

The Port Marine Safety Code recognises the potential need to give directions in relation to a dangerous vessel and states that this should be addressed in the port's safety management system. Dangerous vessels are those which, because of their condition, or the nature or the condition of anything they contain, might involve a grave and imminent danger to the safety of persons or property. A harbour authority should hold contingency plans to deal with the threat

posed by dangerous vessels when admitted to, or ordered to leave the port. These should also cover the threat of marine pollution from such vessels which may sink or founder in the harbour thereby preventing or seriously prejudicing the use of the harbour by other vessels.

1.15the Dangerous Substances in Harbour Areas Regulations 1987 (SI 1987 No 37)

The Port Marine Safety Code also notes that harbour authorities have a duty to prepare emergency plans for dealing with substances which are dangerous owing to their condition or the condition of their packaging, or the vessel on which they are being carried is such as to create a risk to health and safety. To the extent that such substances are hazardous to port marine operations and can lead to marine pollution, guidance is offered on contingency planning. The Code also reminds harbour authorities that such plans must also extend to dangerous substances brought to the port from inland, but as this is not a marine operation it falls outside the scope of these Guidelines..

1.16The UK also has obligations under the Safety of Life at Sea Convention (SOLAS) to provide shelter for maritime casualties which may require use of waters within a port as a place of refuge. MCA and SOSREP are responsible for discharging this SOLAS obligation. In this connection, they aim to have an assessment of potential refuges in all areas of the UK's territorial waters, and to work with harbour authorities whose facilities might be called upon for this purpose.

Consultation

1.17In preparing this report the following authorities and agencies have been consulted;

a) Marine Management Organisation
b) Natural England
c) Environment Agency
d) Essex County Council
e) Thurrock Council
f) Adler & Allan Limited
g) Port of London Authority
h) Kent County Council
i) Castle Point District Council

Interfacing Contingency Plans

1.18Whilst this Oil Spill Contingency Plan is specific to the London Gateway Port, there are other emergency plans from third parties that should be accounted for in case of a major oil spill. In particular:

- Port of London Authority,
- Shell UK Limited or Shell Refinery Company Limited
- Essex County Council's
- Thurrock Borough Council
- Kent County Council
- Brett Aggregates (Kent)
- Tilbury Port
- Tilbury Power Station

1.19A Tier-3 oil spill incident may result in the Maritime and Coastguard Agency (MCAA) to decide to implement the National Contingency Plan (NCP). In the event of this occurring the MCA will take control from a Marine Response Centre (MRC). If the MCA formally take over the response and

clean-up operation then London Gateway's oil spill response resources and facilities will be made available to the MCA.

Summary of Risk Assessment

Description of oil spill risk, associated quantity and type of oil likely to be encountered. The additional risk associated with land-based sources within the Port jurisdiction should be included

Categories of Incident

1.20 Oil Spill Contingency Plans classify incidents using a three-tiered response system. Tier 1, Tier 2 and Tier 3 have to be identified and classified by the Harbour Master however the classification of the incident may alter during the response process. The definitions of the tiered levels are as follows;

Table 1: Tiered Levels of Oil Spill Response

Category	Description	Authority to Increase Response Capability
Tier 1	A small operational spill (<0.2m^3) when events can be controlled immediately (within 30 minutes of initial notification) by on-site resources, without recourse to outside intervention	Harbour Master
Tier 2	A medium sized spill (0.2m^3 – 50m^3) beyond the capability of London Gateway that would require the assistance of outside contractors, including TOSCA.	Harbour Master/PLA/TOSCA
Tier 3	A large sized spill (>50m^3) beyond the capability of local and regional resources which would be dealt with using the assistance of outside contractors and agencies.	MCA Counter Pollution Response SOSREP (Counter Pollution and Salvage)

2 Incident Organisation

2.1 A Tier 1 incident will involve only the Harbour Authority and the relevant personnel appointed by the Harbour authority to assist with the response.

2.2 A Tier 2/3 incident will have an Oil Spill Management Team (OSMT) deployed that will consist of London Gateway personnel and external organisations who will be contacted by the Harbour Master. Not all of the external personnel may be needed at the same time. The OMT will be established in the Incident Control Room

2.3 The Designated Person Harbour Master will fulfil the role of the Harbour Master in event that the Harbour Master is unavailable at the time of the incident.

2.4 The OSMT will provide the command and control structure to co-ordinate and direct incident response.

Table 3: Oil Spill Management Team

Management Team		**Support Team**
Internal Personnel	**External Organisations**	
Harbour Master Health & Safety Manager Duty Shift Manager Communications Manager Environmental Officer	<u>Authorities</u> PLA – VTS Control MCA/SOSREP <u>Others:</u> TIER 2 Contractor Salvor Vessels Agent Emergency services P&I Club Other Oil Companies (as appropriate)	Marine Technical Advisor Historian <u>Local Authorities:</u> Essex County Council Thurrock Council Castle Point District Council Kent County Council <u>Government Bodies:</u> Natural England Environment Agency DEFRA

2.5 The Harbour Master requires the transfer of responsibility for managing the response to be formally documented prior to relinquishing overall control of at-sea counter pollution measures to the MCA.

Tier-1 Incident

2.6 The Duty Shift Manager or Harbour Master activates oil spill response on the land.

2.7 In the event the incident escalates from a Tier 1 to Tier 2 the Harbour Master will mobilise a senior representative to attend. The London Gateway Harbour Master will decide whether to set up an Oil Spill Management Team.

Tier 2 Incident

2.8 The Harbour Master will establish and chair an Oil Spill Management Team in the Incident Control Room.

2.9 The team differs according to the scale of the incident (refer to Table 3)

Tier 2 Responder

2.10 London Gateway Port have subscribed to the Thames Oil Spill Clearance Association (TOSCA), this provides 24hour response to oil spills between Tower Bridge and Canvey Island

2.11 Adler and Allen Limited have been commissioned by London Gateway Port to provide their Tier 2 response service. Following a call to their centre (0208 5557111) Adler and Allen Limited are contracted to respond within 3 hours.

2.12 London Gateway Port Limited has a small stock of spill response equipment but in the event of a Tier 2 incident further external help from TOSCA and Adler and Allen will be required.

Tier 3 Incident

2.13 The Harbour Master will establish and chair an Oil Spill Management Team and will include the representatives in Table 3.

Incident Control Arrangements

2.14 Following a significant (Tier 3) incident, a Marine Response Centre will be established at No.1 London Gateway (at the western end of the Port, adjacent to the main Port access road. Another facility is available at Amenities Building (within the Port at the eastern end, ISPS security standards will apply to personnel, if No. London Gateway is unavailable for any reason.

2.15 In the event of the National Contingency Plan being activated by the MCA, establishment of a Shoreline Response Centre maybe required. If required a Shoreline Response Centre will be established in the equipment workshop at the Eastern end of the port.

2.16 Appropriate members of the OSMT will re-deploy to the SRC as requested by the MCA and local authorities.

2.17 A SRC may be established during a Tier 2 incident depending on the area affected or potentially affected by the incident.

3.0 Reporting

CG77 POLREP (see Appendix F), together with internal and external reporting procedures. Checklists should be included for sampling (MCA's STOp Notice 4/01)5, spill assessments, incident briefing, personal log and incident log (see Appendix G).

3.1 The extent of notification of external organisations and authorities will be determined by the initial tier classification of the incident.

3.2 Responsibility for external notification and the completion of POLREP CG77 lies with the Harbour Master. The Environment Agency and the PLA VTS should also be informed of 'all discharges, or potential discharges of polluting materials to the sea'. Environment Agency notification Contact should be made via the 24hr telephone hotline number phone: **0800 807060**

3.3 All the forms that are in this section can be located on the LG electronic file management system Phone the Environment Office (**EXT. 0137564800**) for guidance, Harbour Master and Environment team members

3.4 The POLREP Form and instructions for completion can be found in Appendix A.

3.5 The details should be relayed in the first instance to Port Control, which is manned 24 hours a day, 365 days of the year. Reporting to Port Control can be made via the following means;

Telephone 01375648380
Marine Based VHF Radio Channel (73) (24 Hour)

3.6 Internal Notification Guidelines can be seen in Table See section for contact details

Table : Internal Notification Guidelines

Tier	Organisation
1/2/3	Harbour Master
1/2/3	CEO
1/2/3	Operations Director
1/2/3	Duty Shift Manager
1/2/3	Control
2/3	Health and Safety manager
2/3	Communications manager

3.7 External Notification Guideline can be seen in Table. See section for contact details

Table : External Notification Guidelines

Tier	Organisation
1/2/3	Environment Agency
1/2/3	1/2/3 MCA (via POLREP) MFA
2/3	Thurrock Council
2/3	Natural England
2/3	Adler & Allan Limited
2/3	Kent County Council
3	Essex Fire and Rescue Service

3.8 The LG Communications department will issue a press statement in the event of a large pollution incident.

4.0 Adler and Allen Briefing Report see to Appendix D.

In order to access Adler & Allan services in the event of an oil spill incident please call:-

Adler & Allan - Tel: + 44 (0)800 592827

If calling from outside of the United Kingdom ensure that your country code precedes the telephone number.

These telephones will be manned on a 24-hour basis. The caller will be asked to provide:-

1) Name of Caller
2) Name of Company
3) Location of Caller
4) Telephone Number including prefixes
5) Brief details of the incident

The A&A Duty Manager will then contacted and make contact with the requesting party.

Once contact has been made further details will be collected to enable a response strategy to be determined.

A E-MAIL LETTER AUTHORISING THE RESPONSE WILL BE REQUIRED FROM ONE OF THE NOMINATED REPRESENTATIVES OF THE COMPANY.

Adler & Allan Fax: + 44 (0) 208 5193090

Spill assessment

4.1 The Shoreline Response Officer nominated by the Officer in charge of the incident will collect the sampling kit from the oil spill container (located on the eastern return) and check that it has the required equipment (bottles, sealing labels, scraping tools etc.) and reporting forms to record the sampling throughout the process.

4.2 Oil thickness can be quantified by using the guide shown in Table;

Table 2: Oil spill appearance and thickness.

Appearance	Thickness
Silver Sheen	<0.0001 mm
Rainbow Sheen	0.0001mm - 0.003 mm
Light Brown/ Black slick	0.003mm - 0.1mm
Dark Brown/ Black slick	>0.1 mm

To determine an approximate quantity, the following formula should be used:

L (metres) x W (metres) x Maximum Thickness (mm) = Cubic Metres 1000

Sampling

4.3 Samples should be taken as soon as possible, by a qualified designated representative before the oil becomes weathered.

4.4 A minimum of three samples should be taken for each spill location. These samples may be required as evidence in legal proceedings. Guidance of collecting samples is given in MCA sTOP Notice 4/2001 found in Appendix I.

4.5 The completed STO notice should be sent to the MCA once the samples have been taken.

4.0 Action Cards

Introduction

4.1 This section outlines the steps required to be taken during a pollution incident event. Its purpose is to:

a) To guide Port personnel through the procedure of managing an oil spill within the jurisdiction of London Gateway Port.
b) To mitigate the impacts of an oil pollution incident within London Gateway Port.
c) To facilitate those involved in the response of a pollution incident to effectively communicate with the parties involved and to ensure the optimal deployment of available resources.

4.2 The plan is specifically detailed to enable London Gateway Port to respond to a Tier 1 marine based oil spill pollution incident within the jurisdiction of London Gateway Port, and to assist external parties with a Tier 2 or 3 incidents within the Port's 60 metre jurisdiction. Furthermore, London Gateway has a duty to plan for Hazardous and Noxious Substances and as a result of this there is a contract with waste management contractors.

4.3 In the event of a Pollution Incident an Initial Pollution Report (POLREP CG77) should be completed by the Harbour Master and submitted to the MCA as soon as possible.

4.4 The action cards are split into four sections:

Alert: The different notifications required internally and externally
Initial Actions: Actions required immediately to initiate the response
Further Actions: Actions required when a response is underway
Final Actions: Actions required to be completed before the response can be officially stood down/ handed over

Action cards are included for the following positions:

1. Duty Shift Manager
2. Harbour Master
3. Duty Shift Security Manager
4. Historian, Administration & personnel (Supply & Distribution)

Operations planning and notification of key team members and authorities

See appendix -

Incident briefing, Personnel log and Incident log

4.5 The Incident briefing checklist is located in Appendix B

4.6 The Personnel log template is located in Appendix C

4.7 Duty Shift Manager

Key Responsibilities

- Overall control of Emergency until relived by Harbour Master
- Receive information / report of oil spill incident
- Maintain communication with all vessels in vicinity. Confirm all operations impacting the area have stopped.
- Confirm the source of the spill and that is has been isolated where safe and possible
- Assess Impact of the incident ensuring the effect of the spillage has been minimised
- Arrange the appropriate people & resources
- Inform PLA
- Contact Duty Shift Security Manager to inform Harbour Master
- Carry out internal notifications

Step	Actions	Additional Information
Alert	☐ Harbour Patrol Launch(via PLA VTS) ☐ Inform Vessel (if involved) and ensure the vessel has contacted their Agent ☐ Alert Control Room ☐ Alert Neighbours if appropriate (via Security)	
Initial Actions	☐ **STOP ALL TERMINAL OPERATIONS** ☐ Obtain as much information as possible from observer ☐ Commence Personnel Log ☐ Make an immediate assessment of the situation ☐ Identify source of spillage/ leak & approximate amount spilt ☐ Oil spill being caused by an interceptor malfunction ☐ Request the quantity of oil split from the ships master if relevant ☐ If possible attempt to isolate/ stop & reduce the source of spill ☐ Mobilise Patrol Launch to investigate incident via PLA DPC ☐ Assess/ Classify the situation ☐ Ensure sample of spilt product is retained ☐ Issue General Warning to all Vessels in the vicinity ☐ Verify Information for POLREP Notification ☐ Mobilise Adler & Allan Ltd via e-mail if required to escalate to tier 2/3 ☐ Ensure the use of CCTV Cameras is utilised ☐ Initiate Incident Log	
Further Actions	☐ If a Vessel is involved notify the master or duty officer ☐ Evaluate hazards and the safety of personnel and equipment at or near the scene of the equipment. ☐ Brief and then assist the Harbour Master as required ☐ Standby to assist response at Quayside	

	☐ Perform first level of clean-up measures using available equipment ☐ Handover responsibility of incident to Harbour Master	
Final Actions	Submit Personal Log to Harbour Master	
	Attend debrief	

4.8 Harbour Master

Key Responsibilities

- Confirm spill classification
- Mobilise Tier-2 Contractor Adler & Allan Limited if necessary
- Liaise with all Site Staff, if required call in additional personnel via security
- Establish Control Centre if required
- Authorise expenditure
- Brief, Operational Command and Support (as required)
- Ensure Statutory Reporting requirements (POLREP, EA)have been undertaken
- Amend Oil Spill Contingency Plan as required

Step	Actions	Additional Information
Alert	☐ Environment Team ☐ MCA (POLREP CG77) ☐ Coastguard ☐ PLA TOSCA ☐ Adler and Allen* (if Tier 2) ☐ Internal OMT members including Operational Command ☐ Environment Agency ☐ Local Authorities/ Natural England/ DEFRA if appropriate ☐ Shell Haven Terminal (if appropriate ☐ External OMT members	
Initial Actions	☐ Liaise with Duty Shift Manager ☐ Liaise with PLA TOSCA ☐ Visit/ Confirm/ Amend Classification if indicated ☐ Consider waste disposal issues such as road tanker mobilisation etc. ☐ Set up OMT and brief them on the incident. Request Adler & Allen/ PLA representation in OSMT ☐ Initiate Personal Log ☐ Request Adler and Allan or TOSCA to take samples of the spilt product	
Further Actions	☐ Convene OSMT and decide upon Response Strategy/Operation ☐ Request for vessel's Master to forward electronically an MSDS of product that is leaking ☐ Brief CEO	
Final Actions	☐ Terminate clean up ☐ Prepare Incident Report (POLREP) ☐ Collate Personal Logs of relevant Personnel ☐ Hold Debrief for all involved in response operation	

* Typical Adler & Allen Response Time:
- within normal working hours (06:00 – 16:00)
  - Minimum: 1hr 30minutes
  - Maximum: 4hrs
- Outside normal working hours
  - Minimum: 2hrs 30 minutes
  - Maximum: 6hrs

4.7 LG Port Tug Crew

Key Responsibilities

- Initial assessment of situation
- Assist Harbour Master with classification
- Maintain communication with Port Control Officer
- Collect evidence/samples where requested
- Assist in the deployment of absorbents, booms and dispersants as necessary

Step	Actions	Additional Information
Initial Actions	☐ Proceed to location ☐ Investigate Cause/Source of spillage ☐ Provide DHM/Port Control and PLA VTS with information	
Further Actions	☐ Initiate Personal Log ☐ Collect samples and take photographs where requesated ☐ Track the leading edge of the slick and provide co-ordination of at sea response ☐ Deploy any absorbents/ deflector booms required ☐ Survey the shoreline ☐ Provide detailed situation reports to the Harbour Master/OSMT	
Final Actions	☐ Submit Personal Log to Harbour Master ☐ Attend debrief	

4.8 Terminal Operators

Key responsibilities

- Notify Control Room and stop all operations via Control Room/Duty Shift Manager
- Isolate where safe and possible
- Minimise the effects of the spillage
- Assist in the assessment of the category of the incident

Step	Actions	Additional Information
Alert	☐ Vessel ☐ Terminal Control Room	
Initial Actions	☐ STOP ALL OPERATIONS ☐ Identify source of spill/ leak and estimate size ☐ Verify the material and location ☐ Isolate where safe and possible and reduce the source of spill ☐ Request closure of drainage system in the area ☐ Do not leave a leak unattended if safe and possible ☐ Contain the spill where safe andpossible using available oil spill equipment ☐ Take samples of the product ☐ **Protect against fire and explosion** ☐ Assess damage or equipment failure and action required to avoid further problems ☐ Take part in initial investigation determining the cause of the incident.	
Further Actions	☐ Brief Duty Shift Manager and Harbour Master ☐ Standby to guide response personnel at quayside ☐ Perform first clean up measures	
Final Actions	☐ Submit Personal Log to Harbour Master ☐ Evaluate hazards and safety of personnel and equipment at the scence ☐ Attend debrief	

4.09 Security Control

Key responsibilities

- Direct attending Emergency Services as required
- Facilitate access onto site for external support contractors
- Commence log of incident/ communications

Step	Actions	Additional Information
Alert	☐ Thames Business Park ☐ Shell	
Initial Actions	☐ Call emergency services when requested by the Duty Shift Manager/ Harbour Master ☐ Direct personnel to the appropriate location ☐ Ensure only the appropriate people are allowed onto site ☐ Control access of non-essential personnel to the quayside/ spill location ☐ Keep press and medial away from site	
Further Actions	☐ Standby to assist where required	
Final Actions	☐ Submit Emergency Incident Log to Shift Manager/ Harbour Master ☐ Attend debrief	

4.10 Historian, Administration & personnel

Key Responsibilities:

- Ensure accurate records of the incident has been captured
- Provide relevant documentation & drawings as required
- Ensure stationary requirements are available in incident room

Step	Actions	Additional Information
Alert	☐ Not applicable	
Initial Actions	☐ Ensure the maintenance of proper controls and documentation	
Further Actions	☐ Maintain records for insurance claims	
Final Actions	☐ Consolidate all relevant logs ☐ Attend debrief	

4.11 Environmental Senior Officer

Key Responsibilities

- Assist Duty Shift Manager
- Assist with contacting relevant Environmental Organisations
- Monitor environmental impacts
- Collect evidence/samples/photographs

Step	Actions	Refer to
Initial Actions	Confirm spill classification	Part 2
	Advise on response strategy and equipment to be used	Appendix II
	Assist Duty Shift manager/OSMT as required	Part 3
	Initiate Personal Log	Part 11
	Identify Sensitive Areas that might be affected refer to Appendix H	
Further Actions	Co-ordinate taking of samples/ photographs	Part 4
	Monitor environmental impacts of spill	Part 5
	Consider and help mobilize wash down areas	
	Notify relevant environmental organisations of Pollution Incident*	Part 9
Final Actions	Submit Personal Log to Harbour Master	
	Assist with preparation of Incident Report Final Actions (POLREP)	Part 11
	Attend debrief	

* The Environment Agency should be informed of 'all discharges, or potential discharges of polluting materials to the sea'. Contact should be made via the 24hr telephone number phone, 0800 807060.

4.12 Oil Spill Incident Checklists

- Oil Spill Assessment Checklist
- Incident Briefing Checklist
- Personnel Log-Checklist
- Incident Log
- Deployed Resources, Materials & Equipment Inventory Log
- Oil Spill Sampling Checklist

4.14 Oil Spill Assessment Checklist

OIL SPILL ASSESSMENT CHECKLIST	
This checklist is designed to assist those personnel who have the responsibility of assessing the oil spill incident. These personnel are likely to be: – Person Sighting Spill – Offshore Installation Manager (OIM) – Providence Offshore Drilling Supervisor	
STEP	**GUIDANCE**
Determine Essential Details	– Location of pollution incident – Source of spill – Oil type – Extent of oil spill – Time of incident – Potential hazardous circumstances – Any other relevant information (Particularly: is spill contained or ongoing?)
Assess Safety Hazards	Until otherwise established, assume oil spill is giving off potentially dangerous light ends (i.e. gas or hydrocarbon vapours). ELIMINATE IGNITION SOURCES Approach Oil Spill from upwind to reduce effects of vapours APPROACH ONLY IF CONSIDERED SAFE TO DO SO!
Determine Oil Spill Source	If source unknown, investigate with care. Instigate actions to stop spillage at source. IF SAFE TO DO SO!
Estimate quantity of Oil released if exact amount unknown	Refer to Section 4.2 - Oil Spill Quantification.
Assess prevailing and if possible future weather conditions	Determine: Wind speed and direction State of tide and current speed Sea state
Predict oil fate; determine direction and speed of oil movement in addition to weathering characteristics	Refer to Section 4.3 – Manual Calculation of Slick Movement

4.16 Incident Briefing Checklist

Date		**Time**	
Spill Location			
Vessel(s) Involved			
Advised by			
Wind		**Sea State**	
Oil Drift Direction & Estimated Recovery Area			
Health & Safety Issues	Has source of spill been isolated Are any odours detectable from spill Are flammability checks required	YES/NO YES/NO YES/NO	
Area affected	Length……(metres) x Width…….(metres) =……m2		
Physical Appearance	Windrows Small patches Large Patches Continuous Slick		
Colour	Silver Sheen, Iridescent, Light Brown, Dark Brown, Mousse		
Other Considerations	Will shipping programme be interrupted Verification of report by marine staff Is there a hazard to navigation Should an exclusion zone be established Weather focus known Do any vessels in vicinity require notification		
Notifications	Technical Services Harbour Master PLA DPC		
Duty Officer			

4.17 Personal Log Checklist

Item	Guidance
☐ Safety Hazards	

Response Guidelines

Identification of immediate response priorities – mobilising or placing resources on standby, establishing which resources will be utilised within prioritised response sites - this may be in the form of booming plans and/or tactical response plans. (Give access routes and grid references with regard to booming plans.) Outline the philosophy and objectives behind pre-agreed strategies for response at sea, within coastal zones and on shorelines including limiting factors and adverse conditions. Early identification of environmental, commercial and recreational sensitivities as collated within the relevant data section of the plan. (See Appendix D for Nature Conservation Organisation guidance). Identification of interim waste storage sites, treatment sites and disposal options.
A method for predicting the fate of spilled oil should be provided which may include the results of modelling exercises, where appropriate. If modelling is considered to be a useful predictive tool, ports should identify those with capability to undertake such a task. Consideration should be given to places of refuge and beaching areas for the stabilisation of stricken vessels,

4.7 Following the initial report of an oil pollution incident to the Harbour Master, it is his responsibility to confirm the incident details and initiate an appropriately tiered response.

4.8 The Harbour Master/Duty Shift manager is responsible for:

- Mobilising the Port's response equipment for Tier 1 category incident
- Informing the PLA DPC to initiate TOSCA response
- The attendance of external contractors in event of a Tier 1/ 2/3 incident
- Making arrangements for the safe storage and legal disposal of wastes arising from the incident.
- Ensuring necessary reporting arrangements to the MCA & EA.

4.9 Members of personnel involved in an oil spill response operation should be trained and equipped with action cards, ready to liaise with the Harbour Master/ Shift Manager. The following members have personal action cards that can be found in Part 10:

- Incident Observer
- Port Control Officer
- PLA VTS Control Room and Port Marine Craft Crew
- Environmental Officer
- Duty Harbour Master Tier 1
- Historian

4.10 The person reporting the spill should be prepared to provide the following information to their Duty Shift Manager;

- (vessel if known)
- Location (grid reference/ landmarks)
- Nature of pollution
- Extent of pollution
- Any known hazards associated with pollution

Dispersants

4.11 As a strict policy, London Gateway will refrain from the use of artificial dispersants in response to an oil spill due to the local seabed topography and the sensitivity of the surrounding receptors. Should the use of artificial dispersants be necessary then approval should be obtained directly from the MMO/ EA/ PLA MFA. Refer to contact directory in Part 9, section 9.1.

Communications

Details of communication between internal personnel and external bodies should be given including details of communications between harbour/port/oil handling facility personnel and the Tier 2 response contractor whilst on site and off.

This information is best presented in a flow diagram with job titles and organisation names, method of communication during working hours and outside working hours, fully detailed.

Press Details

4.11.1 The London Gateway Communications Manager will be a member of the Operational Management Team.

4.11.2 The London Gateway Port policy regarding the Media is that all matters are to be handled by the OSMT and Harbour Master at an early stage. Facts only will be given and time will be taken to think through media statements, ensuring a balanced view of the incident and actions taken are comprehensive.

4.12 For Guidance, it would be expected;

Tier 1 incident -Port and PLA Staff Involvement
Tier 2 incident -Port Staff and possibly guidance from local authorities
Tier 3 incident -MCA Press office staff in attendance

4.12.1 The press and public should be kept firmly away from the site of where the oil spill has occurred and the clean-up operation. However, London Gateway will endeavour to provide a defined location with No. 1 London Gateway for the media to congregate and be provided with hot and cold refreshments whilst awaiting regular situation updates.

Health and Safety

Legislation

4.12.2 The Harbour Master/Health & Safety Manager shall complete a risk assessment for each activity associated with the clean-up response. The Site Specific Health and Safety Plan Assessment Form Part 11, Section 11.5 lists site characteristics, site hazards, personal

protective equipment and site facility needs. Appendix J also allows persons involved to distinguish areas that require certain safety precautions.

4.12.3 Alternatively, please be advised by the sTOP Notice 1/98; The Health, Safety & Welfare during Shoreline Clean Up (Appendix)

4.12.4 Access to clean up areas will be restricted, Security will be deployed to ensure only persons working on the clean-up operation are permitted access, boundaries should be installed so that the public and media cannot access these areas and hamper the clean-up operation.

Decontamination (Clothing & Waste).

4.12.5 Workers who have been wearing protective clothing are likely to become contaminated by oil during the clean-up operation. The clothing needs to be removed from the area to prevent further contamination outside the area. LG Facilities department will need to set up a process for such cleaning being made near but clear of the work site (See appendix K). A decontamination area should be situated such that the drainage from the clean-down is drained into an appropriate storage tank. Care should be taken to make sure that contaminated waste does not enter the normal drainage or waste disposal system and neither leach into the soil or watercourses in the area. Contaminated clothing will have to be disposed of as hazardous waste if they cannot be fully washed or are not capable of having all traces of contaminant removed.

Explosion and Fire Hazards

4.12.6 Any spilled petroleum based products are volatile. This means that it can produce a gas, which then mixes with the air around the spill, which can cause an explosion. Where there is a risk of flammable atmosphere, the area should be tested and assessed using multi gas detectors from the Local Authority's Technical Services Section of the Development & Planning Department.

Catering

4.12.7 Volunteers and personnel returning from prolonged periods of time outside and on the water will need a supply of hot drinks, soup and food. Arrangements will need to be made by LG Facilities department as soon as possible with the Harbour Master to ensure that everyone's needs are met.

Waste Management

4.12.8 London Gateway Port Waste Management Plan details the standard operating procedures for waste disposal.

4.12.9 Wherever possible, spilled oil should be recovered for recycling and re-use. However, any clean-up operation is likely to produce large amounts of oily waste materials and water, often far in excess of the original oil spillage.

4.12.10 All oily waste such as absorbent materials, personal protective equipment, and oiled sand and shingle must be handled and disposed of as hazardous waste in the proper manner.

Temporary Storage

4.12.11 It is inevitable that temporary storage will be needed near to the recovery site throughout the clean-up operation. Waste segregation will occur wherever possible to enable greater recycling and re-use.

4.12.12 Suitable sites must be identified (see Appendix K) to take into account ease of access to the spill and the need to separate the wastes prior to disposal. Storage sites need to be on reasonably firm ground with good access for vehicles coming from the spill to be cleaned, and for vehicles removing oil and waste for final disposal. Note that Category 1 waste skips are located in the area of the Eastern return; these are all water tight and in good repair. Pits and bunds can be excavated and lined with heavy duty plastic sheets and can be sited at the back of beaches (above HWM) where the beach material is reasonably firm.

Permanent Disposal of Oily Waste

4.12.13 For small amounts of waste the strategy is to dispose of it via the existing arrangements with contractors (Part 9, section 9.1 for contacts). Larger quantities will require consultation with the Environment Agency, Essex CC, Natural England and Thurrock Council.

4.13 The main disposal options will be;

- Recycling of oily liquid waste
- Landfill of general non-hazardous waste
- Stabilisation
- Land Farming
- Combustion

4.13.1 Suitable vehicles for carrying oil/waste also need to be considered and arranged (see table 5). The contact details of suitable companies of these can be found in Part 9, section 9.1.

Table 5: Types and capacities of waste disposal vehicles

Type of Vehicle	Area of Action	Capacity (m3)
Tractor Hauled Slurry Tanker	Beach/ Road	<3
Dumper Truck	Beach	<7
Commercial Vacuum Truck	Beach/ Road	<7
Gully Sucker	Beach/ Road	2-10
Road Tanker	Road	<15
Rail Tanker	Rail	30-90
Conventional Lorry	Road	10-20
Barge	Water	Several Thousand

Guidance on oily waste disposal is given in MCA & EA stop Notice 1/2004, in Appendix I.

3.0 Data

Contact Directory

Internal Contacts

Contact	Telephone	Fax	Out of Hours
Duty Tug	01642258361		01642258361
Emergency Planning Co-ordinator	01375648412		01375648412
Environment Office General Manager	01375-648300		07770692139
Harbour Master	01375-648380		07739140752
London Gateway	01375-648300	01375-648312	01375648595
Port Shift Manager	01375648376		07702518217
Port Operations Director	01375-8361		07990566254
Port Safety Officer	01375-8348/8424		07884233906/07702272965
Public Relations	01375-8340		07860704039
Security	01375-8317		01375648595

External Contacts

Local Authorities

Organisation	Contact Telephone	Fax	Out of Hours
Ambulance Service	01245443344 01245442211	01245442920 01245442920	01245442211 01245442211
Castle Point Council	01268-882200		01268758357
Essex Fire and Rescue	01277-222531	01277-229281	01277-222531
Essex Police	01245491491	01245452129	01245491491
Border Force/Customs	01708-865522	01708-890023	
Essex County Council **Emergency planning** **Oil Pollution** **Emergency plan Off** **Emergency duty off**	 01245-257468 07767298483 01245-430378 07767298483	 01245-430368 01245-430368	 07623949614
Southend on Sea	01702-215000		
Kent duty emergency Planning Officer	03000414999		24/7
Thurrock Council	01375-391605	01375-652780	07624345544/01375391605
SHELL oil Terminal **Terminal supervisor** **Central control room**	01375-644979 0207-934 4373 01375 6449797		 24/7

Telephone numbers confirmed 27/0/2017

Government Agencies

Organisation	Contact Telephone	Fax	Out of Hours
HM Coastguard MRCC **Thames Coastguard** **London Coastguard**	01255 675518 020 83 127380	01255 675249 020 83 098196	01255 675518 020 83 127380
ITOPF	0207566999	0207-6211783	07623984606
Life boat	Via HM Coast Guard		
MCA Counter Pollution Unit MPCU		02380 329446	Via Coast Guard
ORSL	02380 331551	02380 331972	
PLA	01474-560311 Duty Officer 01474-562215		
UKPIA	02072697600		020772697600

Environment Groups

Organisation	Telephone	Fax	Out of Hours
Marine Management organisation	01502-573149 01502-572769	01502-514854	0207-2708960
Environment Agency	0208-3105500 0645-333111	0208-3119778	0800-807060 08708506506
Essex Sea Fisheries	(01206) 303261	01206-303261	07889667402
Essex Wildlife Trust	01621 862960		
Natural England Essex **Ian Black** **Chris Gibson** **Peterborough** **IFCA** **Essex Civil Protection &Emergency Management**	01206-796666 01206-385390 01206-796666 01539792840 01843585310 01245430378 Office hrs	01206-794466 01539-792830	 07768 591854 01255-502960 07659124846 07538051116 07767298483 24/7 ECPEM Duty Officer
RSPB	01273-775333		
Whale & Dolphin Conservation Society	01825765546	0870 870 5002	

Primary Tier 2 Oil Response Contractor

Contact	Telephone	Fax	Out of Hours
Adler & Allan Limited	0208 5557111 (24 Hours)	0208 5193090	0208 5557111 (24 Hours)

Telephone numbers confirmed 12/04/2017

Training and Exercise

Training

3.1 London Gateway recognises the need for the simulation of realistic events and training for the use of Oil Spill Response equipment and procedures. All London Gateway personnel who may be involved in Response Operations will be trained to the MCA requirements, by a provider accredited by the Nautical Institute and in accordance with the matrix in Table

Table 5: Training Levels for Personnel working at London Gateway Port

Level	Details	No of Staff Qualified at London Gateway Port
Level 2P	All staff who will operate oil spill response equipment and need to be fully aware of correct and safe deployment techniques (Tier 2 Response)	60
Level 4P	Level 4P All personnel who will have a management role or be in a position of responsibility for port operations	15
Level 5P	On scene Commander	1

Exercises

3.2 London Gateway will continue to undertake annual exercises to familiarise personnel in the use and deployment of oil spill response equipment and incident management (Table).

Table 6: Exercise types and frequency

Exercise Type	Frequency
Notification exercise	Twice per year
Table-top exercise (may incorporate mobilisation and **deployment of local response equipment)**	Once per -year
Incident Management Exercise (will incorporate mobilisation and deployment of resources up to Tier 2 level)	Once every 3 years*
In an instance where a port, harbour or oil handling facility considers this requirement to be unduly onerous on the basis of the risk assessment they may submit an alternative exercise programme to the Regional PCPSO for consideration and approval, on an individual basis. In some circumstances it may be permissible to undertake an Incident Management Exercise in the fourth year of the plan's five year life-cycle providing for the "lessons-learned" to be captured within the final review/ update year.	

Training and Exercise Records

3.3 The Harbour Master shall be responsible for the upkeep of training and exercise records. A post exercise form should be completed and forwarded to the regional CPSO and all relevant plan holders each time an exercise is carried out.

Environmental, Commercial and Recreational Sensitivities

Introduction to Environmental Risk

3.4 London Gateway is located within a highly sensitive environmental setting and is closely monitored by the Environment Agency, Port of London Authority, Natural England and the Marine Management Organisation as well as other interested parties.

3.5 The Thames Estuary comprises the coast and low-lying hinterland, indented by several estuaries of varying sizes, between the mouth of the Stour Estuary on the Essex/Suffolk border and the Swale Estuary in north Kent. The intertidal zone is dominated by soft sediments, forming extensive salt marshes, grazing marshes and mudflats. These are separated along most of its length by man-made sea defences from the low-lying land on alluvial soils. These areas were formerly subject to more frequent flooding, but are now mainly arable land, with much grassland and still some substantial areas of grazing marsh. Coarser sands and gravels exist on the more exposed parts of the coast, with occasional shell banks which are a scarce but characteristic feature of this coast. Urban development on the coast is mainly confined to higher ground except in the inner Thames Estuary.

3.6 The value of this classic landscape is recognised in the designation of undeveloped parts of both the Essex and North Kent coasts as Environmentally Sensitive Areas. This designation reflects not only its value for wildlife, but also its beauty and remoteness, with wide expanses of mud and marsh giving heightened importance to the skyscape.

3.7 In areas where access is required to the coastline through grazing marshes it is important to consider the ground conditions as much of it now lies a meter below mean sea level.

Environmental Impact Assessment

3.8 If a major oil spill occurs and impacts on the sensitive areas within the Port's jurisdiction proceed with the following aims;

- Collect photographic evidence and oil sample data in the early stages of an incident for comparison 'before and after impact'
- The Environment Team to quantify the nature and extent of short, medium and long term impacts in programmes that are co-ordinated, value for money, 'fit for purpose' and where appropriate cost-recoverable.
- Meet government, public and media expectations for robust information on the short, medium and long term environmental impacts of pollution incidents.

- Provide agencies with sufficient information about the condition of important wildlife and conservation features to satisfy the statutory reporting duties of conservation agencies and to inform Government.

Wildlife

3.8.1 Affected wildlife such as birds may not necessarily wash up ashore until a week after the oil spill. It is important to have prepared procedures for recording and collating data as quickly as possible.

Birds

3.8.2 If oiled birds are found along the coastline , the RSPCA and RSPB (contact details, see Part 9, section 9.1) should be contacted and they may decide to take oiled animals to an offsite facility or set up an onsite cleaning facility dependent on the scale of the incident. A search party should be deployed with volunteers.

3.8.3 The first 5-10 birds found should be taken to the closest veterinary practice and they should be transported safely in a sufficient container that will not allow the oil to leak. All contaminated dead birds shall be kept separate from all other contaminated waste so they can be identified and if necessary post mortems carried out.

a) Bird handling

Handling of birds must be undertaken by properly trained personnel to ensure the protection of both bird and handler. Wild birds have no understanding of human intentions. Even a greatly weakened bird can inflict serious injuries to handlers, especially human eyes. Open wounds on arms and hands from such injuries can present opportunities for oily contaminants and disease to enter the handler's blood system.

Bird handling is usually best left to experts, or to volunteers who have had some training. It is easy to put birds under more stress by chasing and man handling them. It is important not to put personal safety at risk in treating oily birds. If in doubt, bird handling should be restricted to appropriately trained personnel e.g. those provided by the RSPCA.

If a decision is taken to catch an oiled bird, the following actions must be taken:

Equipment

1. Thick gloves
2. Overalls
3. Safety footwear
4. Cardboard box with a lid of suitable size to give the bird some room movement
5. Goggles to protect eyes
6. Optional long handled net to catch the bird

Procedures

1. Do not let the bird get close to your head, or it may try to peck your eyes
2. Catch the bird by hand or with the aid of a long handled net. Do not put the birds under any more stress than necessary. Only attempt to capture the bird if it can be done quickly and efficiently

3. Hold the bird with both hands, holding the wings in.
4. Put the bird in a cardboard box lined with absorbent material (e.g. newspaper) and close the lid
5. Do not wrap the bird – it may get too hot and cause additional stress.
6. Take the bird to a cleaning station as soon as possible. Record the species found (if known) together with the data and time found and pass the information, with the bird, to the cleaning station centre.
7. Keep a note of all birds caught and sent to the cleaning station, make a note of the species if possible.

Fish

3.8.4 The Thames Estuary inshore fisheries provide an important income to local fishing ports such as Brightlingsea, West Mersea and Leigh-on-Sea landing catches in the range £100,000-£500,000 per year. The inshore zone has important fishing-grounds for sprats, plaice, sole, whiting and pink shrimps, as well as spawning-grounds for sole, and both spawning and nursery areas for herrings. Apart from cockles, the main harvested shellfish are oysters, with commercial beds in Hamford Water and the Blackwater Estuary. Sea fish species of conservation rather than commercial importance include allis shad and twaite shad.

3.8.5 The diagrams below are broad brush diagrams and the reality is more complex as netters take advantage of seabed features like sand banks or creeks that are associated with fish that feed at certain states of tide. The trawling is more widespread and encroaches into the shipping channel, although they are obliged to keep clear of large vessels with restricted manoeuvrability.

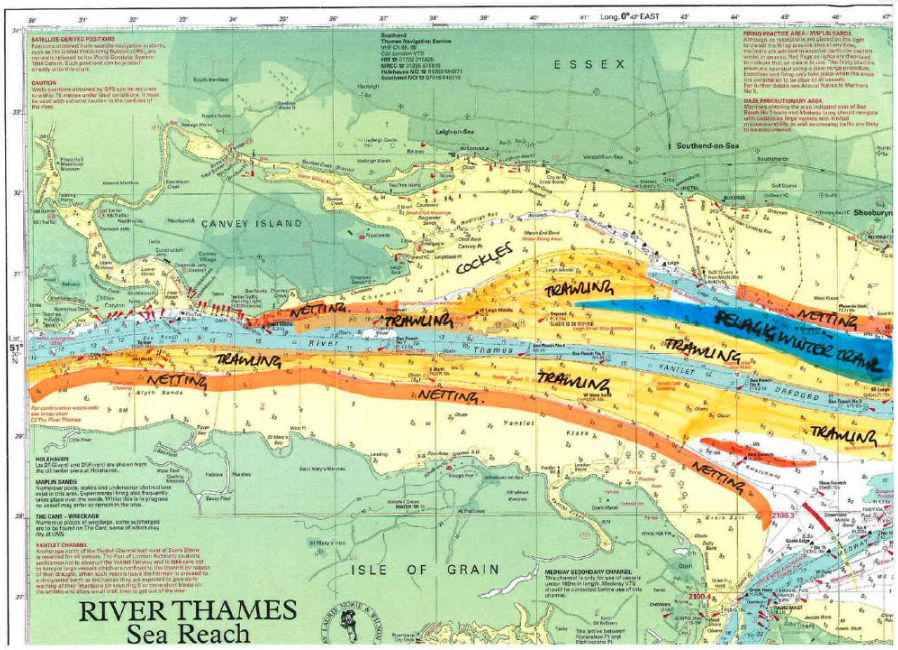
3.8.6 The Yantlet channel is trawled for demersal species (sole being the most valuable) along its length. Depending on the recovery of the seabed post-dredging, small trawlers maybe found testing the grounds in the Yantlet Channel or close to the south bank (Blyth sands) in the vicinity of London Gateway.

3.8.7 Previously the north bank around London Gateway was also targeted by netters looking for bass, sole, etc. Netting along the north bank is restricted by the new London Gateway Port and is now limited to the south bank.

3.8.8 Winter fisheries in general take place further to the east near the pier.

3.8.9 VHF Ch.61 is the channel for vessels in the inner estuary, although all vessels should also monitor VHF Ch.16 (emergency channel).

3.8.10 The shallowness of areas like Stanford Wharf Nature Reserve increases the concentration of fresh dispersed oil which can kill some fish and have sub-lethal effects on others. The large numbers of juvenile fish in the estuary are most sensitive to the oil toxicity. Fin fish however usually move away from the contaminated water; but even if they cannot move away their systems are able to metabolise oil so they do not retain contamination for long.


ESSEX
Southend-on-Sea
Shoeburyness
CANVEY ISLAND
COCKLES
TRAWLING
NETTING
PELAGIC WATER TRAWL
River
Thames
YANTLET
DREDGED
ISLE OF GRAIN
RIVER THAMES
Sea Reach


NOTE: Zones will overlap and exact locations vary seasonally
Thames Haven
Mucking
NETS
APPROX. TRAWL ZONE
NETS
NETS
NETS

3.9 The vulnerability of rocky shores to oil spills is mainly dependent on the wave exposure. Exposed rocky shores are normally considered to be one of the least vulnerable habitats to oils spills because the oil is quickly removed by the high energy environment. However, due to the nature of the estuary, the coastline within the proximity of London Gateway is relatively sheltered and is not as exposed to long fetch as some other areas further downstream. If the river conditions are calm then more attention will be needed to be paid on the shoreline as the intensity of the waves will not be sufficient to break up the oil. The species diversity in the area is large and has a thriving habitat.

Intertidal sand and mud flats and salt marshes

3.10 In the sheltered, calm conditions of the estuary, the smallest particles of material carried by the rivers and sea settle out to form mud flats. The incoming tide brings silt into an estuary. Gradually the mud flat increases in height, until the surface is exposed to the air long enough within each tidal cycle for a range of plants to colonise, forming salt marshes. The surface of the marshes is dissected by a system of drainage channels (creeks) and often pitted with isolated pools (salt pans).

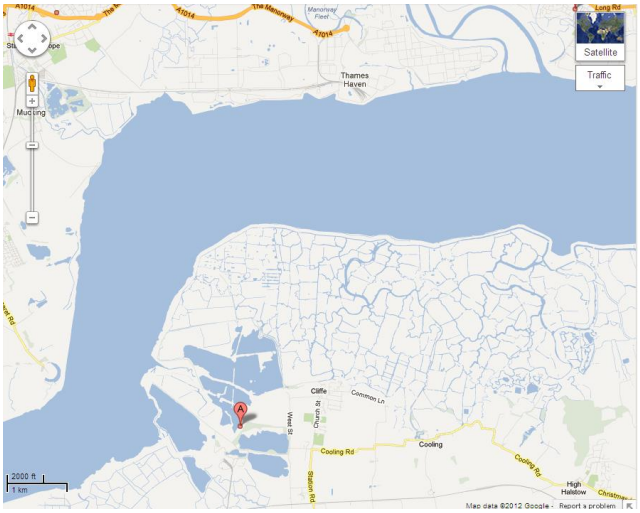
3.11 The mudflats are important habitats for invertebrates - worms, snails, shellfish etc. Taking food provided by each incoming tide, they contribute to a biological productivity which significantly exceeds that of any agricultural system. A small number of plants can also find a foothold, notably a green seaweed *Enteromorpha* and three species of eel-grass. Mud flats have long been a resource of local significance, especially for shell fisheries (particularly cockles and oysters), bait digging and wildfowling.

3.12 Just as nutrients collect in estuarine mudflats and salt marshes through nutrient trapping, many pollutants can also collect in the sediment. Microbial activity can decompose some pollutants, such as sewage, but others, such as heavy metals, are bio-accumulative. Micro-organisms occurring naturally in coastal mudflats have an essential role to play in cleaning up pollution by breaking down petrochemical residues. In a healthy marine ecosystem where the water is oxygenated, petrochemical contamination can biodegrade by micro-organisms, but if the oxygen supply is depleted by pollution and other processes leading to the breakdown of organic matter in the soil, the contamination will persist. In a contaminated environment oxygen is quickly depleted and anaerobic breakdown (without oxygen) becomes an important mechanism for getting rid of contaminants.

3.13 Environmental monitoring after an oil spill may need to be assessed by Natural England.

Saline lagoons

3.14 Just outside of London Gateway's jurisdiction are a few lagoons whose water is hydrologically connected with the sea through channels, sluices or permeable shingle or sand banks, and hence fully saline. The most important of these are Cliffe Pools, flooded former clay pits covering 180 ha, which is ten per cent of the total British resource of this habitat. The comparatively sheltered waters of saline lagoons support unusual assemblages of invertebrates and plants which are quite different from those of the adjacent estuary.



Roles and Responsibilities of Parties Associated with the Plan

3.15 London Gateway has the responsibility to respond to an oil spill within the port regardless of its classification (Table 1). All incidents must be reported to the relevant UK government and Maritime Authorities. The competent national authority designed to oversee all matters pertaining to the Oil Pollution Preparedness, Response Operation (OPRC) Shipping Convention under the Merchant Shipping Act, 1995 and the Merchant Shipping and Maritime Security Act 1997, is the Maritime and Coastguard Agency. The Harbour Master is responsible for the maintenance and up keep of this plan and is to ensure that one year prior to re-approval that the plan is fully reviewed and stakeholders consulted.

3.16 Table 2 identifies responsibilities for clean-up of pollution within London Gateway's jurisdiction.

Table 2: Responsibilities for Clean-up of Pollution

Location of pollution	Responsibility for clean-up lies with:
On the water	Harbour authority
Jetties/wharves/structures owned by Harbour Authorities	Harbour authority
Beach/shoreline owned by the harbour authority	Harbour authority
Foreshore owned by a private individual or group	Foreshore owner(s)
Shoreline (including land exposed by falling tide) and other structures	Local authority/NIEA

3.17 It should also be understood that SOSREP, once advised of an incident, cannot ignore a situation. Government policy is that ultimate control of any salvage operation where there is actual pollution or a significant risk of pollution to the UK environment must be exercised by SOSREP. In this situation, an Environment Group (EG) will normally be established as described in the NCP.

Appointed Environment Liaison Officers (ELOs) will provide environmental and public health advice to the response centres and the relevant harbour authority.

Counter Pollution Services

• Details of available resources should be given.
• Tier 1 – including manpower, and equipment held on site or locally available. Details of key holders should be maintained for locked facilities.

• Tier 2 details should follow the format above (if contractor, state name and generic equipment list, location of response base(s), estimated response time and back up facilities).

London Gateway Port Limited has a small stock of spill response equipment (see Table) but in the event of a Tier 2 incident further external help from TOSCA and Adler and Allen will be required.

As mentioned in the preceding sections, the maximum vessel length is 400 metres with a maximum depth of 16 metres in the harbour to Chart Datum. All quays are sufficiently equipped with appropriate mooring arrangements with bollards and fenders to facilitate a casualty. The availability of tugs and pilotage is available 24 hours a day and this applies to the availability of counter pollution equipment. If the casualty is in need of ship repair then the facilities in the port are limited with no availability of a dry dock with repairs taking place beside the quayside.

Table: The Spill Response Equipment of the Port

Spill response equipment reference	Contents	Location
Medium Size Spill Bin	As per annex E	1 x Workshop 1 x Gate Complex 1 x Rail Terminal 2 x Waterside interchange
Spill Container (Large)	As per annex E	1 x Waterside Interchange
Tugs	SOPEP equipped	2 X rotor tugs Kotug
TOSCA (PLA)	Tier 2 Marine Response Equipment e.g…….	Offsite – 2 hour response
Adler & Allen	Tier 2 Marine Response Equipment e.g…….	Offsite – 3 hour response
SHELL?		

Land owners adjacent to areas of responsibility

Prior to deployment of Oil Spill Equipment with regards areas of responsibility the following land owners should be notified to inform them that Oil Spill Response team will be transiting through their land.

KENT: SITE X LAND AGENT

Management of Mudflat TBC

ESSEX: Stanford Wharf Nature Reserve

RSPB Managing the mudflat:

Dave Hedges (Area Manager - South Essex Marshes)
david.hedges@rspb.org.uk
Mobile: 07834 257784
Landline: 01268 498615

APPENDICIES

Appendix A	CG77 POLREP Initial Pollution Report
Appendix B	Incident Log
Appendix C	Adler & Allan Activation Procedure
Appendix D	Health & Safety Checklist
Appendix E	Equipment in Marine Spill Response Container
Appendix F	Bunkering Procedure
Appendix G	Environmental Sensitivity Map
Appendix H	SCIENTIFIC, TECHNICAL AND OPERATIONAL ADVICE NOTE - STOp 4/2001
Appendix I	Port Hazardous Areas Map
Appendix …	Dangerous Goods Policy – IMDG Codes (UN/DG)
Appendix …	Evidence of consultation
Appendix…	MCA's Sampling STOp Notice 4/016.

Appendix A: CG77 POLREP Initial Pollution Report

POLREP Form: **CG77 POLREP Initial Pollution Report**	
Classification of report	Doubtful
	Probable
	Confirmed
Date/Time of Report	
Date/ Time of Incident	
Original Report Source	Name
	Role
	Contact
Location and extent of pollution	
Wind Speed/ Direction	
Weather Conditions	
Sea State	
Characteristics of Pollution	
Source and Cause of Pollution	
Details of vessels in the immediate area	

Photographs **Yes/No**	**Samples taken?** **Yes/No**
Remedial Action (Taken/ Intended)	
Pollution forecast	
Additional information	
POLREP prepared by	**Name** **Role** **Dept.** **Tel:** **Mob**

Notes to assist in compilation of Form CG77

Characteristics of Pollution

- Give type of pollution, e.g. oil (fuel oil or otherwise), garbage or other (specify).

For all, give appearance, e.g. liquid, floating, solid, liquid oil, semi-liquid sludge, tarry lumps, discolouration of water, visible vapour etc. Source and Cause

If from a vessel, say whether as a result of apparently deliberate discharge or an accident or casualty. Where possible, give name, type, size nationality and Port of Registry of polluting vessel.

Vessels in Area

Only necessary to be given if the polluter cannot be identified and the spill are considered to be of recent origin. Assistance from port control maybe needed to identify vessels that have recently operated in and out of the harbour.

Photos/Sample

State whether these have been taken and/or samples taken for analysis.

Action taken

Actions already taken or those intended to deal with the spillage

Pollution Forecast

- Direction that oil is moving, wind speed and direction etc.
- As it becomes available, the following additional information should be recorded and appended to the original Pollution Report Form:-

Results of sample analysis

Results of photographic analysis

Results of supplementary enquiries (e.g. inspection by surveyors, statements of ships personnel etc.)

APPENDIX B: Incident Log

Incident Name			
Date		**Page Name**	
Time	**Comment / Action / Detail**		

Appendix C: Adler & Allan Reporting Forms and Procedure

Mobilisation Authorisation Report Form

(To be faxed)

To	**Duty Manager**	**Name of Duty Manager**	
Date:			
Adler & Allan Emergency Fax:	**+44 (0)208 5193090**		
From:		**Position:**	
Company:		**Contact Number:**	
Subject:	**Mobilisation of Adler & Allan**	**Incident Name:**	

I, ……..……..…..(Name in Block Capitals)

Hereby authorise the activation of Adler & Allan and its resources in

connection with the oil spill incident of

……

(Name of Ship, Oil Rig, Terminal etc.) as of…….

(Time) on ……. (Date).

Adler & Allan shall work under the direction of:

Name : ……..

Position : ……..……..……..

Company : ……..

Signature……..……..
Company name *Delete as appropriate

Report Form for Adler & Allan Limited

OBLIGATORY INFORMATION , PLEASE COMPLETE ALL DETAILS			
To	**Duty Manager**	**Name of DM**	
Email of Duty Manager		Date:	
Adler & Allan Emergency Fax	+44 (0)208 5193090		
From:		Position:	
Company:		Contact No:	
Subject:		Incident Name:	
Name of person in charge			
Position			
Company			
Contact telephone number			
Contact fax number			
E-mail address			
SPILL DETAILS			
Location of spill			
Description of slick			
(size, direction, appearance)			
Latitude / longitude			
Situation (cross box	_ Land _ River _ Estuary _ Coastal _ Offshore _ Port		
Date & time of spill	_ GMT _ Local		
Source of spill			
Quantity (if known)			
Spill status (cross box)	_ On-going _ Controlled _ Unknown		
Action taken so far			
OIL TYPE CHARACTORISTICS			

Product name	
Viscosity	
API / SG	
Pour point	
Asphaltene	
WEATHER	
Wind speed & direction	
Sea state	
Sea temperature	
Tides	
Forecast	

ADDITIONAL INFORMATION REQUIRED - ALL DETAILS	
Resources at risk	
Clean-up resources on-site	
Nearest airport (if known)	
Runway length	
Handling facilities	
Customs	
Handling agent	
Vessel Availability	
Equipment deployed	
Recovered oil storage	
Equipment Logistics	
Transport	
Secure storage	
Port of embarkation	
Location of command centre	
Other designated contacts	
Special Requirements of Country	
Security	
Visa	
Medical advice	
Vaccinations	
Others (specify)	
Climate Information	
Other Information	

Standing Instructions of Adler & Allan Limited

Client's entitlement

A Client's entitlement is set out in the relevant Agreement between the Client and Adler & Allan and includes:

1. One Response Package comprising of vehicle and equipment together with Support Personnel at any time during the currency of the relevant Agreement.

2. A dedicated Team Leader.

3. Access to available additional equipment and personnel resources from the Adler & Allan Base.

4. Adler & Allan will provide a replacement Response Package and Support Personnel capability for deployment from the Regional Centre during the time that the original Response Package and Support Personnel are deployed.

Client teams

In the event of a Tier 2 oil spill incident, Adler & Allan will support Client teams by providing Support Personnel to supplement their numbers; their inclusion will benefit the Client through improved resources and an additional depth of knowledge in the team.
The guidelines for the use of Adler & Allan staff in Client teams are as follows:-

1) The standard entitlement of three Support Personnel plus one Team Leader apply; if required Adler & Allan may provide additional staff to supplement numbers subject to availability. In the event of a simultaneous mobilisation staff may be withdrawn and supplemented by sub-contractors as available.

2) Additional Support Personnel will be charged at the rates identified in the relevant Agreement.

Procedure on activation of Adler & Allan

In the event of a spill Adler & Allan is activated by the method set out in Section 11.5. The Client requesting the callout will be contacted by the Adler & Allan Duty Manager who will require as much of the following information as is available at the time:

1. Name of Client's nominated callout authority; this must be confirmed by fax. (See Section 11.6)

2. Location of spill: Latitude and longitude, whether on land, riverine, estuarine, coastal or offshore.

3. Time of spill (GMT and Local time).

4. Source of spillage.

5. Quantity (if known), or estimated quantity.

6. Oil type and characteristics, if known: API or SG, Distillation characteristics, Pour Point, Asphaltene content.

7. Weather conditions: Wind velocity, sea state, temperature, tidal conditions, precipitation, or ground conditions onshore. Weather forecast.

8. Resources at risk: As much information as is practical should be given.

9. Clean-up resources available on site or others ordered with estimated time of arrival.

10. Accessibility to spill site: distance to nearest metalled road, any local disruption to road transport.

11. Facilities available, location of secure storage for equipment.

12. Vessel availability for equipment deployment, storage of recovered oil.

13. Location of Command Centre.

14. Name of On Scene Commander and designated contact(s) and/or deputies. The Adler & Allan Duty Manager will:

15. Agree with the Client if additional equipment and personnel is required and agree if an Environmental Advisor is required.

16. Fax equipment list plus daily hire charges for additional equipment or personnel to the Client.

17. Arrange deployment of Regional Response Package and Support Personnel and advice client of estimated time of arrival.

18. Inform Client of logistic requirements:

    a. Boats for deployment
    b. Helicopters
    c. Road transport/hire cars

19. Advise Client of names of Adler & Allan Team Leader and all Adler & Allan personnel. The Client will:

20. Ensure the Adler & Allan Team is met and directed to the Command Centre or spill site.

21. Provide accommodation for the Adler & Allan Team.

22. Ensure that insurance cover is provided for Adler & Allan equipment against any loss or damage.

23. Ensure that there is a Response Management Team in place.

Depending upon the size of the spill or the size of the local operating company, one person may carry out several duties, or, in the case of a very large spill, each job may be expanded, for example, several beach-cleaning supervisors may be needed.

How the Adler & Allan Team is organised and its precise duties can only be decided by reference to the requirement to interface with the Client's Emergency Preparedness Plan.

Relations with the Adler & Allan Limited Regional Support Personnel

1. The Team Leader will provide the main point of contact for the On-Scene-Commander and should be integrated into the Client's Response Management Team.

2. The Support Personnel should be integrated into the Client's Response Team. The optimum benefit may be gained if the Support Personnel are used to direct the deployment of the equipment contained in the Response Package.

Appendix D: Health and Safety Checklist

Site Specific Health and Safety Plan Assessment Form					
1. Applies To Site					
2. Date:		**3. Time**		**4. Incident**	
5. Products					(attach MSDS)
6. Site Characterisation					
6a Area	Open water	Inshore water	River	Salt Marsh	Mudflat
	shoreline	Sand	Shingle	Docks	
6b Use	Commercial	Industrial	Public	Government	Recreational
	Residential	Other			

7. Site Hazards		
Boat Safety	Fire, explosion	Slips, trips and falls
Chemical hazards	Heat Stress	Steam and hot water
Cold Stress	Helicopter Ops	Tides
Drum handling	Lifting	Trenches, excavations
Equipment Operations	Motor vehicles	Visibility
Electrical hazards	Noise	Weather
Fatigue	Overhead/buried utilise	Work near water
Others	Pumps and hoses	

8. Air Monitoring (Oil company incident)				
O2	LEL	Benzene	H2S	Other

9. Personal Protective Clothing			
Foot Protection		Coveralls	
Head Protection		Impervious suits	
Eye Protection		Personal Floatation	
Ear Protection		Respirator	
Hand Protection		Others	

10. Site facilities		
Sanitation	First Aid	Decontamination

11. Contact Details:			
Doctor		Phone	
Hospital		Phone	
Fire		Phone	
Police		Phone	
Other		Phone	

12. Dated Plan Completed	
13. Plan Completed by	

Appendix E: Equipment list in Marine Oil

Response Container

650mm Inflatable Boom set	
650mm Inflatable Boom 10m (s1-s3)	2 sections
650mm Inflatable Boom 20m (l1-L5)	7 sections
Towing Bridles	
Towing bridle with wire	1 pair
Towing bridles with rope	1 pair
Air Inflator	
Blower PB 400	1
Blower PB24LN	1
Fuel for the Inflators	
2 stoke engine oil 1ltr	1 small bottle
25:1 pre mixed fuel	1x3 litre and 1x5 litre
Absorbents	
3m length sections of absorbent boom	4 packs
6m length sections of absorbent boom	2 packs
Roll of absorbent pads	1 roll
Box of absorbent pads	2
Toolbox	
Hacksaw	1
Spanners	1
Screwdrivers	3 flat, 1 Phillips, 1 wrench
Jubilee clips	8 assorted
Pliers/cutters	2/1
Stanley knife	1
Spare white thumb screw for sentinel booms	30
On Shelves	
650 mm Inflatable booms – 20m	2 sections:
Duck tape	1 roll

Latex gloves	1 box
Protection suits	9
Black Bin Liners	1 box
Shackles	4
Torch	1
Fast Tanks	1
Empty waste oil drum	1
Rope with monkey fist	2
Anchors	
Bruce anchor	1

If equipment is used then the amount should be noted, so that it can be replaced and the list can be updated. The location of the equipment is ideal for the quay wall.

Appendix F: Bunkering Procedure

DP WORLD London Gateway	MARINE SAFETY MANAGEMENT SYSTEM MSMS OPS 02			London Gateway SHELT Work Safe Home Safe
Document Number:	MSMS OPS 02	Revision Level:	1	Page 1 of 5

Department: MARINE OPERATIONS

Process: OIL TRANSFER OPERATIONS (BUNKERING PROCEDURES)

These procedures are applicable to transfer of all petroleum products, with flash point above 60° Celsius, within the jurisdictional waters of DP World, London Gateway (LGW) and should be used in conjunction with the Port of London (PLA) Bunkering Operations Procedures.

Background

Spillages and leakages during bunkering operations are a primary source of oil pollution. Experience has shown that many of the bunker overflows and spillages that do occur can be attributed to human error.

The following procedure provides guidance on the planning and execution of bunkering operations.

All bunkering operations should be carefully planned and executed in accordance with applicable regulations. Personnel involved in the bunkering operation on board should have no other tasks and should remain at their workstations during topping-off. Generally, bunkering during cargo operations is not considered to be best practice owing to the need to avoid conflicts of interest for operational personnel. Spillages often occur when crew members are distracted by another task.

When bunkers are being delivered by barge, reference should be made to Section 1.

1. Barge Acceptance Criteria

1.1 An up-to-date copy of OCIMF Vessel Particulars Questionnaire (VPQ).
1.2 Evidence of Pollution Insurance Cover.
1.3 Operations Manual extracts for 'Bunkering Procedures' and 'Lightening Procedures', including copies of relevant Safety Check Lists used.
1.4 Shipboard Emergency Procedures.
1.5 Owners/Operators emergency contact details.
1.6 Fuel transfer training, recording and communications procedures.
1.7 Oil Spill Response Plan and reporting procedure.
1.8 Full list of oil spill response/clean up equipment (including booms) carried onboard.
1.9 Copy of personnel training records for Oil Spill Response.
1.10 Evidence of Safe manning (Drug and Alcohol policy).
1.11 The barge must carry a minimum of 100 metres of oil containment boom (two 50 metre lengths), which must be of a suitable type for use in offshore conditions.
1.12 Vessel booming drill must be undertaken upon first arrival of the barge and if more than 50% of undrilled crew join the vessel.

Rev Level	Rev Date	Description of Changes	Page 1of 5
1	15/07/2014	-	

If item 1.1 is not available for any reason (such as non-seagoing barge), LGW is to be provided with the following in addition to items 1.2 – 1.9 above

1.13 Details of compliance with construction and operational standards. (Inshore Waters Code is acceptable as a minimum compliance).
1.14 Loadline/Loadline Exemption details.
1.15 IOPP Certificate.
1.16 Safety Construction Certificate.
1.17 Record of Qualifications and Experience for key personnel.
1.18 Hose Test Certificate and details of Hose Inspection Regime (if not ISM vessel).
1.19 Details of fendering arrangements and sizes.
1.20 Details of mooring rope arrangements, sizes and certification.

LGW reserve the right to conduct an onboard inspection upon vessel's arrival and prior to vessel undertaking bunkering operations.

LGW will also reserve the right to conduct trails to ensure the vessel has an acceptable level of maneuverability to conduct bunkering operations safely.

2. Barge Bunkering Procedure

Once Barge Acceptance Criteria has been approved by LGW, barge bunker delivery operations will be permitted, subject to the following:-

2.1 LGW being notified of any changes to information in section 1.
2.2 Bunker Notification Form must be completed and confirmed by LGW prior to bunker barge approving receiving vessel.
2.3 Bunker barge is not to approach receiving vessel unless 2.2 has been confirmed.
2.4 Suitable weather conditions. In case of any doubt, the operation may be postponed by the barge master, receiving vessel master, Duty Shift Manager, Harbour Master or his Deputy.
2.5 A copy of LGW Emergency Card is displayed on bridge of bunker barge.
2.6 The bunker delivery is undertaken in accordance with the procedures submitted to LGW.

Companies should require that all bunkering operations are controlled under procedures that are incorporated in a Safety Management System.

These procedures should ensure that the risks associated with the operation have been assessed and that controls are in place to mitigate these risks. The procedures should also address contingency arrangements in the event of a spill. The Company should consider the following items when producing the procedures:

- Determining that there is adequate space for the volume of bunkers to be loaded.
- Establishing maximum loading volume for all tanks.
- Controls for the setting of bunker system valves.
- Determining loading rates for the start of loading, bulk loading and topping-off.
- Special precautions when loading into double bottom tanks.
- Arrangements of bunker tank ventilation.
- Overflow arrangements.
- Verification of gauging system operation and accuracy. International Safety Guide Alarm settings on overfill alarm units.
- Bunker overfill protection (in general, the bunker overfill protection is an emergency stopping device only. It should not be used as a standard method of stopping bunkering).
- Communication between the supplier and receiver must be established before bunkering can be undertaken, including communication procedures for the bunkering operation and emergency stop.
- Manning requirements to execute the operation safely (including e.g. deck watch). Monitoring of the bunkering operation and checking it conforms to the agreed procedure.
- Changing over tanks during bunkering.
- Containment arrangements and clean-up equipment to be available.

Prior to commencing the operation, all pre-loading checks should be carried out and communication systems verified as working.

The loading rate should be checked regularly. When changing over from one tank to another, care should be taken to ensure that an excessive back pressure is not put on the hose or loading lines.

When topping-off tanks, the loading rate should be decreased to reduce the possibility of air locks in the tank causing mist carry over through the vents, and to minimise the risk of the supplier not stopping quickly enough.

On completion of bunkering, all hoses and lines should be drained to the tank or, if applicable, back to the delivery bunker supplier, prior to disconnection. The practice of blowing lines with air into bunker tanks has a high risk of causing a spillage unless the tank is only part full and has sufficient ullage on completion of loading.

3. Bunker Lightening procedure.

Barge Lightening Operations will be permitted when approved by LGW, subject to compliance with 2.1, 2.2, 2.3, 2.4 & 2.5 and also:-

3.1 Confirmation to LGW that the lightening operation will be undertaken in compliance with all relevant ISGOTT Procedures, guidelines and Safety Check Lists.
3.2 LGW have been provided with full details of barge P&I insurance cover.
3.3 Details of Dangerous or Polluting Goods (DPG) as per regulation 10 of The Merchant Shipping (Vessel Traffic Monitoring and Reporting Requirements 2004 (as amended)) are to be submitted to the PLA as per their reporting requirements.

4. Bunker Call Procedure for Receiving Vessel

All vessels alongside at LGW are to provide the name and contact details for their P&I Club.

BUNKER BARGES ARE NOT TO APPROACH ANY VESSEL ALONGSIDE AT LGW UNTIL THIS INFORMTION HAS BEEN CONFIRMED AND APPROVED.

5. Barge Approval and Audit

Upon successful completion of barge vetting and receipt of all required documentation outlined within Section 1 (Barge Acceptance Criteria), LGW will issue a letter of acceptance allowing operations to be conducted, subject to the procedures laid out by LGW and PLA for bunkering operations.

A record of bunker barges approved for operation within LGW limits will be maintained and audited annually. Bunker barge companies will be informed of the outcome of the audit, any deficiencies found during the audit will be highlighted. Bunker companies will have a period of 28 calendar days to rectify any deficiencies found.

LONDON GATEWAY PORT
BUNKER NOTIFICATION FORM

Bunker Transfer Information

Delivery Barge	
Receiving Vessel	
Date of transfer	
Time of transfer	
Grade of Bunkers	
Quantity of Bunkers	
Duration of Operation	
Agent	
Agent contact	
Receiving Vessel P&I emergency contact details	
Barge Contact Number	

Are there any special requirements for the bunkering operations?	

I, the undersigned, wish to Conduct Non-Cargo Liquid Transfer Operations as follows:-

Signed: _____ (Barge Master) Date: _____

Approach to receiving vessel by barge is not authorised unless this form has been signed and approved by a designated London Gateway Port officer.

For port official use only

This signed or stamped notification Form shall be evidence of the designated London Gateway Port officer's permission to conduct Bunker Transfer operations with a vessel berthed at London Gateway Port.

Designated Port Officer: _____

Date: _____ Time: _____

Comments:

Appendix G: Environmental Sensitivity Map

Appendix H: SCIENTIFIC, TECHNICAL AND OPERATIONAL ADVICE NOTE - STOp 4/2001

SCIENTIFIC, TECHNICAL AND OPERATIONAL ADVICE NOTE STOp 1/2009

GUIDANCE FOR CONTINGENCY PLANNING AND OPERATION OF THE TECHNICAL TEAM WASTE MANAGEMENT SUB GROUP WITHIN A NATIONAL CONTINGENCY PLAN SHORELINE RESPONSE CENTRE IN ENGLAND AND WALES

1. Introduction
2. Tasks identified in the National Contingency Plan
2.1 Waste disposal strategy
2.2 Waste minimisation and segregation
2.3 Preparing a plan for temporary storage of collected oily waste both from shoreline and at sea
2.4 Provision of technical advice on the location and format of temporary storage and treatment areas and disposal options for the oily waste
2.5 Waste regulations
2.6 Compliance with the Hazardous Waste Regulations
2.7 Management of the final disposal options and identification of sites for oily waste
Annex 1 - Layout of first SRC report brief for waste management strategy - suggested format
Annex 2 – SRC Waste Disposal Sub Group Daily Report
To be read in conjunction with MCA documents:

STOp 2/2009 SCIENTIFIC, TECHNICAL AND OPERATIONAL ADVICE NOTE - Maritime Pollution Response in the UK - The Environment Group
STOp 3/2009 SCIENTIFIC, TECHNICAL AND OPERATIONAL ADVICE NOTE THE ESTABLISHMENT, MANAGEMENT STRUCTURE, ROLES AND RESPONSIBILITIES OF A SHORELINE RESPONSE CENTRE DURING A MARITIME POLLUTION INCIDENT IN THE UNITED KINGDOM
RP 549: DEVELOPMENT OF A PROTOCOL FOR THE TREATMENT AND DISPOSAL OF OILY WASTE IN THE UK
And the:
NATIONAL CONTINGENCY PLAN FOR MARINE POLLUTION FROM SHIPPING AND OFFSHORE INSTALLATIONS
All available on the MCA website
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1. Introduction

This guidance has been prepared in relation to oily waste, but the principles should also be applied to the management of hazardous and noxious substances (HNS) and large quantities of non-polluting waste (e.g. timber/plastics) resulting from maritime incidents.

The clean-up activity following major maritime pollution incidents may produce large amounts of oily or HNS waste.

This note provides information on the operation of the waste management sub group to support STOp notice 3/2009. This guidance has been produced jointly by the Environment Agency (EA), the Emergency Planning Society (EPS) and the Maritime and Coastguard Agency (MCA.)

Fig. 1 The Shoreline Response Centre structure – where the Waste Management Sub-group fits in

The waste management sub group is chaired by a Local Authority representative and sits within the Technical team structure. It's role is to manage and direct waste operations in close consultation with the regulator. This guide does not deal with health and safety issues. Health and Safety is dealt with by the Health and Safety Sub Group of the Technical Team.

The group has the following key tasks as identified in the National Contingency Plan:

• Development of a waste disposal strategy.

MANAGEMENT TEAM
TECHNICAL TEAM
PROCUREMENT TEAM
MEDIA AND PUBLIC RELATIONS TEAM
ENVIRONMENT GROUP
STRATEGY SUB-GROUP
WASTE MANAGEMENT SUB-GROUP
HEALTH & SAFETY SUBGROUP
ADMINISTRATION TEAM

THE SHORELINE RESPONSE CENTRE

3

• Advising on waste minimisation and segregation.

• Preparing a plan for temporary storage of collected oily waste both from shoreline and at sea.

• Provision of technical advice on the location and format of temporary storage and treatment areas and disposal options for the oily waste.

• Ensure that all waste regulations are followed by the technical team and fully understood by the forward control centres and beachmasters.

• Ensuring oily waste is transported by registered carriers and in compliance with the Hazardous Waste Regulations.

• Management of the final disposal options and identification of sites for

oily waste.

2. **Tasks identified in the National Contingency Plan**

2.1 Waste disposal strategy

The agreed waste disposal strategy must complement the clean up strategy. Waste minimisation, recycling, recovery and treatment to reduce the hazardous nature of the waste will be the principles that inform the development of the strategy. It is paramount that the disposal strategy is integrated with the response overall and is not developed in isolation... The strategy will include bulk waste removal and decontamination.

2.2 Waste minimisation and segregation

For each shoreline clean-up sector the technical team will develop a clean up strategy. These strategies will require input from the Environment Group and Waste Management sub group. No instruction should be issued to the beachmaster until the contributions for both groups are received and documented.

The waste management sub group should be represented when Beachmaster and SCAT teams are briefed to emphasise the importance of adhering to agreed clean-up plans.

The removal of beach debris before any contamination should be discussed with the Environment Group.

Advice must be given to the technical team to ensure that waste production is minimised. For each shoreline sector consideration should be given to the potential for in-situ treatment at the shoreline, beachhead or nearby, to minimise the production or storage of waste. Potential treatments and facilities should be identified in the onshore contingency plans, and could typically include decanting, screening or washing. For compliance with the EU Landfill Directive (1999/31/EC) the sub group will need to ensure that the treatment carried out will be a physical, biological or thermal process. The process must change the characteristics of the waste to reduce its mass, or reduce its hazardous nature or facilitate its handling, or enhance its recovery. For oily wastes to be landfilled into hazardous waste landfills, this treatment must reduce the total organic content to less than 6%.

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Best endeavours should be employed to allow segregation to facilitate subsequent selection of the best practicable environmental option for each waste type. Storage while an assessment is made of waste is particularly important where complex containerised cargoes are involved. The bunded areas as set up during the NAPOLI operations at Portland Port in 2007 is an example of good practice.

2.3 Preparing a plan for temporary storage of collected oily waste both from shoreline and at sea

Best practice requires that waste storage facilities be identified and procured or constructed before clean up operations get underway. These should be identified in contingency plans along with a description of likely waste types produced from the shoreline type for a range of spill scenarios. Wastes should be segregated by physical state: liquid or solid, and also as type (e.g. organic, plastic/combustible or mineral.)

An incident severe enough to require the activation of the National Contingency Plan may require large-scale, remedial actions. These actions

may produce large amounts of contaminated waste. The existing, permitted infrastructure of the waste management industry may not have the resources to accept waste generated during the incident; or to recover, treat or dispose of the waste at permitted facilities.
Temporary sites may be required to store the waste temporarily, pending a decision on the best way to process each type of waste (including identifying how to recover or dispose of the waste at properly permitted facilities); recover or treat some of the contaminated waste.
"Temporary sites" refers to sites used for the temporary storage, recovery and treatment of contaminated waste from major marine pollution incidents, required either near or away from the site of the clean-up operation. This note applies only to temporary sites. It does not apply to the final recovery or disposal of contaminated waste.
The diverse nature of incidents and coastal zones and infrastructure means that how long temporary sites may be required for or their proximity to the shore cannot be prescribed. However, local authority contingency plans developed with other stakeholders can identify constraints, potential sites and transport routes. The plan should stipulate that collected oily waste is dealt with quickly and the site returned to its original state as soon as possible thereafter. Emergency plans should identify areas close to the shoreline needed to support clean up, potential in situ treatments, and initial bulking up of waste streams for transport to more secure and strategically placed areas.
It is likely for a large scale incident that waste management will cross administrative boundaries and collaboration at the emergency planning stage is essential. The regulators' approval should be sought in planning potential sites.
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An estimate of the anticipated quantities and types of wastes to be produced in relation to the capacity of the waste industry to deal with the waste generated should be calculated.
Equipment provision to beachmasters should include facilities to store all anticipated waste types matched to anticipated clean up rates. If the logistics of collection and onward clearance fail, the waste management strategy fails.
Waste quantity and type estimates must be kept under constant review in consultation with beachmasters, and staff from the technical and procurement teams. It is recommended the collection of waste arisings data is a specific task allocated to a designated waste sub group member.

2.4 Provision of technical advice on the location and format of temporary storage and treatment areas and disposal options for the oily waste

Response to a Tier 3 incident will likely require large scale storage facilities. It would be unusual for a waste management option to be available for direct beach head transfer of waste.
It will be necessary to seek early identification of waste industry options available including:

- Oil/water separation
- Liquid/solid separation
- Composting/ biological treatment facilities

• Incinerators
• Landfill

It will also be necessary to identify other treatment options available such as washing/ thermal remediation / other mobile plant including a technical brief on logistics, setting up time, loading rates, resource requirements, manpower etc. In liaison with the procurement team, identify costs and loading rates.

A Management Team brief on estimates of wastes to be generated and the infrastructure required to support the waste management strategy will need to be prepared. Significant costs may be involved , it is essential that early notification is given to the Management team. Do not underestimate waste arising and liaise with best available expertise for validation of assumptions.

Waste storage and treatment must be managed by technically competent people. The waste management sub group will advise on the level of competence required depending on the risk associated with the management operation. Some operations may require professionally qualified managers.

Implementing the advice would typically involve:

• Bringing together engineering team to implement design and construction of temporary stores.
• Setting up treatment areas.

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• In liaison with the Health and Safety team, and regulator identify and appoint proficient managers.
• Confirming treatment and disposal options.
• Putting a system in place to monitor clean up and storage and inform review.
• Putting a system in place to monitor interim storage construction.
• Putting a waste recording system in place.
• Providing update reports for feedback to beachmasters based on daily monitoring reports.
• Collating feedback from beachmasters on quantities and storage requirements.
• Producing waste management report for following morning Management Team. Revising quantities in storage, quantities treated on site, at treatment centres through waste chain.
• Instigating and maintaining a rigorous record keeping system covering all of the above, and costing of all activities.
• Updating waste sitrep boards.
• Reviewing strategies and actions.

It is for the SRC technical team to decide in liaison with the waste management sub group where these activities are best carried out.

Further guidance can be found in Research Project 549: Development of a Protocol for the Treatment and Disposal of Oily Waste in the UK, available on the MCA website - http://www.mcga.gov.uk/c4mca/final_report_rp_549_march_2007_task_4-2.pdf

2.5 Waste regulations

The regulation of waste management is complex.

The Environment Agency recognises that when dealing with an incident where

there is a likelihood of serious environmental damage the situation should be controlled first. This action does not preclude any subsequent enforcement response. Whether any acts that would normally require permits, carried out in an emergency would result in enforcement action would be considered in the light of their enforcement policy.

There is a defence for actions taken in an emergency under Regulation 40 of the Environmental Permitting (England and Wales) Regulations 2007. The Environment Agency would not normally take enforcement action in case of such an emergency. An emergency only applies if it is proven that the acts were carried out in order to avoid danger to public health and:

• steps are taken to minimise pollution, and

• the EA are notified of the acts as soon as reasonably practicable.

The measures required to protect public health and the extent to which they apply to recovery plans and returning communities to normality will be decided

7

in conjunction with the relevant health bodies and local authorities comprising the Shoreline Response Centre and Environment Group.

The appropriate duration of, and therefore the EA response to, a temporary site will be reviewed on a case by case basis and with consideration of public interest factors.

As the response progresses, regulatory positions can change. This could be where the scale of the activities at the temporary site goes beyond what was agreed; the activity has caused, or is likely to cause, pollution or harm to health or; otherwise consideration of the public interest factors no longer justifies it.

If any of the conditions above apply then the EA liaison officer would tell the site's operator or Shoreline Response Centre (or equivalent) that the previous enforcement position no longer applies and specify a deadline by which the temporary site must be permitted, registered exempt, removed or mitigated as appropriate.

2.6 Compliance with the Hazardous Waste Regulations 2005.

Additional regulations apply where waste arising from a clean up is hazardous.

There is a defence for actions taken in an emergency or where there is a risk of grave danger under the Hazardous Waste Regulations 2005. An emergency or risk of grave danger is defined under the Regulations as:

‘a present or threatened situation arising from a substance or object which is, or which there are reasonable grounds to believe is, hazardous waste, and the situation constitutes a threat to the population or the environment in any place.’ The EA will not normally take enforcement action in these circumstances.

Under section 62 of the 2005 Regulations holders of hazardous waste must take steps to avert an emergency or danger.

The measures required to avert the emergency or grave danger and the extent to which they apply to recovery plans and returning communities to normality will, where possible, be decided in conjunction with the relevant health bodies and local authorities identified in the relevant emergency plan.

The regulations require notification to the regulator of steps taken as soon as

reasonably practicable. This notification would normally be received by the Environment Agency Liaison Officer.
Again, regulatory positions will be regularly reviewed, particularly if the steps proposed are no longer required to mitigate or avert danger or otherwise consideration of the public interest factors no longer justifies it.
8
In such a case the Environment Agency will tell the site's operator or Shoreline Response Centre (or equivalent) that the previous enforcement position no longer applies and specify a deadline by which the breaches of the regulations must be remedied.
The Environment Agency would require the maintenance of records of hazardous waste. The records allow the audit of the movements of all hazardous wastes from the clean-up area.
The Environment Agency would expect any movements of waste to comply with the Control of Pollution (Amendment) Act 1989 and the Duty of Care under the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) Regulations 1991.
Clean up operations have the potential to cause environmental harm. The Environment Agency will normally take enforcement action where they consider pollution or harm has arisen either due to reckless, negligent or careless actions or where all reasonable, practical steps were not taken.

2.7 Management of the final disposal options and identification of sites for oily waste

In the event of a large scale incident it is very likely that there will be a need for a facility for large scale storage and treatment.
The MCA has established that no such strategic capacity exists in the UK for hazardous waste disposal.
The waste management sub group will probably have sufficient time to research and develop detailed proposals for the long term disposal and treatment of stored waste. This may involve installations with existing permits or novel technologies.
Since the earlier actions will have been taken to protect public health and the environment, the final treatment and disposal of the waste is likely to require full planning permission and environmental permitting.
When a waste operation has ceased an inspection must be carried out to ensure that all material has been removed, the site is safe and an assessment made of whether contamination from the waste operation has occurred and further remediation required.
9

Annex 1 - Layout of first SRC report brief for waste management strategy - suggested format

Policy statement

Waste Management Strategy:

To facilitate the recovery and removal of bulk oil and contaminated material from the environment with reference to the principles of sustainable waste management.
This will be achieved by:-
• Ensuring that advice is available to the technical team to ensure that clean up operations are planned to minimise waste production

• Measures are put in place to segregate waste types at the shoreline to facilitate the assessment of the best practicable environmental option for each waste stream
• Estimate and anticipate quantities and types of wastes to be produced
• Identifying the capacity of the waste industry to deal with the waste generated
• Plan and develop interim storage and treatment areas
• Identify disposal routes and manage the production, storage and transport of waste to the final options

Suggested headings:-

• Number and location of potential clean up sites
• Potential waste streams
• Production rates short and medium term (1-3 days)
• Beach head storage
• Waste options decision-making statement including costs
• Interim storage requirements
• Site restoration and clean-up
• Audit of process overall
• Regulator comments
• Recommendations

10

Annex 2 – SRC Waste Disposal Sub Group Daily Report

Daily report is to provide running account of progress for:

• What type and quantity of waste is going where.
• Proposed and actual treatment processes.
• Regulation of process
• Costings

To be produced by the Waste Disposal sub group of the Technical Team, Shoreline Response Centre, in consultation with:

• The Environmental Regulator
• SRC Technical Team and Management Team
• Beach Masters
• Local Authority Waste Officers/Finance Officers

This information will feed into main incident waste report and will provide data for audit reporting.

Suggested headings:-

• Number of clean up sites/ in situ treatments
• Waste streams
• Quantities in waste stream storage
• Quantities in waste stream treated/ disposed
• Revised cost figures
• Regulatory statement
• Projected production short to medium term
• Ongoing cost estimate
• Strategy revisions
• Data and Information - to include:

- Tonnage of waste by EWC code
- Waste collation
- Pre and post treatment processes
- Onward movement of waste
- Registered carriers

Long running incidents

3.19 The local plan should also make provision for long-running incidents. Not only for incidents for which command and control will lie with the harbour authority, but also for incidents in which SOSREP takes command and control of the salvage operation. The local plan can play a vital role in ensuring that emergency duty rosters allow for adequate periods of rest for all involved in the response. That applies equally to both locally based personnel and to visiting personnel. Sometimes difficult decision making and the clearest thinking is needed some 48 or 72 hours into an incident. Hence, as indicated above, local plans should extend to detailed

1.9 Disposal of Waste & Recovered Materials

Waste disposal is governed by the relevant sections of the following EU and U.K legislation:

- Waste Framework Directive
- Hazardous Waste Directive
- Landfill Directive
- IPPC Directive
- The Environmental Protection Act, 1990
- The Controlled Waste Regulations, 1993
- The Control of Pollution (Amendment) Act, 1989
- The Waste Management Licensing Regulations, 1994
- The Hazardous Waste Regulations, 2005
- Environment Act 1995 & Environmental Permitting (England & Wales) Regulations 2007
- Special Waste Regulations, 1996

Detailed procedures for disposal of waste are found in part 4, section 4.7.

1.10 Environmental Policy

For the purposes of oil spill response, London Gateway has the responsibility to respond to an oil spill within the port and in doing so;

a) Reduce pollution incidents by maintaining a high level of preparedness to cope with any incident in the port, liable to cause environmental harm.

b) Dispose of waste oiled material with minimal impact upon the environment through application of the waste hierarchy.

c) Set standards that comply with all environmental legislation.

Part 2 - Risk Assessment

2.0 General Risk Assessments

London Gateway is planned to accommodate the world's largest container ships; with a higher level of productivity, reduced downtime for bad weather and a planned capacity of handling 3.5m TEU per annum. It will provide shipping companies easy access to all national transport hubs, providing their customers ease of distribution. State of the art handling systems will ensure expedient delivery of cargo.

2.1 Place of Refuge

The UK has obligations under the International Convention for the Safety of Life at Sea, 1974 (SOLAS) to provide shelter for maritime casualties which may require use of waters within a port as a place of refuge. MCA and SOSREP are responsible for discharging this SOLAS obligation and it is London Gateway's responsibility as a harbour authority to work with the MCA and SOSREP. A well-developed understanding about the nature and environment of the port's waters are made clear in this section, to plan and assist with a potential casualty that seeks shelter within the Harbour.

2.1.1 Vessel Information

a) London Gateway has been designed to accept the new generation of 18000 TEU, 400m LOA, and 14m draft container ships. A maintained dredging chart of the harbour can be located in Appendix VI showing the maximum draught allowed in each area.

b) The maximum length of a vessel entering the port is exactly 400 metres and can suitably berth alongside the quay wall.

c) Navigation within the River Thames is controlled and Pilots supplied by the Port of London Authority.

2.1.2 Harbour Environment

b. The seabed nature of the holding ground within the harbour limits has a varied substrate, predominantly a sand and gravel with clay and mud deposits.
c. The Water Framework Directive has split the Tidal Thames into three water bodies; Thames Upper, Thames Middle and Thames Lower. London Gateway is located on the border of the Middle and Lower part of the Tidal Thames.
    1. The Thames Middle ranges from Cremorne Gardens to Stanford-le-Hope, comprises the brackish zone where water transitions between freshwater and marine. It is an industrial and urban reach where the river is constrained by vertical and hard flood defence walls, docks and artificial structures interspersed with creeks, inlets, with more natural marginal saltmarsh and grazing marsh starting to occur towards the outer estuary. Conditions here are harsh with a high tidal range of 7m, strong currents and ever changing salinity the animals found here must be able to withstand these wide variations in their habitat.
    2. The Thames Lower ranges from Stanford-le-Hope to Haven and Warden Point in the Outer Estuary comprises the marine zone. The channel here is wider than further upstream and the habitats illustrate more connections between the aquatic and terrestrial environment. Saltmarsh, reed beds, mudflats, grazing marsh, shell and shingle banks, earth flood embankments and saline lagoons support a wide variety of fish and invertebrates providing rich feeding grounds for birds and marine mammals. The zone is the primary area for breeding and nursery grounds for Dover sole, flounder, bass and mullet and commercially important shellfish such as cockles and mussels.

d) The local tide is semi-diurnal and has a 6.8m (tidal range); current processes are graphically shown in appendix V and shows states of the current at different times before and after high tide.

e) London Gateway is affected mainly by two types of wind systems, the prevailing south westerly winds and the north easterlies. The two areas of shelter best to accommodate a refuge vessel.

f) The general population around the harbour is shown on the map below (figure 4); Population figures displayed are the maximum numbers of staff that can be in that area at any given time with regards to shift patterns.

g) Environmental issues such as Sites of Special Scientific Interest (SSSIs), Sites of Importance for Nature Conservation (SINCs), Ramsar Sites (Internationally Important Wetlands) and areas of internationally important mudflats for wintering birds (Appendix VI).

2.1.4 Role of SOSREP

The role of SOSREP was formally introduced in 1999 and has the power to oversee, control and intervene in any salvage operations in UK waters involving vessels or fixed platforms where there is a significant risk of pollution. Ultimately, it will be the responsibility of SOSREP to take control of a vessel in distress and bring it into the London Gateway.

2.2 Hazard Identification

Possible operations/incidents within the Port that could result in a pollution incident have been identified as follows;

a) Two vessels colliding with one another resulting in a rupture of one or more fuel tanks.

b) Oily bilge water inadvertently pumped into the River Thames from a vessel.

c) Fuel oil or waste oil transfer operations between a ship and a barge or a ship and a road tanker

d) Extraordinary angle of impact of a vessel's side plating on quayside whilst berthing, resulting in rupture of side fuel tank.

A vessel is influenced by a strong current whilst coming alongside and pushed on to a berth rupturing a fuel tank. Spillage following a grounding incident has also been considered at London Gateway given the wind, age of the vessels and that these new vessels have not operated within the PLA limits to date even though the harbour authority has a consistent maintenance dredging programme in place. The maintenance dredging ensures vessel movements can take place at sufficient depths. The risks associated with the above hazards have been mitigated wherever possible e.g. bunkering operations take place at night times when surrounding traffic is at a minimum.

Modern navigational aids such as the Port's ADCP buoy and the PLA's policy of using qualified pilots reduces additional risks. London Gateway's Marine Safety Code also identifies hazards and risks that are mitigated via its safety management system (SMS).

2.3 Navigation

To maintain suitable depths, a targeted maintenance dredging campaign takes place. Shoal areas are determined from the results of monthly Hydrographic surveys. As mentioned in Part 2, section 2.0, all vessels will be Piloted by PLA Pilots and controlled by the PLA VTS operations room.

2.5 Inherited Incident

The proximity of the London Gateway to the busy shipping lanes in the River Thames presents the risk of an inherited oil pollution incident. Under the SOLAS convention, the MCA, the SOSREP and the London Gateway Board have the "responsibility to provide shelter for maritime casualties who may require use of waters within a port as a place of refuge" (MCA). Oil pollution incidents that take place outside London Gateway's controlled waters can be inherited (i.e. spills influenced by wind and tide are sent in the direction of the port). With regards to an inherited incident there would be a direct response from the port with its own resources, London Gateway Board would be under the strict guidance of the MCA and SOSREP.

2.6 Fate of Spilled Oil

One of the most important processes that takes place, when oil is spilled, is that of evaporation and emulsification, where oil goes through changes in its composition.

Oil, upon impact with water will normally spread and drift very rapidly to form a thin slick over the surface. This is transported very quickly on the surface by winds and currents.

Oil emulsion takes place when the lighter compounds have evaporated and the physical processes mix water in with the oil. This causes the volume of the oil to increase and makes it viscous and much harder to disperse.

Micro-organisms in sea water, by using the natural process of biodegradation, can use the dispersed oil as an energy source, breaking it down to carbon dioxide and water. In some incidents this might be better than manually cleaning up the oil, though this is dependent on the surrounding environments.

Oil landing on shorelines after a spill is normally very patchy. Some resources might be impacted greater than others. Potential areas and extents of distribution of oil should be assessed quickly using Table 1 in Part 2, section 2.3 above. Furthermore, the influences of tide and current should be assessed when deploying booms during clean up; refer to Part 4, section 4.3.4. Also the use of tidal streams in Appendix along with Live Operational Information on the PLA website

Part 3 - Response Strategy

Table 3: Oil Spill Management Team

Oil Spill Management Team – Chaired by Harbour Master	
Internal Personnel	**External Organisations**
DHM	PLA – VTS Control
Emergency Planning Co-ordinator	MCA/SOSREP
Public Relations Manager	TIER 2 Contractor
Environmental Officer	Essex County Council
Port Safety Officer	Thurrock Council
	MFA
	Natural England
	Environment Agency
	Salvor
	Vessels Agent
	Emergency services
	ITOPF/P&I Club

Part 4 – Response and Clean Up Procedures

4.0 Introduction to Response and Clean up

The success of clean-up operations depends upon adequate planning and frequent training exercises in anticipation of an incident. Areas of coastline where booms or absorbents could be used should be identified, including details of substrate, sensitive areas, currents and appropriate equipment configurations.

Regular exercises take place so that all personnel are familiar with the equipment and procedures. The Harbour Master has the authority to order any other marine craft held within the London Gateway to tend and participate in a clean-up operation. When oil has come ashore and the clean-up begins, it is useful to maintain records of the activity (locations, numbers of workers, methods and equipment used, etc.), particularly on vulnerable and sensitive resources which can be identified by using the sensitivity map in appendix.

It is vitally important that samples are taken of the oil from the spill site and at the source of the spill. These samples should be taken as soon as possible from when the spill has been identified and before the clean-up operations take place.

General Procedures;

Identify oil spill location

The Shoreline Response Officer will collect the sampling kit from the oil spill container (located adjacent to the Operations Building) and check that it has the required equipment (bottles, sealing labels, scraping tools etc.) and reporting forms to record the sampling throughout the process.

The MCA sTOP notice 4/2001will be used to guide the Shoreline Response Officer through the process of collecting the sample and the size that should be taken.

Ensure that the samples have been bottled and sealed appropriately and all the forms have been filled in. Reporting forms can be found with the MCA sTOP Notice in Appendix.

Finally, make sure the sample(s) is ready to be transported and kept in a cool place below 5°C, with the temperature ideally recorded at all times.

The use of a cooling box and ice boxes should be used if possible to keep the samples cool whilst being transported to the Operation Building.

The fridges for where the samples can be stored before transportation are located in the Operations Building. Guidance of collecting samples is given in MCA sTOP Notice 4/2001 found in Appendix VI. Sampling kits are kept within each oil container.

Guidance of collecting samples is given in MCA sTOP Notice 4/2001 found in Appendix VI. Sampling kits are kept within each oil container. Refer to sensitivity map in appendix VI.

4.3 Recovery of Oil on the water

Oil on water undergoes certain phases of evaporation and then proceeds to emulsify. The forces that act upon the water such as wind, wave and tide also act on the oil so it is essential that the oil spill is contained quickly and prevented from reaching sensitive areas. Shoreline barriers have two main uses for dealing with spills, firstly for coastal protection and by diverting/preventing the oil from reaching the shore. Secondly, in the collection of oil being washed downstream as part of the clean-up operation, this is to prevent the oil spreading further. The following influences are important when deploying booms;

4.3.1 Wind

Strong winds generate waves, which can splash over the boom. Although oil on the surface tends to dampen waves, eventually oil will splash over the boom. Strong winds can also generate additional tensile forces on the boom, causing it to drift. The oil that can potentially spill over the booms must be monitored and the rate of wind speed in knots should be calculated at the beginning of the clean-up operation and monitored throughout.

4.3.2 Currents and Tides

Currents and tides will initially concentrate the oil in a wedge in the boom cusp. At current speeds of less than half a knot at right angles to the boom, this wedge can be several metres wide, and will contain the majority of oil that accumulates. If current speed increase then the leading wedge of the oil will push up against the boom and water would dive under the boom's skirt taking oil with it. The problem caused by currents can be rectified by securing the boom at such an angle that oil can be diverted by the boom to calmer water. The table below can help to construct an efficient booming plan.

Table 4: Maximum angle of boom relationship with current strength

Current Strength		Maximum Angle
Knots	m/sec	Degrees
0.7	0.35	90
1.0	0.5	45
1.5	0.75	28
2.0	1.0	20
2.5	1.25	16
3.0	1.5	13

Refer to Appendix V for current variation over time.

4.3.3 Mooring Length and Anchoring

The length of mooring between boom and anchor should be 4-5 times the maximum water depth (note the tidal range of the area). If mooring are too short the boom may be dragged below the surface or the anchor 'tripped' out.

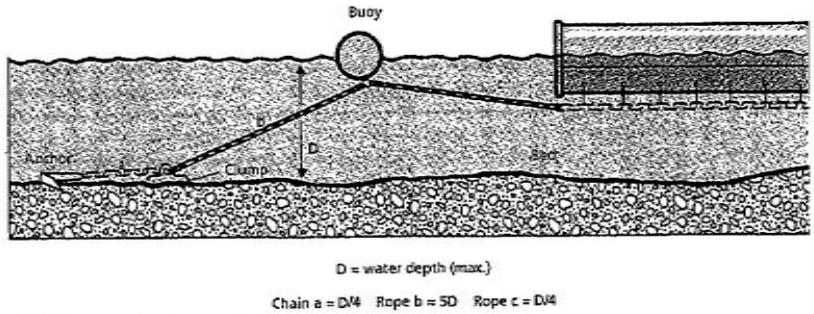


Figure 5: Diagram showing sufficient mooring length

Figure 5: Diagram showing sufficient mooring length

The holding power of an anchor will vary according to its type, weight and the composition of the riverbed. For example, anchors of the Bruce or Danforth type will be most effective in sand and mud substrates, but a fisherman's anchor (hook type) will be better on a rocky bottom.

4.3.4 Quayside outfalls

It should be remembered that each ASC Module has a drainage gully which drains into the Thames through outfall pipe. If an incident occurs the shut off valves in the vicinity should be closed as directed by control to prevent further contaminate being allowed to enter the Thames

4.3.4 Quayside Booming

In the port there are various areas where booms can be connected to the quayside or similar structures with a hard vertical or near vertical surface. The various structures also have specific booming needs because of their individual structures. In Appendix IV, there is a directory of the different types of structures around the Port. When connecting booms to fixed structures a running mooring should be installed to allow the boom to rise and fall with the tide. This is a rope attached at the top of the quay to

a bollard or other secure point and weighed down by an anchor. This technique will only be effective where forces on the rope and boom are minimal.

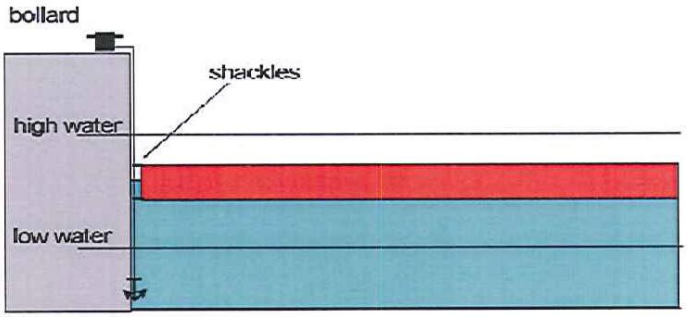


Figure 6: Diagram of inflatable boom connected to bollard alongside jetty.

Figure 6: Diagram of inflatable boom connected to bollard alongside jetty.

It is also necessary to establish the flow velocity of the waters in the area. See charts of tidal flows and cycles in Appendix V.

This information is held within the following documents:

- London Gateway Tide Tables
- London Gateway Admiralty Chart (No.1186)
- London Gateway Tidal Stream Atlas 2012
- Port of London Climate Atlas 2003

4.4 Recovery of Oil from Inshore Waters

If the oil is contained within the estuary access with equipment to remove oil from the water could be timely due to mudflats, beaches, creeks and the harbour structure. Care should be taken when accessing these areas and precautionary checks should be taken.

See Appendix IV which highlights the issues and clean-up considerations with the receptors and structures surrounding London Gateway Port .

4.4.1 Quayside cleaning operations

Access from the berth's is restricted in terms of vehicles due to crane and container movements by the quay wall . Due to the semi-automated nature of the quay cranes access to berth 1 is prohibited. Access to Berth 2 and 3 might be possible depending on the shipping list at the time of the oil spill. The shipping list should be consulted to determine the expected shipping movements. This is owned by the Operation Department.

Figure 7 is an example showing a set-up which is suitable for alongside the quay wall. The latter illustration accommodates the tide which is important especially on an ebbing tide for the connecting pipelines.

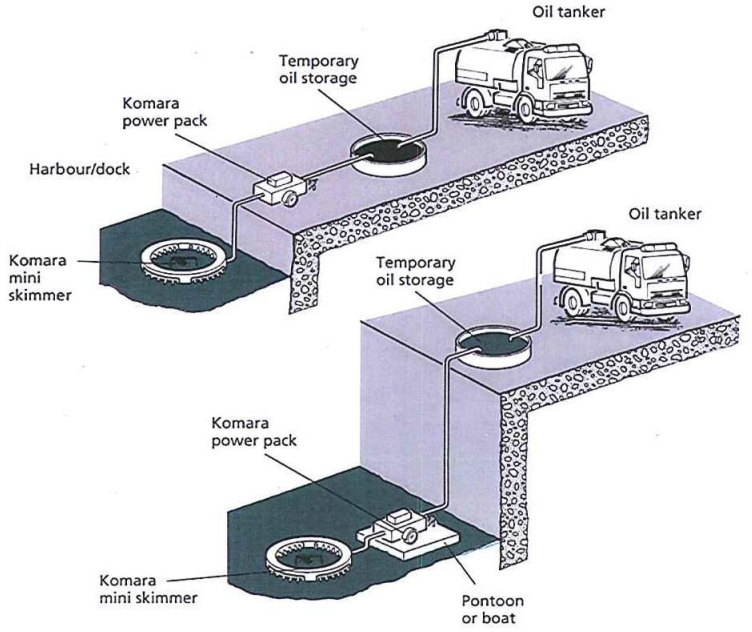


Figure 8: Clean up procedure alongside jetty and pier structures

4.5 Oil on the shore

The principle aims of shoreline clean-up operations are to reduce the pollution to a tolerable level and to restore the coastline with the least impact to the environment. Three stages can usually be recognised in the clean-up of shoreline contamination;

Stage 1: Removal of heavy contamination and floating oil;

Stage 2: Cleaning up of moderate contamination, stranded oil and oiled beach materials;

Stage 3: Clean-up of lightly contaminated shorelines and removal of oily stains .In many situations it will not be necessary to progress through all three stages and on occasions oil on shorelines will be best left to weather and degrade.

4.5.1 Physical removal of oil from a beach

The foreshore closest to London Gateway is at Mucking Creek Appendix VI. When removing oil from beach substrates, care must be taken not to collect excess beach material as this will lead to unnecessary and expensive costs and extra hazardous material to be disposed of. This is especially important as hazardous waste disposal sites in the UK are becoming increasingly scarce.

Clean up procedures should consider:

1) Poor vehicle mobility over soft substrate.
2) Penetration of oil into the beach material

3) Excessive amounts of beach material being removed whilst clearing the oil.

Note: Please refer to sensitivity map in Appendix VI.

It is desirable to remove as much of the pollution as possible off the surface of the substrate. If possible the scooping action should undercut the oil slightly, therefore cutting into clean sand to avoid spreading oil over, up or into the beach. Oil will inevitably enter the body of the pebble foreshore and may take a few weeks to leach out as sheen and tar balls. If the sheen is predicted to be large then an inflatable boom should be placed along the beach to intercept the leaching oil from entering back into the Thames Estuary.. When the oil has leached from the beach an inshore procedure may take place depending on the viscosity of the oil Part 4, section 4.3.1.

4.5.2 Physical removal of oil from rocky shore and harbour structures

Stanford Wharf Nature Reserve, Mucking Flats and Mucking Creek are situated within the port's jurisdiction limit to the west (see Appendix - Sensitivity map). This area contains SSSIs, SINCs and Ramsar sites All activities which could have a detrimental effect on the protected species and habitats in this area should be kept to a minimum. Access to the foreshore for both personnel and vehicular transport for oil spill cleaning is difficult due to a non-maintained road.. The preferred method of cleaning this area of great sensitivity is to wipe away the excess oil and then let nature and wave actions take its course to do the remaining cleaning. Access from the water can be achieved and booms deployed afloat using contractor vessels. Natural England should be consulted from the outset to ensure that the SSSIs and SINCs have not been affected and for possible post monitoring of the area. (See Part 9, section 9.1 for contact details).

4.6 Tidal Cycles

If the oil spill cannot be contained before the tide changes, due to the tidal nature of the Thames Estuary, contamination is therefore likely to be spread upstream on the flood tide and downstream on the ebb tide. Continuing recontamination following each tidal cycle is possible following the clean-up operations, thereby extending the clean-up period of a large incident over several weeks. Unless access is vital to pedestrian and vehicle traffic, the area should only be cleaned on the ebb tide.

4.9 Shoreline Response Centre

During a major shipping oil pollution incident spill, this requires a **Tier 3** co-ordinated response, from both national and local authorities, the MCA will take initial action. These are most likely to require a SRC if a significant amount of oil impacts a considerable length of coastline. The oil spill could impact on London Gateway's jurisdiction and stretch further in the Port of London Authority's jurisdiction and therefore co-operation will be needed between both authorities.

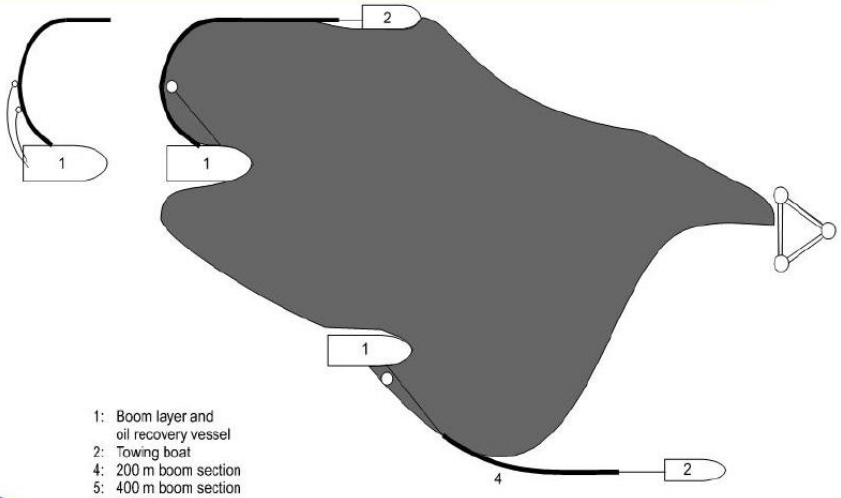
The role of the SRC is to co-ordinate and leads the on-shore response. In order to achieve that it must:-

- Determine the extent of pollution along the affected coastline
- Devise and agree an overall strategy for the clean-up response, assign priorities based on threat, impact and available resources.
- Propose, agree and initiate the shoreline clean-up response
- Obtain and allocate resources required on an agreed priority basis
- Agree working liaison with the Environmental Agency.

- Ensure a reconnaissance procedure is implemented after clean-up has been completed to monitor sensitive areas or species that were affected.

Booming Systems

J-Configuration



1: Boom layer and oil recovery vessel
2: Towing boat
4: 200 m boom section
5: 400 m boom section
O: Skimmer

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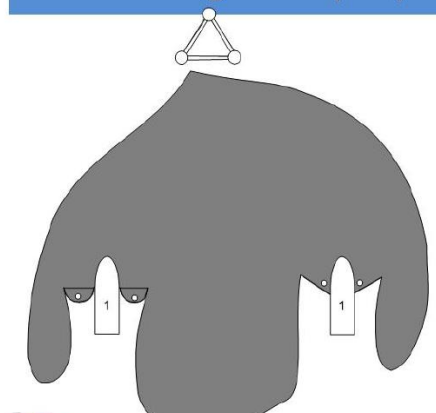
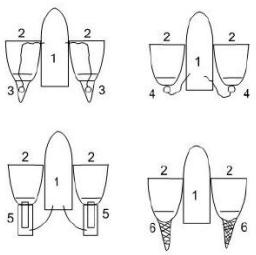
Single Ship Systems





1: Oil recovery vessel
2: Jib arm
3: Sweep with skimmer pocket
4: Sweep with built in skimmer
5: Sweep with belt skimmer
6: Sweep with trawl hag

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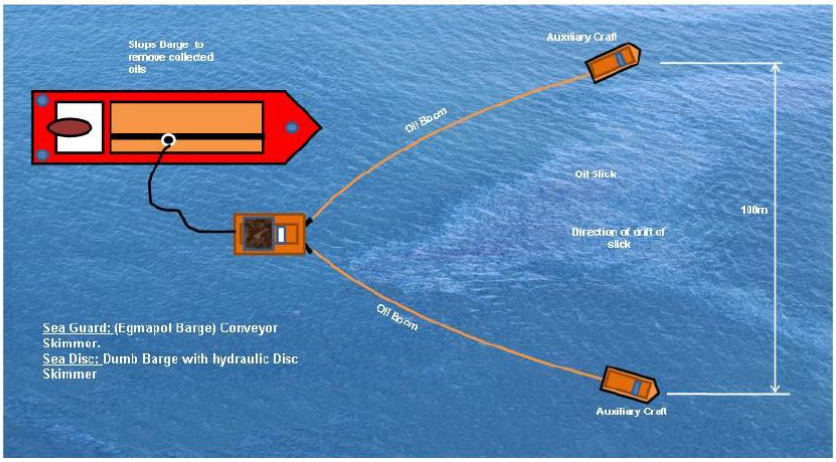
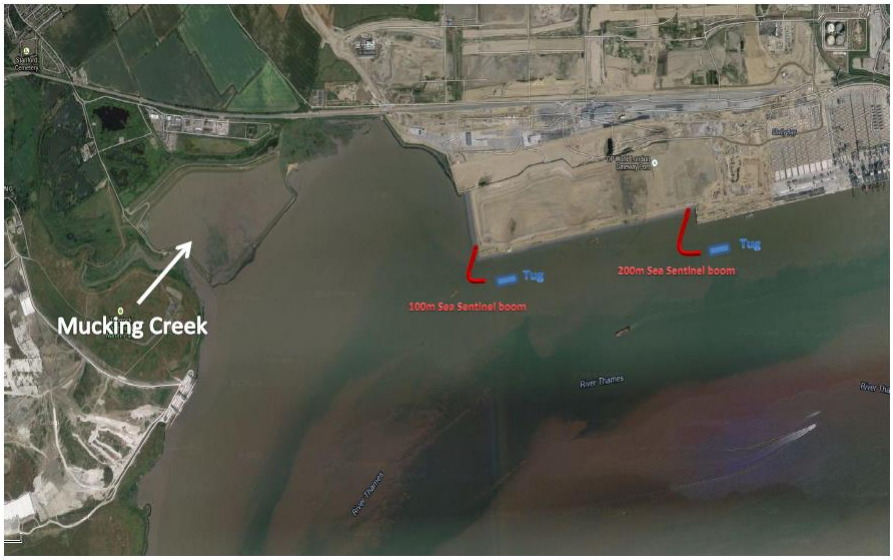
Oil Recovery Deployment at Sea.




Mucking Creek
Tug
100m Sea Sentinel boom
Tug
200m Sea Sentinel boom
River Thames

5 Below are a series of organisational charts (Figures 1-4) which illustrate the personnel likely to be involved in an oil spill incident ranging from Tier 1 through to Tier 3, including at which Tier each team member will be called upon (Table).


DP WORLD
Process Excellence
Andrew Woods
Mark Viner
Richard Green
Tom Sutton
Dimitrios Soulos
Anna O'Sullivan
James Ray
Graham Turner
Ryan Connell
Gemma Hopkins


DP WORLD
Planning and Control – Direct Reports
Matt Thornber
Tony Dant
Panos Fragkos
David Graham
Marc Tobin
Sorin Goloborodco
Selena Derks
Carlos Marti
Wade Norton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Carlos Marti
Wade Norton


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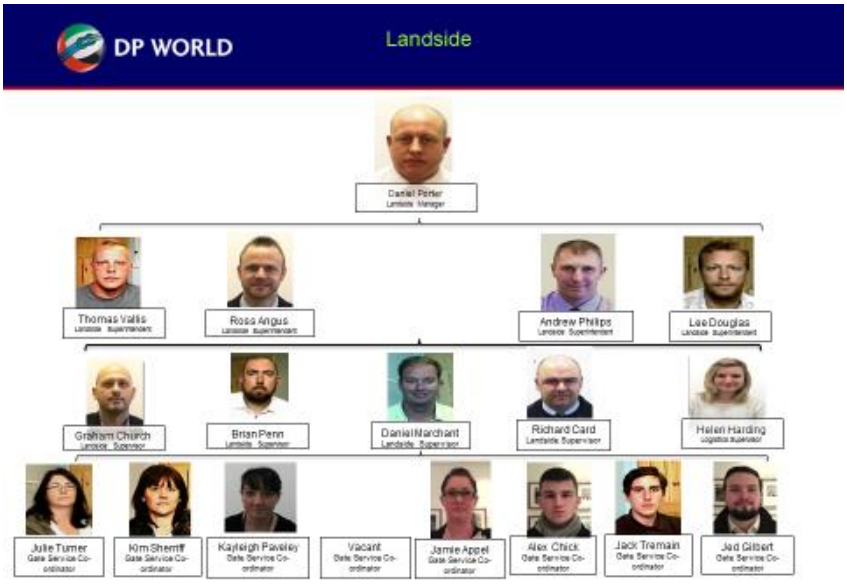
Planning and Control
Carlos Marti
Planners
Controllers
Tony Lovett
Armando Guzman
Simon Bayfield
Matt Griffiths
Ashleigh Abbey
Mark Bates
James Stuart
Connor Wilkinson
Mitchell Dent
Paul Cook


DP WORLD
Planning and Control
Marc Tobin
Planning Superintendent
Planners
Controllers
Keely Moore
Operations Planner
Stephen Curling
Operations Planner
Cristina Galán
Terminal Controller
Lynsey Mayot
Terminal Controller
Craig Mealing
Terminal Controller
Lee Carey
Terminal Controller
Terry Bowles
Terminal Controller
Keith O'Sullivan
Terminal Controller
Darren Spratt
Terminal Controller


DP WORLD
Planning and Control
Selena Danks
Planning Superintendent
Planners
Controllers
Andrew Hutton
Operations Planner
Adam Musial
Operations Planner
David Oddy
Operations Planner
Tommy Phillips
Terminal Controller
Colin Dutton
Terminal Controller
George Costea
Terminal Controller
Chris Vale
Terminal Controller
Luke Wills
Terminal Controller
Christine Greig
Terminal Controller
Ryan Young
Terminal Controller


DP WORLD
Planning and Control
Planners
Controllers
Paul Hanford
Neil Shanlester
Andrew Pigney
Panos Boutos
Aron Taylor
Nikki Allabush
Lee Warren
Ian Wills
Barry Sparling
Karen O'Hara


DP WORLD
Landside
Daniel Porter
Thomas Vallis
Ross Angus
Andrew Philips
Lee Douglas
Graham Church
Brian Penn
Daniel Marchant
Richard Card
Helen Harding
Julie Turner
Kim Sherriff
Kayleigh Pavelley
Vacant
Jamie Appel
Alex Chick
Jack Tremain
Jed Gilbert


DP WORLD
BCP – (report to Landside Superintendents)
Brian Armstrong
BCP Supervisor
Matt Dunn
BCP Supervisor
David Worsfold
BCP Supervisor
Mark Heath
BCP Operative
James Knell
BCP Operative
Mark Wills
BCP Operative
Sam Parish
BCP Operative
Sarah Williams
BCP Operative
Vacant
BCP Operative
Kevin Ball
BCP Operative
Trevor Hindle
BCP Operative
Harry Challis
BCP Operative
Andrew Gibbons
BCP Operative
Alan Tenset
BCP Operative


DP WORLD
Terminal Operatives – Team Victory
V1
Neil Southwood
Simon Cowling
Michael Gardiner
Daniel Mole
Barry Stevens
Ross Finlay
V2
Ben Burnell
Ray Cornell
Ryan Fredericks
Chris Nicholas
Tomas Rubys
Thomas Sharp
Thomas Sims
Andrew Slater
V3
Robert Cranfield
Fred Methven
Nathan Gouge
Scott Green
Peter Littmoden
Sean Piggott
Gavin Porter


DP WORLD
Shift Managers – Team Victory
Shift Managers' Direct Reports
Mark Viner
Carlos Marti
Trevor Crickmar
Ross Angus
Stuart Fraser
Colin Allobush
Terminal Trainer
Lee Gearing


DP WORLD
Terminal Operatives – Team Victory V1
Adam Taylor
Andrew Slater
Chris Nicholas
Chris Sandford
Christopher Lowe
Ed Ford
Haydan Gilbey
Liam Shirley
Martin Chapman
Ray Cornell
Ryan Fredericks
Shaun Mills
Thomas Sharp
Thomas Sims
Tomas Rutys
Wayne Treadwell


DP WORLD
Terminal Operatives – Team Victory V2
Alex Warburton
Christopher Tuttle
James Lacey
Jessica Tuffen
Joshua Bias-Ely
Karl Barden
Lance Norris
Marc Fogg
Mark Lilley
Martin Austin
Mitchell Kidd
Samantha Field
Simon Cowing
Stephen Berry
Stuart Gill
Stuart Lawrence


DP WORLD
Terminal Operatives – Team Victory V3
Anthony Bush
Anthony Rymer
Chris Edwards
Christopher Carter
Craig Potter
Gareth Cross
John Harris
Marek Koniarski
Mark Finch
Martin Allchin
Matthew Cairns
Nicholas Felton
Shaun Ramsey
Tihomir Trandev
Tony Smith
Tony Thornton


DP WORLD
Shift Managers – Team Invincible
Shift Managers' Direct Reports
Richard Green
Sorin Gaicbarodco
Rob Compton
Andrew Phillips
Mark Tanner
Craig Southwick


DP WORLD
Terminal Operatives – Team Invincible I1
Barry Connor
Bradley Ford
Carl Marron
Daniel Martin
Darren Close
Grant Smallman
Greg Damiano
Jack Edmond
Jack Smith
Jerry Spiers
John Gray
Lewis Isley
Martin Parsons
Nathan Pearn
Philip May
Scott Keating
Thomas Phypers

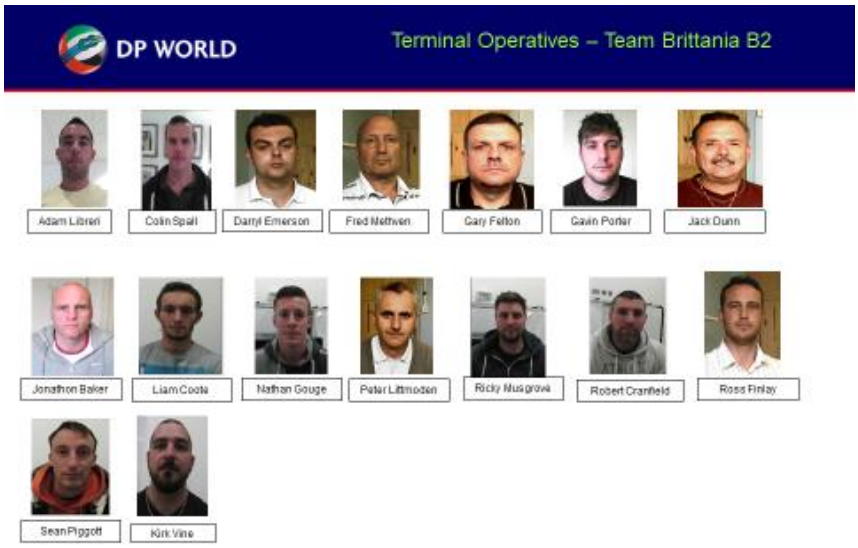

DP WORLD
Terminal Operatives – Team Victory I3
Anne Jacques
Adam Stebbing
Tony Camfield
Bradley Millbank
Ged Samanta
Jack Boatwright
Jae Lovell
John Greig
John Wells
Melanie Kavanagh
Steve Kavanagh
Nikolas Rogocki
Paul Dann
Peter Taylor
Philip Heiser
Stuart Barrachina


DP WORLD
Terminal Operatives – Team Invincible I2
Akhter Shaikh
Brian Eaton
Chris Morris
Daniel Holding
Daniel Mole
Darran Arnold
Ionel Magean
Jamshaid Abrar
Joseph Miller
John Butler
Michael Gardiner
Michael Jones
Mohammed Dualeh
Neil Boultwood
Owen Wells
Stefan Edmeades


DP WORLD
Shift Managers – Team Britannia
Shift Managers' Direct Reports
James Ray
Marc Tobin
Ricky Worsfold
Lee Douglas
Adam Clarke
Karolina Dywan
Richard Vallance

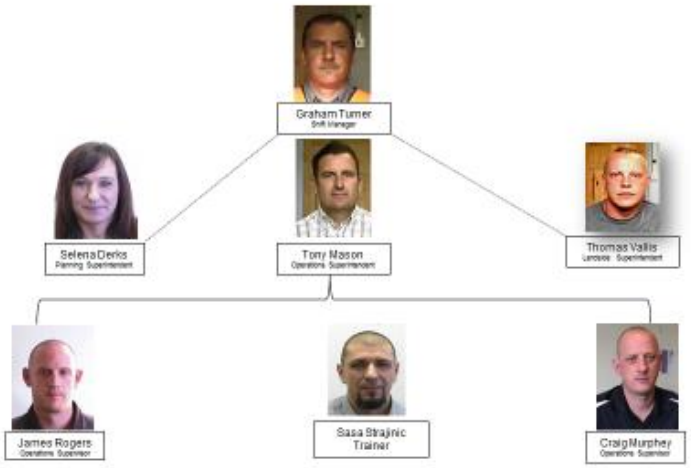

DP WORLD
Terminal Operatives – Team Brittania B1
Alex Scott
Barry Stevens
Christopher Veitch
Daniel Atkins
Darren Carpenter
Hadley Nicholls
James Macmillan
James Mason
Luke Comte
Michael Clarke
Michael Malley
Paul Burns
Paul Davis
Ricky Haines
Terence Dyas
Thomas Naylor
Robert Dickenson


DP WORLD
Terminal Operatives – Team Brittania B3
Daniel Dabuleanu
Daniel Tucker
David Alexander
Jack Buttwell
Jackie Jaggard
Jade Hemmersley
John Hicks
Jonathon Mason
Lee Bates
Mark O'Sullivan
Mel Lewy
Paul Cornthwaite
Ryan Goane
Scott Mercer
Stephen Allabush
Steven Monteith
Tony Aldwinckle


DP WORLD
Terminal Operatives – Team Brittania B2
Adam Libren
Colin Spall
Darryl Emerson
Fred Methven
Gary Felton
Gavin Porter
Jack Dunn
Jonathon Baker
Liam Coote
Nathan Gouge
Peter Littmoden
Ricky Musgrove
Robert Cranfield
Ross Finlay
Sean Piggott
Kirk Vine

DP WORLD Shift Managers – Team Endurance

Shift Managers' Direct Reports



DP WORLD Terminal Operatives – Team Endurance E1


DP WORLD
Terminal Operatives – Team Endurance E2
Aaron Kemp
Ben Parkinson
Bradley Stevens
Craig Perrin
Darren Clark
Gareth Eaton
Hazel Methven
Ian Edmunds
Ian Frost
Jacalyn Haseman
Jonathan Meare
Melvin Beluso
Nick Starling
Paul Hewitt
Peter Crabb
Simon Massey
Tom Kelly


DP WORLD
Terminal Operatives – Team Endurance E3
Adam Young
Danny Ansell
David Smith
Dean Baker
Emileigh Bridge
Ian Jones
Jack Lacey
Leon Whitehead
Marc Merritt
Mark Butcher
Matthew Butler
Michael Tween
Paul Whitbread
Steven Blackwell
Terry Mashochera
Will Goble