CARNARVON HIBISCUS PTY LTD

VIC/RL17
OIL POLLUTION EMERGENCY PLAN (OPEP)
WEST SEAHORSE DECOMMISSIONING

DOC NO: WSH-CHP-60-RG-RA-0002

Rev	Issue Date	Reason For Issue	Originator	Reviewer	Approver
0	17/11/2023	ISSUED FOR DECOM OPERATIONS	BG	KR	KP

COMMERCIAL-IN-CONFIDENCE

Submitted by Carnarvon Hibiscus Pty Ltd as the titleholder and operator of the VIC/RL17 Retention Lease.

COMMONWEALTH OF AUSTRALIA
OFFSHORE PETROLEUM AND GREENHOUSE STORAGE ACT, 2006

HOW TO USE THIS OIL POLLUTION EMERGENCY PLAN (OPEP)

Section 1: DRILLING CAMPAIGN OVERVIEW

- Carnarvon Hibiscus Policy Requirements
- Activity Scope & Location
- Interface with Internal and External Plans
- Division of Responsibility and Control Agencies
- Level Response Structure

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Section 2: FIRST STRIKE OIL SPILL RESPONSE ACTIVATION

- Level 2/3 Incident (Loss of Well Control Crude Oil Spill) – First Strike Activation
- Level 2 Incident (Marine Diesel Spill) – First Strike Activation
- Level 1 Incident – Rig or Vessel Release

USE THIS SECTION FIRST IF A HYDROCARBON SPILL OCCURS

Section 3: NOTIFICATION & ALERT PROCEDURES

- Initial Notification (All Spills)
- Notifications (External)

Section 4: RESPONSE ORGANISATION

- Response Organisational Structure (Roles & Responsibilities, Support Organisations)
- Incident Action Planning (IAP)
- Incident Assessment (Situational Awareness and Level Confirmation)

Section 5: OIL SPILL RISK ASSESSMENT/RESPONSE PRIORITIES

- Spill Scenarios
- Oil Characteristics, Fate/Weathering Data and Predicted Zone of Potential Impact
- Environmental Sensitivities
- Oil Spill Protection Priorities
- Response Priorities
- Applicable Response Options
- Net Environmental Benefits Assessment
- Level 3 Oil Spill Budget

Section 6-16: RESPONSE OPTIONS/STRATEGIES

- **Section 6**: Source Control
- **Section 7:** Monitor and Evaluate
- **Section 8:** Dispersant Application
- **Section 9:** Contain and Recover
- **Section 10**: Protection and Deflection
- **Section 11:** Shoreline Clean-up
- **Section 12**: Oiled Wildlife Management
- **Section 13:** Waste Management
- **Section 14**: Occupational Health & Safety Management
- **Section 15**: Termination Criteria
- **Section 16:** Operational & Scientific Monitoring

Section 17: OPEP RESPONSE PREPAREDNESS

- Drills/Response Exercises
- Audit

Appendices: DATA

- Appendix A: Notification and Reporting Forms
- Appendix B: IMT Management Forms
- Appendix C: Net Environmental Benefits Methodology
- Appendix D: Oil Spill Trajectory Modelling Summary
- Appendix E: Hydrocarbon Material Safety Data Sheets & West Seahorse Crude Assay

Table of Contents

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Drilling Project Manager (Onshore)	EXCEED	
Drilling Supervisor (Offshore)	EXCEED	
HSE Advisor	EXCEED	
Materials and Logistics Coordinator	EXCEED	
Shore base Logistics Supervisor	EXCEED	
Vessel Master(s)	TBC	
Helicopter Support Service	TBC	
Incident Control Centre (ICC)	EXCEED	
Australian Maritime Safety Authority (AMSA)	AMSA	
Australian Marine Oil Spill Centre	AMOSC	
Department of Transport and Planning (Victoria)	DOT	

ABBREVIATIONS & ACRONYMS

AASFA	Agriculture and Animal Services Function (NSW)
AAV	Aboriginal Affairs Victoria
ADF	Australian Defence Force
ADIOS	Automated Data Inquiry for Oil Spills
AHO	Australian Hydrographic Office
AHTS	Anchor Handling Tug and Service
AIIMS	Australian Inter-service Incident Management System
ALARP	As Low as Reasonably Practicable
AMOSC	Australian Marine Oil Spill Centre
AMOSPlan	Australian Marine Oil Spill Plan
AMSA	Australian Maritime Safety Authority
APASA	Asia-Pacific Applied Science Associates
CA	Control Agency
CRR	Crisis Control Room
CDO	Chief Development Officer
CHPL	Carnarvon Hibiscus Pty Ltd
CMP	Crisis Management Plan
CMT	Crisis Management Team
DEPI	Department of Environment and Primary Industry (Vic)
DIMT	Drilling Incident Management Team
DOE	Department of Environment (Com)
DOI	Department of Industry (Com)
DPIPWE	Department of Primary Industries Water and Environment
DSDBI	Department of State Development, Business and Innovation (Vic)
DOT	Department of Transport and Planning (Vic)
EMLO	Emergency Management Liaison Officer
EMMV	Emergency Management Manual Victoria
EP	Environment Plan
EPA	Environment Protection Authority
EPBC	Environment Protection Biodiversity Conservation
ERP	Emergency Response Plan
ERG	Emergency Response Group
ESC	Environmental & Safety Coordinator
FRC	Fast Rescue Craft
FWADC	Fixed Wing Aerial Dispersant Capability
GOR	Gas Oil Ratio
GRN	Global Response Network
HLV	Heavy Lift Vessel
HSEQ	Health Safety Environment and Quality
HSSE	Health Safety Security & Environment
IAP	Incident Action Plan
IC	Incident Controller
ICC	Incident Control Centre
IMO	International Maritime Organization
IMT	Incident Management Team
IPIECA	International Petroleum Industry Environmental Conservation Association
JSEA	Job Safety & Environmental Analysis
LC50	Lethal Concentration (50%)
MAC	Mutual Aid Contact
MDO	Marine Diesel Oil
MOSES	Marine Oil Spill Equipment System
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
MSV	Multi Service Vessel

NATPLAN	National Plan for Maritime Environmental Emergencies
NEBA	Net Environmental Benefits Assessment
NGO	Non-Government Organization
NOAA	National Oceanographic and Atmospheric Association (USA)
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NRT	National Response Team
NRST	National Response Support Team
OHS	Occupational Health & Safety
OIM	Offshore Installations Manager
OPEP	Oil Pollution Emergency Plan
OPGGSA	Offshore Petroleum and Greenhouse Gas Storage Act 2006
OPGGSER	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009
OPEP	Oil Pollution Emergency Plan
OSCA	Oil Spill Control Agent
OSMP	Operational & Scientific Monitoring Plan
OSRA	Oil Spill Response Atlas
OSTM	Oil Spill Trajectory Modelling
PINP	Phillip Island Nature Park
PNEC	Predicted No Effects Concentration
Ppb	Parts per Billion
PPE	Personal Protective Equipment
PSZ	Petroleum Safety Zone
POLREP	Pollution Report (Form)
PV	Parks Victoria
QET	Quick Effectiveness Test
RCC	Rescue Coordination Centre
RMS	Roads and Marine Services
ROV	Remotely Operated Vehicle
SCAT	Shoreline Cleanup Assessment Technique
SITREP	Situation Report (Form)
SMPC	State Marine Pollution Controller
SOPEP	Shipboard Oil Pollution Emergency Plan
TASPLAN	Tasmanian Marine Oil Spill Contingency Plan
TASPORTS	Tasmanian Ports Corporation
TEMP	Tasmanian Emergency Management Plan
TforNSW	Transport for NSW
UK	United Kingdom
USA	United States of America
VIC	Victoria
VICPLAN	Victorian Marine Pollution Contingency Plan
WHS	Workplace Health & Safety
WSH	West Seahorse
ZPC	Zone of Potential Contact
ZPI	Zone of Potential Impact

1 WEST SEAHORSE DECOMMISSIONING CAMPAIGN OVERVIEW

1.1 CARNARVON HIBISCUS POLICY REQUIREMENTS

Carnarvon Hibiscus Pty Ltd (CHPL) is the operator of Retention Lease VIC/RL17 in the Gippsland Basin.The West Seahorse field is located within Retention Lease VIC/RL17, which was granted in November 2021. This was formerly production license area VIC/L31. The West Seahorse-3 (WSH-3) well was drilled and temporarily abandoned (suspended) as a potential future development well for the field, but it is now intended that the WSH-3 well will be permanently decommissioned.

Wardie-1 was a deviated exploration well drilled immediately following WSH-3 from an adjacent slot with the wells approximately 2.8 m apart. Wardie-1 was successfully plugged and abandoned in May 2008 in accordance with international standards for well integrity (NORSOK, 2013). After successfully cutting and removing the 13 3/8" casing and wellhead, multiple attempts to cut the 30" conductor were unsuccessful, and it remains in-situ approximately 2 m above the seabed. It is now intended to remove the conductor during decommissioning operations on WSH-3. Subject to the acceptance of the Environment Plan (EP) and Oil Pollution Emergency Plan (OPEP) (this document), operations will commence late 2024/early 2025.

This West Seahorse Project (VIC/RL17) OPEP outlines the oil spill response arrangements and strategies adopted by CHPL for responding to oil spills from decommissioning activities in the Gippsland Basin consistent with the Hibiscus HSEQ Policy. This OPEP also addresses the requirements of International Conventions and the Commonwealth and State regulatory requirements as outlined in the West Seahorse-3/Wardie-1 Non-production Operations Environment Plan **Section 3**. The practices adopted within this OPEP also follow those recommended by the International Petroleum Industry Environmental Conservation Association (IPIECA).

This document serves as a command and control tool and as a reference for CHPL related personnel and oil spill responders to facilitate an effective and timely response to any oil spills from CHPL's activities in the Gippsland Basin.

1.2 PURPOSE AND ACTIVITY SCOPE

1.2.1 PURPOSE

This OPEP documents the oil spill response strategies and spill response arrangements for the WSH Decommissioning activities to be undertaken by CHPL and its contractors. The document serves as a tool to facilitate a rapid and effective response to any oil spill associated with the campaign.

The objectives of this OPEP are to:

- Ensure the effective management of a marine pollution incident which may occur from CHPL Bass Strait Decommissioning activities;
- Provide specific guidance including proposed response and monitoring strategies for Level 1, Level 2 spills. Note that given the WSH-3 meets the requirements of a permanently abandoned well there is no risk of a Level 3 spill. Monitoring activities, as delineated in the Operational and Scientific Monitoring Plan (OSMP) appropriate to the nature and scale of the spill;
- Ensure procedures adopted are consistent and integrated with oil industry plans; and Government plans used by Victoria and Commonwealth agencies;
- Define relevant Zones of Potential Impact (ZPI) for CHPL drilling-related activities in the Gippsland Basin;
- Identify environmental sensitivities within the ZPI for protection;
- Identify escalation protocols to higher level spills; and
- Obtain acceptance of the response operations and strategies by government authorities.

1.2.2 ACTIVITY SCOPE

This OPEP covers all activities, as defined in the West Seahorse-3/Wardie-1 Non-production Operations Environment Plan (Doc No: CHPL-WSH3-HSEQ-PLN-001), which have the potential to result in oil spills which may impact the environment. For the purposes of this OPEP this includes:

- Vessel based decommissioning activities on WSH-3,
- Vessel based conductor removal activities on Wardie-1.

Activities excluded from this OPEP include:

- Vessels in transit between support bases and the WSH-3 location, defined as the 300m PSZ surrounding the well. (Vessels will be subject to their own Shipboard OPEP during transit and dock based operations).

This OPEP also addresses spill response activities within the 'worst case' credible oil spill ZPI; and operational and scientific monitoring within the Zone of Potential Contact (ZPC) as described in the OSMP. This covers Commonwealth waters and Victorian State waters.

This OPEP is activated on the release of any hydrocarbons (spills/leaks) to the marine environment associated with decommissioning related activities within the WSH-3 PSZ.

1.3 LOCATION

West Seahorse-3 is a deviated well, located in Commonwealth waters within the Retention Lease VIC/RL17, approximately 350km east of Melbourne, 20km offshore and 5km west of the Seahorse oil field (Figures 1, 2). The well lies in a water depth of 39.5m and the VIC/RL17 block size is 40km^2.

The WSH Field is located approximately 18km SSE of Loch Sport, with the closest landfall site 14km north-west on the Ninety Beach at a point midway between Loch Sport and Golden Beach.

The Marine Base for this drilling activity will be located at a suitable location between Port Anthony and Port of Melbourne or Geelong.

Other than emergency medical evacuation, aviation support for this activity will not be required.

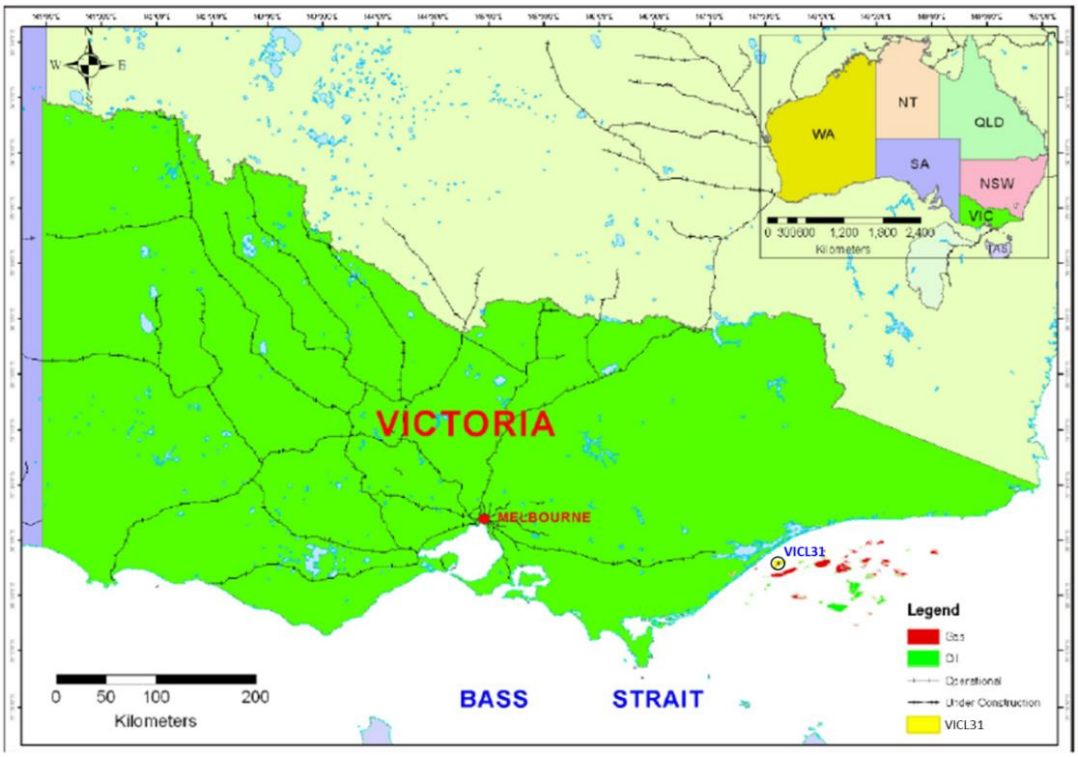


Figure 1: Location of VIC/L31 – now VIC/RL17

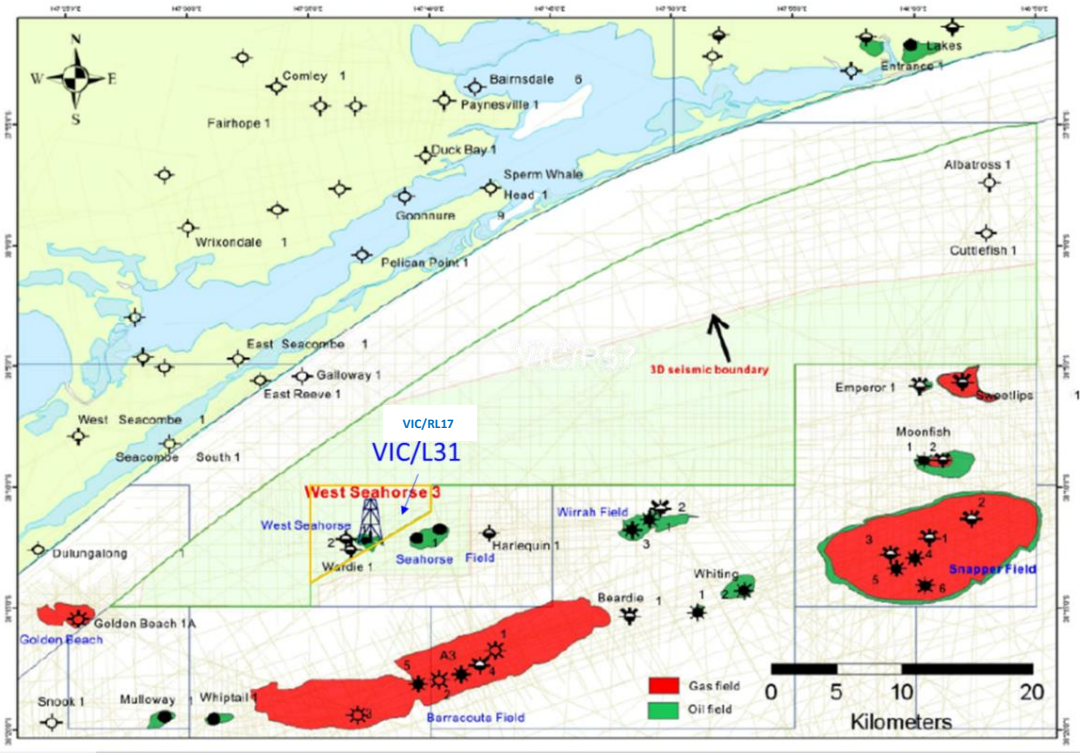


Figure 2: Location of West Seahorse 3

1.4 INTERFACE WITH OTHER PLANS

1.4.1 CHPL (& associated) COMPANY PLANS

This OPEP is integrated with the following plans which support drilling activities:

- Sea Lion and WSH Drilling Campaign (VIC/P57 & VIC/L31) Emergency Response Plan (Doc No: SLN-CHP-60-HS-PR-0001) detailing procedures in the event of an emergency situation;
- Offshore Support Vessel Emergency Response Plans and Shipboard Oil Pollution Emergency Plans (SOPEP);
- Hibiscus Petroleum Crisis Management Plan (Doc No: HPB-100-HX-6180-0000001);
- VIC/RL17 Well Operations Management Plan (Doc No: WSH-CHP-10-RG-RP-0002);
- WSH-3/Wardie-1 Non-production Operations Environment Plan (Doc CHPL-WSH3-HSEQ-PLN-001); and
- Operational & Scientific Monitoring Plan (Doc No: SLN-CHP-60-RG-RA-0002).

It should be noted that Support Vessels operate under an approved SOPEP to address vessel-based spills. In cases involving minor vessel-based hydrocarbon spills or during transit, the SOPEP (or equivalent) will be activated.

For all spills associated with Vessel based decommissioning activities, CHPL is the Control Agency (CA) and this OPEP will be activated. As CA, CHPL will take appropriate action to combat marine oil pollution from the Decommissioning Campaign through the strategies outlined in this document and retains responsibility for all spills from the Decommissioning Campaign.

For vessel spills AMSA is the legislated CA and will direct spill clean-up activities in the marine environment. CHPL will monitor and assist with these spills as far as possible at the direction of AMSA.

1.4.2 OTHER PLANS

This OPEP is utilises terminology and interfaces consistently with the following plans:

National Plan for Maritime Environmental Agencies (NATPLAN) (AMSA, 2020)

- Outlines the resources and services that may be provided by AMSA and other government agencies to assist CHPL.
- Details nationally consistent processes and procedures spill response management and tactics and
- Outlines a range of guidance documents on the same.

https://www.amsa.gov.au/sites/default/files/national-plan-maritime-envrironmental-emergencies-2020.pdf

Victorian Maritime Emergencies (Non-Search & Rescue) Plan (VICPLAN)

- Specifies control agency responsibilities and obligations under Victorian laws in Victorian waters.
- Specifies the mechanism by which CHPL will engage to support the state for oil spill response and wildlife affected by marine pollution.

https://www.emv.vic.gov.au/responsibilities/state-emergency-plans/state-maritime-emergencies-non-search-and-rescue-plan

Victorian State Emergency Management Plan

- Outlines agency obligations for emergency management in Victorian state waters and shorelines.

https://www.emv.vic.gov.au/sites/default/files/embridge_cache/emshare/original/public/2020/09/78/c1b7be551/Victorian%20State%20Emergency%20Management%20Plan%20%28SEMP%29.pdf

AMOSPlan

- Outlines the support (people, services and equipment) from AMOSC to CHPL.
- Outlines the mutual aid (people, services and equipment) available from AMOSC's members to CHPL.
- Details process to access surge spill response people, services and equipment.

http://www.amosc.com.au/

1.5 DIVISION OF RESPONSIBILITY & CONTROL AGENCIES

This section defines the Control Agencies (CA) which may be involved in an oil spill originating from VIC/RL17 decommissioning activities. Consistent with NATPLAN definitions, the CA for oil spill response is the government agency or titleholder assigned by legislation, administrative arrangement or within a relevant contingency plan to control response activities to a maritime environmental emergency. The CA will have responsibility for appointing the Incident Controller to control the operational response to an incident. The functions of the CA include:

- Developing, maintaining and exercising contingency plans and support arrangements (e.g. response assets, contracts, etc.) for the particular maritime environmental emergency for which they are responsible;
- Reporting to government on the status of response preparedness;
- Reporting to government on the progress of response operations; and
- Making recommendations to the government on when the response is complete.

The CAs for potential oil spills from VIC/P57 and VIC/L31 drilling activities according to jurisdiction are listed in **Table 1-2** and roles are described further in the sections below.

1.5.1 COMMONWEALTH

For 'petroleum activities' regulated under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGSA), the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is responsible for ensuring a titleholder OPEP is developed appropriate to the nature and scale of the activity and implemented in accordance with legislative requirements.

CA: For all 'level' spills within the WSH-3 PSZ, CHPL is the CA and this OPEP will be activated. As CA, CHPL will take appropriate action to combat marine oil pollution from the Decommissioning Campaign through the strategies outlined in this document and retains responsibility for all spills from the Decommissioning Campaign.

In Commonwealth waters, AMSA is the CA for shipping/vessels spills including those vessels involved in offshore petroleum activities. For vessel spills inside and outside the WSH-3 PSZ, AMSA will direct spill clean-up activities in the marine environment. *CHPL will monitor and assist with spills from support vessels as requested by AMSA*.

1.5.2 VICTORIA

The Emergency Risk and Resilience (ERR) section of the Department of Transport and Planning (DOT) and the Victorian EPA have the legislated responsibility to ensure that there is an effective response to an oil pollution incident in Victorian state waters (3nm from shoreline). Their responsibilities and the response arrangements for Victoria are outlined in the Emergency Management Manual Victoria (EMMV) (Part 7) legislated via the *Emergency Management Act 1986.*

CA: DTPLI is the CA for marine pollution in Victorian waters and maintains a response capability (equipment and trained personnel) throughout the state. In the event of an incident, DOT can facilitate (through NATPLAN) the provision of:

- State-owned equipment and resources;
- Access to national equipment and assets;
- Access to state and national response personnel; and
- Access to DTPLI's on-water response contractor.

Offshore operators (such as CHPL) can request DTPLI assistance when:

- The spill occurred in state waters (*not applicable to this OPEP)*;
- The spill is likely to enter state waters; and/or;
- The incident has exceeded the operator's capacity to respond.

Any requests for assistance is to be made initially to the DOT Duty Watch Officer followed by an email outlining details of the request for assistance, including asset and personnel requirements, to the Marine Pollution inbox semdincidentroom@transport.vic.gov.au. Within one hour of the receipt of the email DOT will begin to progress the request.

DTPLI requires the following from CHPL during an oil spill event which has the potential to affect Victorian coastal waters, in accordance with consultation guidance:

- Notify DOT of the incident as soon as practicable for situational awareness:
- As required, request a DOT Emergency Management Liaison Officer (EMLO) to engage with the CHPL Incident Management Team (IMT) or Emergency Response Group (ERG);
- When Incident Control Is transferred to DOT, provide a comprehensive handover briefing and identify who will continue to represent CHPL within the State IMT;
- Make all relevant resources available to the State IMT in support of the ongoing response.

TRANSFER OF CONTROL: The DTPLI may assume Incident Control in state waters under the following circumstances:

- The incident is greater than a Level 1 spill in state waters and requires immediate escalation;
- The incident occurred in Commonwealth waters but has impacted on state waters;
- The CA has requested state assistance;
- The state believes that the CA is not implementing an appropriate response to the incident.

In the event that an incident in Commonwealth waters impacts on state waters, DTPLI will only assume Incident Control over the impacted area in state waters. *CHPL will remain responsible for managing the origin of the spill outside Victorian coastal waters.*

When control of an incident is transferred from CHPL to DTPLI, CHPL will remain actively engaged in the state response via a CHPL Liaison Officer until stood down by the DTPLI Incident Controller. CHPL will make all relevant resources available to the State Incident management Team in support of the ongoing response.

Table 1-1 : Statutory Reporting Agencies, Control Agencies and Support Agencies for Oil Spills associated with VIC/RL17 Decommissioning Campaign

NATPLAN Level	Spill Source	Statutory Reporting Agency	Control Agency	Support Agencies
Level 1 (resolved at local or initial resources only (e.g. first strike)	Offshore Exploration and Production	NOPSEMA (Com)	CHPL	None Required
	Vessels at Sea	AMSA (Com) DOT (Vic)	AMSA (Com) DOT (Vic)	
Level 2 (more complex in size and may require deployment of jurisdiction resources beyond initial response)	Offshore Exploration and Production	NOPSEMA (Com)	CHPL	AMOSC (including mutual aid and core group) AMSA
	Vessels at Sea	AMSA (Com) DOT (Vic)	AMSA (Com) DOT (Vic)	

1.6 'LEVEL' RESPONSE STRUCTURE

Under NATPLAN arrangements, oil spills and their response requirements are categorized into three 'LEVELS' to convey the severity of the spill. These broad definitions and how they have been adapted from NATPLAN and referenced through this OPEP are summarized in **Table 1-2.**

Note these criteria are to be adapted to the individual incident. Not all characteristics need to apply in all cases, or to all incidents.

Table 1-2 : Definition of OPEP Spill Levels

Level	Guidance for Incident Level Classification	CHPL Spill Type/OPEP Response Action
1	**Management:** *Jurisdiction*: Single *Delegation*: Incident Controller responsible for all functions *No. Agencies*: First response Agency *Incident Action Plan*: Simple *Resources*: Resourced from within one area **Type of Incident** *Type of Response*: First strike *Duration*: Single Shift *Hazards*: Single Hazard **Resources at Risk**: *Human*: Potential for Serious Injuries *Environment*: Isolated impacts with natural recovery expected within weeks *Wildlife*: Individual Fauna *Economy*: Business Level Disruption *Social*: Reduced Services *Infrastructure*: Short term Failure *Public Affairs*: Local and regional media coverage	**Single release hydrocarbon ~<10tonnes (any type).** Response can be handled onsite by rig or vessel without extensive external assistance. Aerial observers and some AMOSC equipment may be deployed.
2a	**Management:** *Jurisdiction*: Multiple *Delegation*: Some functions delegated or Sections created *No. Agencies*: Routine multi-agency response *Incident Action Plan*: Outline *Resources*: Requires intra-state resources **Type of Incident** *Type of Response*: Escalated *Duration*: Multiple Shifts (Days to Weeks) *Hazards*: Single Hazard **Resources at Risk**: *Human*: Potential for Loss of Life *Environment*: Significant impacts and recovery may take months. Remediation required *Wildlife*: Groups of Fauna or threatened fauna *Economy*: Business Failure *Social*: Ongoing Reduced Services *Infrastructure*: Medium term Failure *Public Affairs*: National media coverage	**Single Release~10-1000tonnes (diesel) or impacts on state waters.** Response can be handled onsite by rig or vessel without extensive external assistance. Aerial observers and some AMOSC resources may be deployed.
2b		**Single Release ~10-1000tonnes (crude) or impacts on state waters** Response requires some external assistance. Additional resources could be drawn from: • AMOSC; • Limited NATPLAN resources (aerial observers, etc.)

3	**Management:** *Jurisdiction*: Multiple jurisdictions including international *Delegation*: All functions delegated and or divisions created *No. Agencies*: Agencies from across industry and government *Incident Action Plan*: Detailed *Resources*: Requires national or international resources **Type of Incident** *Type of Response*: Campaign *Duration*: Extended Response (weeks to months) *Hazards*: Multiple Hazards **Resources at Risk**: *Human*: Potential for Multiple loss of life *Environment*: Significant area and recovery may take months. Remediation required. *Wildlife*: Large Numbers of Fauna *Economy*: Disruption to a Sector *Social*: Reduced Quality of Life *Infrastructure*: Severe Impairment *Public Affairs*: International media coverage	**Release of more than ~1000tonnes (crude)** Response requires significant external assistance. Additional resources could be drawn from: • AMOSPlan/AMOSC (Local Industry Assistance); • Victorian State Plan (via NATPLAN); • NATPLAN (Via AMSA); • NSW State Plan (via NATPLAN); • International Resources (e.g. Oil Spill Response Limited (OSRL))

Note that whilst the classification for Level 3 Spills have been identified above, the response has not been assessed under this OPEP as the well has been abandoned and there is no risk of a Crude oil spill. The worst case spill is that of a Marine Diesel Oil spill potentially caused by a vessel collision. The assessment only considers Victorian State waters as modelling shows no marine diesel oil spill would extend beyond this ZPI.

2 FIRST STRIKE OIL SPILL RESPONSE ACTIVATION

This section provides information and guidelines on initial oil spill response actions. This information is intended to cover the information which is required in the first 24hrs of a response. This information should be read in conjunction with individual role statements in **Appendix B** for key team ERG/IMT Members

2.1 LEVEL 2 INCIDENT (VESSEL MARINE DIESEL SPILL)

Table 2-1: First Strike Incident Management Team (IMT) Activation for Level 2 Marine Diesel Spill

Timeframe	Action	Responsibility
Immediate	1. Manage the safety of personnel on-board and in operational area – activate evacuation plans if required, control the source of spill if safe (Refer **Section 6**).	Vessel Master
	2. Estimate the quantity of oil released, the weather/sea state in the area, the source of the spill and status on the spill source (i.e. continuous, plugged).	Vessel Master
	3. Notify Exceed Supervisor	Vessel Master
	4. Notify Exceed Superintendent	Exceed Supervisor
	5. Notify Exceed Project Manager	Exceed Superintendent
	6. Notify CHPL Project Manager	Exceed Project Manager
30 Minutes	7. Initiate Notification and Alert Procedures (Refer **Section 3**) (POLREP) ensuring: • Hibiscus Petroleum notified of incident; • Level 2 support agencies to begin preparations; • Incident management team (IMT) activation; • Regulatory authorities notified.	CHPL Project Manager
	8. Send emergency call out on marine radios **VHF Channel 16** to warn other vessels in the immediate area of the spill. Warn them of: • Type of accident, such as collision or leak. • Where the accident has occurred. • Possible hazards such as the risk of fire or explosion. • Where the slick is moving either towards or away. • Recommended actions (including exclusion area requirements).	Vessel Master
90 Minutes	9. Obtain Situational Awareness – activate Monitor and Evaluate Response Option (refer **Section 7**) including: • Activate surveillance by AHTS vessels (if possible); • Deploy tracking buoys from AHTS Vessels; • Activate resources for aerial surveillance of spill (OM01-Oil Spill Surveillance and Reconnaissance).	IMT Leader Planning Officer
	10. Manage the Safety of all Responders (refer **Section 14** – OHS/WHS Management)	IMT HSSE Coordinator

2hrs	11. Seek information from surveillance activities (vessel-based initially) to understand slick type, volume and trajectory; and information available from *Vessel* as to leak status and rates, changes to the appearance of the slick, direction, weather and sea-state conditions providing this information to the IMT Leader. Formally log and record this data on a time basis. • Confirm trajectory via manual calculation: • Zone of Potential Impact (trajectory); and • Environmental Resources at Risk (Refer OSRA in **Appendix H**).	IMT Planning Officer
	12. Activate RPS-APASA Oil Spill Trajectory Modelling Agreement and model with available data from *Vessel* (including hazardous area information and any proposed dispersant use from First Strike Vessel Dispersant)	IMT Environmental Officer
	13. As appropriate to the spill size activate resources for the following OSMP operational modules (refer **Section 16**): • OM05: Wildlife Surveys (Marine Mega-fauna and Seabirds) • OM09: Shoreline Assessment (SCAT) • OM03: Assessment of Hydrocarbons in Marine Waters including monitoring for chemical dispersant	**IMT Planning Officer** IMT Environmental Officer IMT Logistics Officer IMT Operations Officer
5hrs	14. Confirm Safety Exclusion Zones based upon OSTM feedback and instigate necessary vessel and aviation exclusions (as appropriate).	IMT Leader
	15. Notify External Agencies of exclusion requirements (AMSA, AHO) and provide notifications to marine stakeholders.	CHPL Project Manager (or delegate)
	16. Provide update (SITREP) all regulatory bodies (as required based upon **Table 3.3**) (Forms located in **Appendix C).**	IMT Leader
	17. As appropriate to the spill size, issue Media Statement by Company Spokesperson	CHPL Project Manager
	18. As appropriate to size of spill prepare Communications Plan for the IMT	**IMT Logistics Officer**
	19. As appropriate to the spill size, develop IMT Staffing Roster/Plan to cover IMT activities	**IMT Finance and Administration Officer**
6hrs	20. Undertake an initial NEBA (with AMOSC, DTPLI ESC specialist) to determine the oil spill response options to combat the spill. Information should consider: • Preliminary OSTM results & oil slick surveillance activity feedback; • Potential time to impact sensitive resources.	**IMT Leader** IMT Environmental Coordinator DOT Environmental & Scientific Coordinator AMOSC
	21. From NEBA develop and document an initial Incident Action Plan (IAP).	IMT Leader
8hrs	22. As determined from NEBA, direct SCAT Resources (OM08: Shoreline Assessment (SCAT)) to predicted shoreline contact area to undertake assessment.	IMT Environmental Coordinator
	23. Manage the Safety of all Responders – develop Site Safety Plan (refer **Section 14** – OHS/WHS Management)	IMT HSSE Coordinator

Timeframe	Action	Responsibility
	24. Develop resourcing needs for the identified and immediate options selected. Liaise with support organizations for requirements and arrange equipment and personnel provisions (as appropriate). Assess ongoing resourcing needs for an on-going incident and establish a forward resourcing plan.	IMT Planning Officer
	25. Provide update (SITREP) to all regulatory bodies (as required based upon **Table 3.3**) (Forms located in **Appendix C**).	IMT Leader
	26. On the basis of the approved IAP implement response options as determined in the IAP and described in **Section 5** of this OPEP. Obtain resources (as necessary) from: • AMOSPlan • NATPLAN via AMSA Liaison Officer • VICPLAN via DTPLI Liaison Officer	IMT Logistics Officer IMT Operations Officer IMT Planning Officer
	27. Assess, based upon IAP, the waste management resources and disposal locations developing a Waste Management Sub-plan.	IMT Waste Management Coordinator
12-18hrs	27. Daylight permitting, receive feedback from OM08-Shoreline Assessment (SCAT) on expected coastline impact areas and recommendations with respect to shoreline clean-up. Provide data to DTPLI for assessment and deploy CHPL Liaison Officer and IMT Waste Management Coordinator to State CA IMT to coordinate resource deployment requirements from CHPL. Initiate **Section 11** [Shoreline Clean-up] as requested.	**IMT Leader** IMT Environmental Coordinator
	28. Provide update to IMT Leader on IAP progress against objectives.	IMT Planning Officer
	29. Convene planning/timeout meetings to review the status of the IAP actions.	IMT Leader
	30. Implement Forward Resourcing Plan.	IMT Planning Officer
18hrs	31. Undertake risk assessments for response activities and initiate induction programs for CHPL-controlled response personnel	IMT HSSE Coordinator
	32. Daylight permitting, receive feedback from OM05: Wildlife Surveys marine Mega Fauna and Seabirds to identify possible oiled wildlife: Provide data to DTPLI/DEPI. Initiate **Section 12** [Oiled Wildlife Management] support as requested.	**IMT Leader** IMT Environmental Coordinator
24hrs	33. Receive updated situational awareness information from monitor and evaluate activities (refer **Section 7**): 1. Tracking buoy information; 2. Aerial surveillance activities; 3. Oil Spill Trajectory Modelling forecasts	IMT Environmental Coordinator

Timeframe	Action	Responsibility
	34. Convene regular planning/timeout meetings to review the status of the IAP actions and reassess against updated situational awareness information: • Incident Response Priorities • Ongoing Strategies Development • Ongoing NEBA Assessments • Changing response Objectives	**IMT Leader** IMT Team DOT Liaison Officer AMSA Liaison Officer
	35. Monitor waste generation with revisions to Waste Management Plan as required. Status to be provided to IMT Leader	IMT Waste Coordinator
	36. Monitor OHS/WHS Performance during the response and report to IMT Leader	IMT HSSE Coordinator
	37. Continue operational surveillance as defined in the OSMP (refer **Section 16** for details) to inform the oil spill response activities and IAP. Continue with response options until termination criteria are achieved (refer **Section 15**).	IMT Planning Officer
	38. Provide regular updates (SITREP) all regulatory bodies (as required based upon **Table 3.3**) (Forms located in **Appendix C).**	IMT Leader
48hrs	39. Activate mid-term IAP preparing for mid-term incident management. This will include: • Development of an IAP for nominated operational period; • Document performance outcomes and standards against IAPs and feed performance data into subsequent IAPs; • Manage response records to ensure there is sufficient information for post-incident cost recovery and litigation; • Prepare personnel roster to manage IMT Coverage (as needed).	IMT Planning Officer

2.2 LEVEL 1 INCIDENT (VESSEL MARINE DIESEL OR CONTAMINANT SPILL)

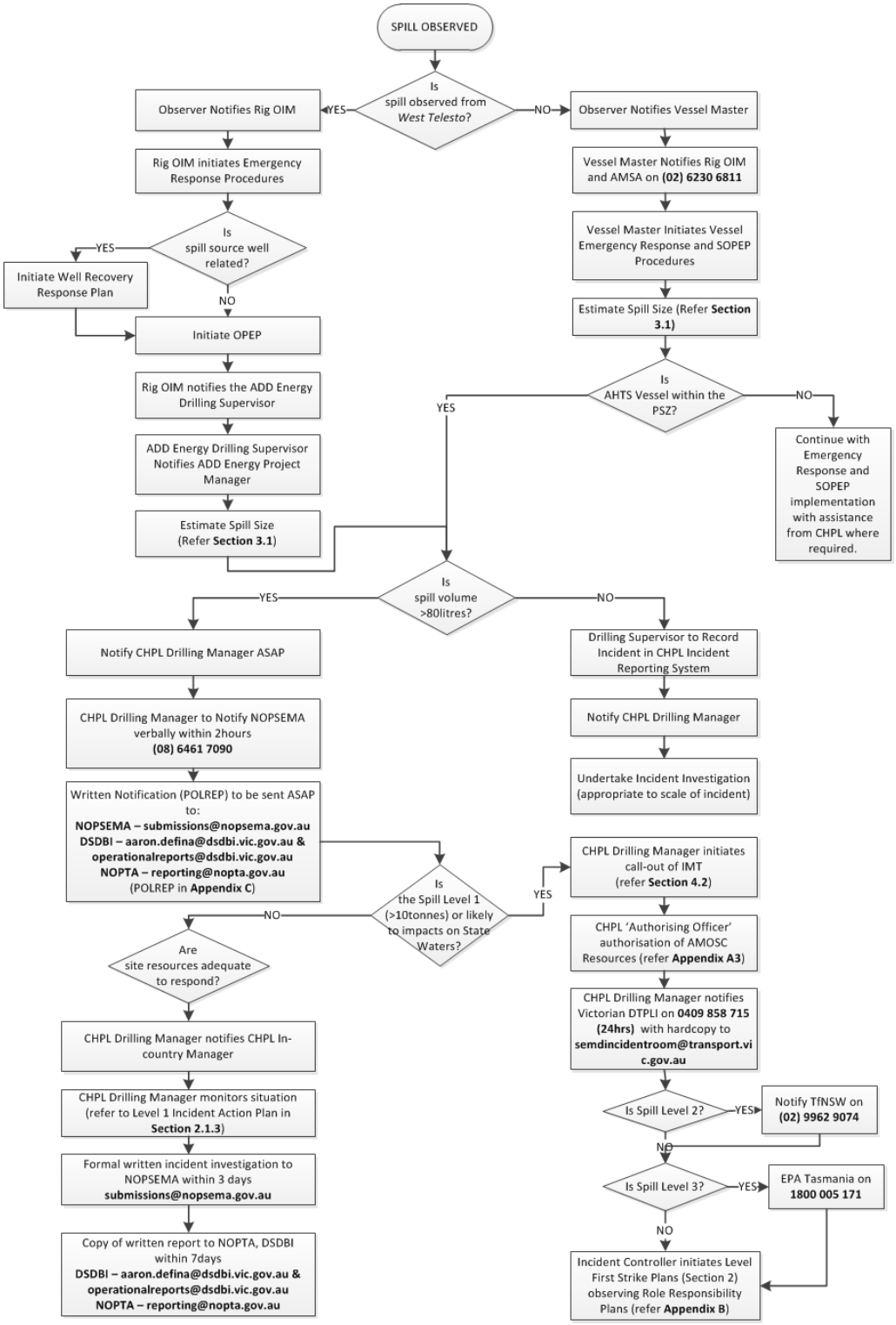
Table 2-3: First Strike Incident Management Team (IMT) Activation for Level 1 VesseL spill Incident

Timeframe	Action	Responsibility
Immediate	Manage the safety of personnel on-board and in operational area – activate evacuation plans if required.	Vessel Master
30 Minutes	Initiate Notification and Alert Procedures (Refer **Section 3**) (POLREP) ensuring: • CHPL notified of incident; • Regulatory authorities notified.	Exceed Supervisor
60 Minutes	Control the source – Activate *West Telesto*/AHTS Vessel SOPEP (links to this OPEP).	Vessel Master
90 Minutes	Obtain Situational Awareness – activate Monitor and Evaluate Response Option (Vessel Surveillance). Refer **Section 4** (Incident Assessment) and **Section 7** (Monitor and Evaluate)	Exceed Supervisor
4hrs	Continue Monitor and Evaluate Response Option until termination Criteria is met. Refer Section 16 (Termination Criteria)	Exceed Supervisor Vessel Master

3 NOTIFICATION AND ALERT PROCEDURES

Figure 3-1 provides a summary of the internal and external notifications associated with an oil spill during the Sea Lion and WSH Drilling Campaign.

Figure 3-1: Summary of Internal and External Notifications for Oil Spill



3.1 NOTIFICATION (INTERNAL)

It is mandatory that all spill events which originate from within the *WSH-3* PSZ are reported to CHPL regardless of the volume. All personnel observing spills shall verbally notify the Vessel Master.

The Vessel Master is then responsible for advising the Exceed Supervisor, who will inform the Exceed Project Manager. That position will then notify the CHPL Project Manager of the incident. It is the responsibility of the Exceed Supervisor to ensure a record of the incident is documented in accordance with the *CHPL Incident Reporting and Investigation Procedure* (refer HSE Standard Operation Procedure Manual AUS-HPB-60-HS-PR-3002).

Estimating the Spill Size: The initial size of a spill will be determined by the Exceed Supervisor or Vessel Master. This information will assist in determining the spill response level. The spill size estimation may be determined on the estimated amount of hydrocarbon released from a 'know' hydrocarbon inventory; an estimate of release rates from time of the commencement of the incident; or from an estimate of the appearance of oil on the sea surface based upon the likely thickness and type of oil.

Figure 3.2 provides a summary of the Bonn Agreement Oil Appearance Code for estimating thicknesses. **Table 3.1** provides an estimate of the volume of oil on the surface of the sea which corresponds to these thickness levels.

Figure 3-2: Bonn Agreement Oil Appearance Code

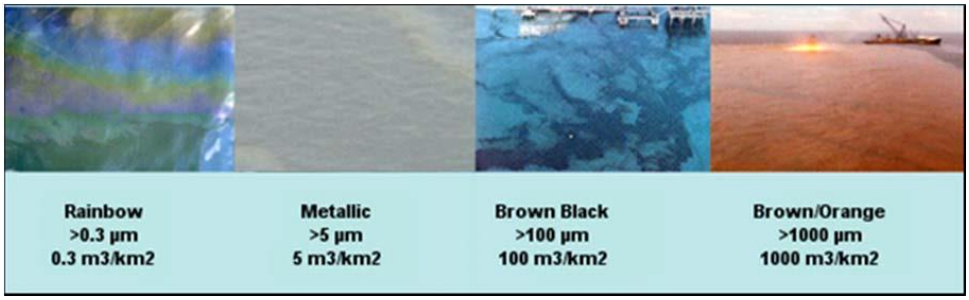


Table 3-1: Surface Volumes according to Bonn Agreement Appearance Codes

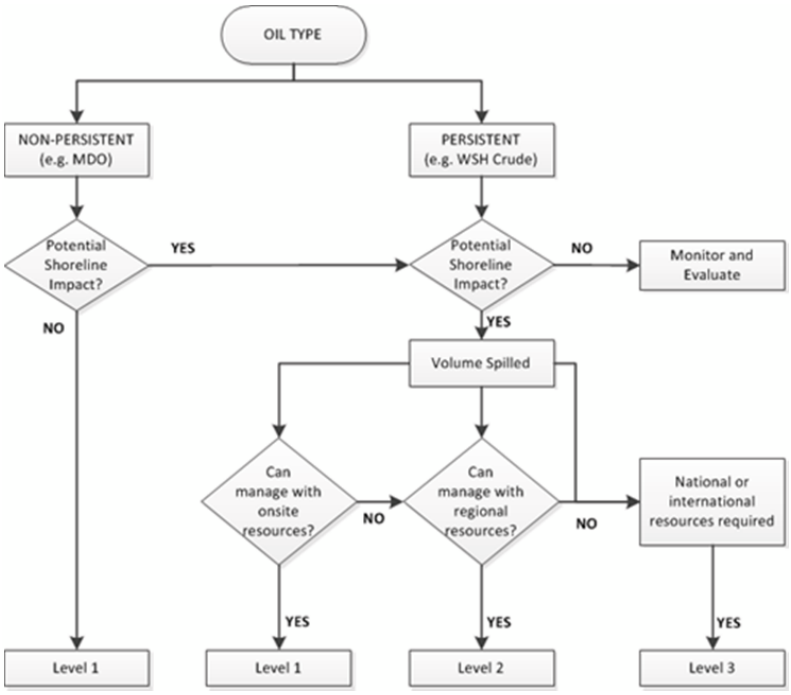
Code	Description/Appearance	Layer thickness interval (µm)	Litres per km^2
1	Sheen (silver/grey)	0.04-0.3	40-300
2	Rainbow	0.3-5.0	300-5,000
3	Metallic	5.0-50	5,000-50,000
4	Discontinuous true oil colour	50-200	50,000 – 200,000
5	Continuous true oil colour	>200	>200,000

Determining the Response Level: The response level determination depends on the size of the spill and whether the available equipment can manage the response or whether additional support and resources is needed. Guidance is provided in **Figure 3-3.**

For small spills (Level 1), the Level classification will be made by the ADD Energy Drilling Supervisor (ERG Leader) who will maintain responsibility for escalating/de-escalating and terminating a Level 1 response.

For larger spills (Level 2 or 3), the CHPL Project Manager will confirm the initial Level based on provided information against 'Level' criteria. On activation, the IMT Leader will confirm the Level response and will continue to maintain an ongoing assessment of the incident, including escalation and de-escalation considerations, and will ultimately terminate the incident response.

Figure 3-3: Guidelines on Determining the Response Level



Under NATPLAN arrangements, oil spills and their response requirements are categorized into three 'LEVELS' to convey the severity of the spill. These broad definitions and how they have been adapted from NATPLAN and referenced through this OPEP are summarized in **Table 1-2.**

Escalation/De-escalation of Response Levels: Assessment of response levels should consider factors which might lead to an escalation in the Level assessment as provided in **Table 1-3**.

It is foreseeable that the following situations may lead to an escalation of the response level within this OPEP:

- If the initial volume released was within the capability of intra-state (regional) resources, however during the response national or international resources were required, the Level response will escalate from Level 2 to Level 3;
- An escalation of safety hazard around the spill area with the potential for multiple fatalities will escalate any spill level to Level 3.

De-escalation triggers for a response level include:

- Hydrocarbon source is no longer active (i.e. spill contained); and
- A NEBA determines that response activities have no further net environmental benefit.

Information Required as Part of <u>all Notifications</u>:

- Was anyone Injured (details required)?
- Names of witnesses to the event and how the spill was detected.
- Brief description of the incident.
- What is the source of the spill (e.g. tank, hose, well, etc.).
- Location of the spill (i.e. Sea Lion, WSH)?
- What type of material has been discharged (i.e. WSH crude, diesel, hydraulic fluid, etc.)
- How much has been spilled (volume, area covered, etc.)?
- Has the source been stopped or contained?
- What are the weather conditions - ambient temperature, Relative humidity, Wind speed and direction, significant wave height, swell, current speed and direction?
- What is the spill movement (direction of travel, etc.)?
- What is the trajectory pathway (refer OSMP – *OM01 Oil Spill Movement Prediction*)?
- What are the weathering characteristics of the hydrocarbon?
- When was the spill detected (day, hour, minute)?
- What is the worst case scenario?

Internal Callout of the Incident Management Team (IMT): This OPEP is activated on the release on any hydrocarbon substance from the Vessel within the *WSH-3* PSZ.

For any spill which cannot be handled by on-site resources (i.e. Level 2^{+}), it is the responsibility of the CHPL Project Manager (or delegate), in consultation with the CHPL Project Manager (or delegate), to activate the Melbourne-based IMT.

The CHPL Project Manager will notify the Hibiscus Petroleum Chief Development Officer (CDO) (or delegate) of all spill events and the determined Level.

The Hibiscus CDO (or delegate) will determine the level of activation required for the Hibiscus Crisis Management Team in accordance with the *Hibiscus Petroleum Crisis Management Plan* (Doc No: HPB-100-HX-6180-0000001).

3.2 NOTIFICATION (EXTERNAL)

It is mandatory that all spill events which originate from within the *WSH-3* PSZ are reported to CHPL regardless of the volume. All personnel observing spills shall verbally notify the Vessel Master.

Reporting Responsibilities:

- For spills originating from the Vessel outside of the WSH-3 PSZ it is the responsibility of the Vessel Master to report the spill to the Statutory Agency (i.e. AMSA in Commonwealth waters).
- For spills originating from the Vessel within the WSH-3 PSZ it is the responsibility CHPL to notify all relevant statutory agencies except AMSA, which is the responsibility of the Vessel Master.

4 RESPONSE ORGANISATION

4.1 EMERGENCY RESPONSE ORGANISATION

This section describes the Drilling Campaign (VIC/P57 & VIC/L31) emergency response structure on a general basis addressing a Level 1, Level 2 and Level 3 spill. The structure is scalable depending upon the level of incident. Broadly, spill response is management by three teams:

- Hibiscus Petroleum Crisis Management Team (CMT) located in Kuala Lumpur with local representation in Melbourne;
- Incident Management Group (IMT) located in Melbourne; and
- Emergency Response Group (ERG) which is site-based.

The relationship between these three groups is provided in **Figure 4-1**.

4.2 ROLES AND RESPONSIBILITIES

4.2.1 INTERNAL RESOURCES

4.2.1.1 Hibiscus Petroleum Crisis Management Team (CMT)

The Hibiscus Petroleum CMT manages the wider implications of the spill and will provide support to the IMT in aspects such as media, Government or community liaison (Doc No: HPB-100-HX-6180-0000001). The CMT is activated by Hibiscus Petroleum's Managing Director (or delegate) and will operate from the Crisis Control Room (CCR) (Board Room) on the 2nd Floor, Syed Kechik Foundation Building, Kuala Lumpur, Malaysia to manage strategic issues described in **Table 4-2**.

4.2.1.2 Incident Management Team (IMT)

The role of the IMT is to support the site-based emergency response team for all levels of spill Decommissioning activities covered by this OPEP; and coordinate the interface with stakeholders, external agencies, and spill response support agencies.

Exceed acts as CHPL's IMT. The CMT Local Country Manager (CHPL Project Manager) provides the interface between the IMT and Hibiscus CMT and works closely with the CMT with respect to issues and events which may have a wider impact of CHPLs corporate reputation and share price. In the event of a Level 3 incident, CMT members may be mobilised to Melbourne for long-term assistance and backup to the Local Manager.

The IMT links into AMOSPLAN and NATPLAN through the relevant Liaison Officers seconded from both AMOSC and AMSA. The CHPL Project Manager has full financial authority to activate these resources.

The IMT structure reflects the Australian Inter-service Incident Management System (AIIMS) which is adopted by emergency services across Australia to manage incidents, allowing for seamless integration of activities and multiple agencies in an emergency event.

The section officers reporting to the IMT Leader will be determined as part of the initial IMT activation. As directed by the IMT leader, sections officers will mobilise additional resources to support the response. This will include the Environmental Coordinator and Waste Management Coordinator roles. The IMT will operate from the Incident Control Centre (ICC) (TBD). The oil spill roles and responsibilities of the IMT are summarised in **Table 4-3**

In the event of a Level 1 oil spill, the response is handled at the local level through first strike arrangement and the IMT is not activated. In a Level 2 or Level 3 response, surge capability to the IMT will be provided by industry and government organisations (refer to **Section 4.2.2**).

During a Level 2/3 incident requiring additional surge capacity resources, surge resources will be assessed by the IMT Leader (or delegate) for appropriate training and competency to perform the required tasks before taking up the roles and responsibilities of that position.

4.2.1.3 Emergency Response Group (ERG)

The ERG is responsible for the initial site-based response. They will initiate other emergency response groups if needed as per the VIC/RL17 Emergency Response Plan (ERP).

In the event of a hydrocarbon spill during the drilling activity, the Exceed Supervisor on-board the *Vessel* assumes the role of ERG Leader in the initial stages of a spill response and throughout a Level 1 spill. In a Level 2 or Level 3 incident the ERG Leader role is rotated to personnel holding relevant oil spill response training. In the event of a Level 3 incident, the ERG Leader (on- scene supervisor) may be divided into specific areas of Marine, Aerial or Shoreline supervisors. In this instance the personnel required to take up these positions will be selected from specialists in the field of discipline from AMOSC, AMOSC Core Group, NRT or NRST resources.

The ERG Team Leader is responsible for:

- Managing the incident in accordance with the Incident Action Plan (as appropriate) and OPEP;
- Single point of communication between the *Vessel*/site and the IMT;
- Coordinates forward operations response teams and activities at site.

The ERG structure is flexible and will reflect the scale of the response. The site ERG Leader will appoint staff to the ERG and allocate functions as required.

4.2.1.4 Minimum Competency Levels

All personnel nominated in this OPEP must carry minimum competencies and be trained in procedures to allow them to undertake their role in the implementation of this OPEP. This includes IMT personnel, personnel from site teams and contractor personnel involved in oil spill response activities on behalf of CHPL. Training is supported by regular drills and exercises to ensure that acquired competencies are maintained. CHPL resources supporting this OPEP maintain minimum training levels as detailed in **Table 4-1**

Team	Oil Spill Response Position	Minimum Training Level (or equivalent)
CMT	CHPL Project Manager	Oil Spill Command and Control (IMO3)
IMT	Incident Controller	Oil Spill Command and Control (IMO3)
	Operations Officer	Oil Spill Management Course (IMO2)
	Logistics Officer	Oil Spill Management Course (IMO2)
	Planning Officer	Oil Spill Management Course (IMO2)
	Finance & Admin Officer	Internal Training & Competency Assessment
	SSHE Coordinator	Internal Training & Competency Assessment
ERG	Team Leader	Oil Spill Response Operations (IMO1)
	Field Supervisors (Equipment Deployment)	Oil Spill Response Operations (IMO1)
	Aerial Observer	Aerial Surveillance Course (AMOSC or AMSA equivalent)
	Shoreline Response	Shoreline Assessment & Clean-up Course (AMOSC or AMSA equivalent)
	Labour Hire Workforce	Onsite Training & Induction

Figure 4-1: VIC/RL17 Oil Spill Response Structure

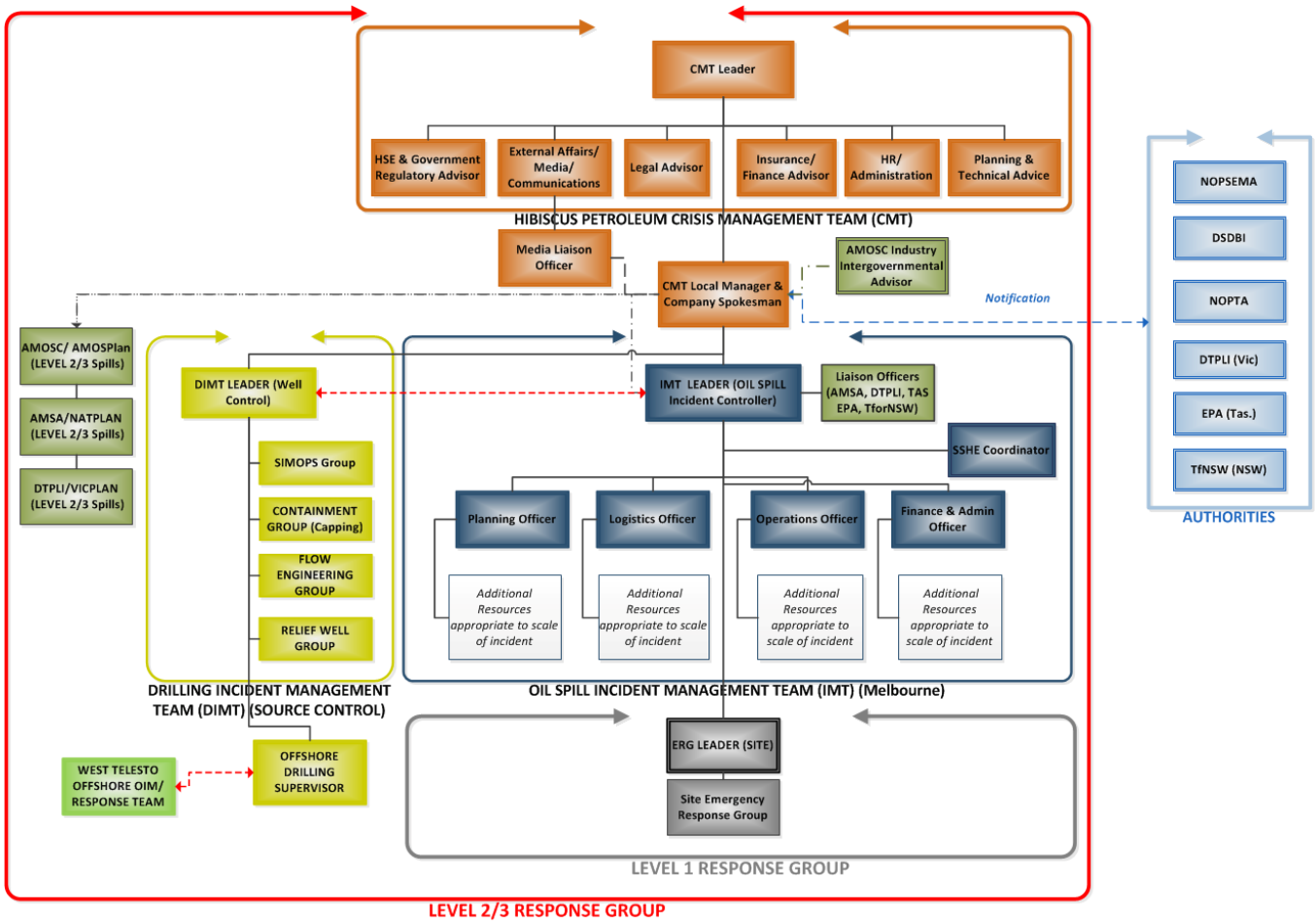


Table 4-2: CMT Strategic Roles

Issue	Role
Management of Human Resources	Ensure that rapid, effective and compassionate support is given to personnel involved. Ensure that rapid, effective and compassionate support is given to the relatives and colleagues involved in the incident. Ensure that personnel are not exposed to OHS/WHS hazards arising from the incident.
Management of the Environment	Ensure that rapid containment and clean-up is affected. Ensure immediate and long-term monitoring of affected/potentially affected areas is implemented. Cooperate and liaise with government and relevant regulatory agencies. Consider how environmental agencies/pressure groups might react and implement plans to manage their response. Long-term cleanup management.
Liability Issues	Assess incident details and agree on the interim basis upon which CHPL will respond. Clarify legal obligations and relationships to ensure that CHPL discharge all contracted agreements. Decide whether to recommend to IMT the immediate shutdown of operations pending incident investigation. Ensure accurate logging of responses.
Internal/External Investigation	Review composition of investigation team – consider use of independent third party. Gather facts and evidence (e.g. photographs, diagrams and witness statements) while fresh.
Management of Reputation	Consider the likely reactions from pressure groups and relevant regulatory authorities. Ensure company spokespeople are thoroughly briefed. Ensure that the target media and key personnel that media approach for comment are regularly briefed. Proactively brief politicians – preferably using CHPL personnel who have pre-existing relationships. Review incident impact on pre-existing relationships and implications for future projects. Monitor the response from media, other sources and employees. Consider the implications of current issues and prevailing public sentiment for management of the incident. Consider the impact of new information on each key stakeholder prior to its release.
Resumption of Operation	Consider the impact of shutdown of the facility – need for strategies to mitigate.
Claims for Compensation	Publicize guidelines as early as possible, especially on how to claim compensation without prejudicing ultimate liability. Commit resources to processing claims quickly. Prepare and issue a public statement on compensation matters.
Joint Venture Partners and Supplier Impacts	Ensure there is timely and adequate communication about incident impacts, likely outcomes and recovery plans. Consider the inability to accept forward ordered or contacted supplies and equipment in the short and/or long term.
Business Impacts	Review the impact of expenditure to repair damaged incident site on other Hibiscus projects. Review internal budgets and financing arrangements. Assess the likelihood of penalty or fine. Review insurance claim options – ensure compliance. Consider the impact on operations (e.g. impact on equipment and property, denial of use, consequential loss, etc.)

Issue	Role
CMT Response Operations	Ensure the CMT is supportively managing the strategic response – assisting and not hampering the IMTs primary tactical response. Ensure information flow between the IMT, CMT, CMT Leader, Support Groups and other key stakeholders is satisfactory. Ensure that unaffected parts of Hibiscus Operations are receiving management resources for continued unimpeded operation. Decide whether the CMT could deal with some issues more effectively by breaking into sub-groups. Review the requirement of the CMT to remain convened. Review the requirement for additional resources for the CMT.

Table 4-3: Summary of IMT Responsibilities

Issue	Role
First Person in Incident Control Centre (ICC) (Melbourne)	The first person to arrive in the ICC shall prepare it for use and make contact with the IMT. Establish contact with the incident facility and inform them that the ICC is in the process of manning and: • Give relevant IMT dedicated communication numbers (telephone); • Obtain the current situation report if possible and log this report using the IMT log sheets; and • Specifically ask the incident facility "*What are your immediate requirements from the IMT*?" and log the response. Brief IMT members if required as they arrive and specifically address the facility's requirements from the IMT.
Scribe	Obtain an incident briefing from the Incident Controller (IC) including subsequent actions taken. Maintain a log of events for personal decisions and actions. Ensure the tracking of all personnel involved in the incident is maintained throughout the incident. During the IC briefing sessions monitor whether the information discussed is consistent with the records and advise the IC of discrepancies.
IMT Leader	Controls and directs the Melbourne ICC in accordance with the OPEP Reports incident to CMT Local Manager who reports to the CMT Leader. The CMT leader determines whether the CMT should be activated and the level of activation required. Oversees the development of the Incident Action Plan (IAP) to meet the aims, objectives of the spill response by the Planning Officer and oversees the implementation of the emergency response offshore in accordance with the IAP. Ensures coordination with external agencies. Provides regular updates to statutory agencies throughout the incident. Liaises with Drilling Incident Management Team Leader (DIMT) on well capping status. Oversees implementation of mutual aid from AMOSPlan Companies. Ensures contact is made and maintained with the OIM, Vessel Master or ERG Team Leader to obtain an initial (& ongoing) situation reports and assess immediate/ongoing requirements. In the event of CMT activation agree the communication protocols between the IMT and CMT. Determines the SSHE support required and nominates the SSHE Coordinator (as required). Prepares and reviews strategic and tactical objectives with the IMT. Liaise with IMT and provide factual information.
Drilling Incident Management Team Leader	Controls and directs the Drilling IMT in accordance with the Well Recovery Response Plan Reports to the CMT Local Manager and liaises with the Oil Spill IMT Leader on source control activities and impacts on oil spill response activities. Responsible for regulatory approvals associated with the Well Recovery Operations.

Issue	Role
Media Liaison Officer (MLO)	Provides advice on all media and external affairs related issues in support of emergency with ongoing media releases and coordinates media contact. Obtains a briefing on the incident from the IC on the currents status of the emergency. Maintains contact with Company Spokesman and IC with regard to media and public liaison. Prepares and maintains a list of relevant media liaison contacts. Acts as a point of contact for the media and coordinates media liaison activities associated with the incident. Prepares media releases and for media conferences. In a major incident with large media interest ensure that all updated Media Holding Statements and Press Releases issued by the CMT are viewed by the IC and promptly issued to all relevant parties. Distributes the Media Holding Statements to all relevant parties (e.g. Employee and Relative Response Coordinator, Facility, Company representatives, Logistics Base, Phone Receptionists, etc.). Briefs receptionist on telephone arrangements and ensures all telephone numbers allocated to the MLO are disseminated and known.
CHPL Project Manager/ Company Spokesman (Australia)	AMOSC/RPS-APASA/AMSA MOU Authorizing Officer and Dispersant Manufacturer Contract Authorizer Requests AMOSPLAN mutual aid (as necessary) CMT Local Country Manager reports incident to the CMT Leader. The CMT leader determines whether the CMT should be activated and the level of activation required. Provides initial notification to statutory agencies (i.e. NOPSEMA, NOPTA and DSDBI) (thereafter status updates to be provide by the IMT Leader). Regular consultation with the CMT. Provides media comment within Australia.
AMOSC Industry Inter-governmental Advisor	Position represents the oil and gas industry and its best interests from a safety, technical and reputational point of view. Provide support to incident and CHPL on technical requirements of source control; As requested provide technical input into response decision making based on oil spill best industry practice Ensure the reputation of CHPL is appropriately represented to stakeholders Support the delivery of commercially correct information to media groups including the simplification of terminology Support media groups in the Company and government in understanding oil industry terminology, acronyms and theories
Planning Officer	Provides focal point for developing IAP for sign-off by the IC in support of the oil spill response. Ensure coordination and monitoring of the IAP with input from operations and logistics in consultation with the IC. Obtain incident briefing, including subsequent actions taken, and identify immediate planning requirements and agreed priorities with the IC in developing the IAP. Ensures that the appropriate NEBA assessments are carried out to support the IAP by the Environmental Coordinator. Liaise with operations for capturing operational needs and logistics, the tracking and deployment of resources required for the IAP and monitor the progress of the response against the IAP in terms of stated aims, objectives, strategies and tactics.

Issue	Role
Operations Officer	Obtain critical issues from the OIM/Vessel Master/Company Man and IMT and ensure they are reflected on whiteboards and other appropriate IMT communications. Ensure these are being actioned. Mobilizes support required by the IMT with other members as necessary in line with the OIM/Vessel Master/Company Man and IC requests. Coordinates operational aspects of the incident response. Liaise with contractors and third parties. Assist Planning Officer with preparation of the IAP. Implements IAP.
Logistics Officer	Acts as focal point for materials and logistics requirements and assists IMT Leader during response. Mobilizes equipment, suppliers and labor as defined by the IAP. Mobilizes helicopters and vessels as required. Provides transport for the IMT and ERG. Oversees implementation of the Waste Management Plan during a Level 2/3 oil spill response by the Waste Management Coordinator. Oversees Waste Management function into the Operations, Planning and Supply teams during a Level 2/3 oil spill response Organizes supply and transportation of contractors, materials and equipment required for emergency control as required by the IC. Arranges for the provision of catering and accommodation of IMT and field response personnel. Organizes CHPL and on-site security needs (as required). Ensures that communications between the field and IMT are operational and secure.
Finance & Administration Officer	Responsible for the provision of administrative and financial services. Provision of staff to operate facilities including phones, computers, radios Ensures sufficient cash-flow to meet immediate response needs Administers contracting services Collates expenditure records for cost recovery Collate timesheets, equipment usage records and implements a records management system Ensures effective operation of the Incident Control Centre (ICC) and administers security.
Waste Management Coordinator *(required for all Level 2/3 Incidents)*	Liaises with Logistics, Planning and Operations Officer to determine Waste Management requirements. Develops Waste Management Plan for Level 2/3 incidents.
Environmental Coordinator *(required for all Level 2/3 Incidents)*	Assist and advises IMT Leader as required during the response. Prepare a Net Environmental Benefits Assessment (NEBA) in conjunction with the DTPLI ESC of response options throughout the oil spill response. Collect and collate environmental and socio-economic resource information and prioritize environmental and socio-economic resources for protection and clean-up. Assist the Planning Officer in IAP preparation of an oil spill response, taking into account NEBA response activities and identified priority protection systems/areas/fauna and flora. Manage notifications to designated Environmental Authorities (e.g. EPA and DOE) and liaise as required. Advise IMT Leader/Project Manager of NGO and Designated Environmental Authority issues. Implement environmental monitoring requirements of oil spill response as defined in the OSMP.

Issue	Role
Security, Safety, Health & Environment (SSHE) Coordinator	Assists the IMT during the oil spill response in monitoring strategic and operational risk controls for the management of OHS/WHS issues (fatigue, dehydration, food safety, stress, mobile plant sea operations, etc.). Assists with the conduct of risk assessments for the incident and the monitoring of effectiveness of incident communication and information flow. Monitors risk controls (e.g. safety messages, medical plans) documented in IAP. Works collaboratively with Planning Officer and Situation Unit to monitor OHS/WHS information within the IAP. Provides SSHE services in support of the oil spill response. This includes Safety Advisers and Safety Procedures within the forward operations areas of a Level 3 spill incident. Provides specialist SSHE advice and general support to the IMT. This position also ensures, with the IC, that the processes and intent of the OPEP and ERP are met.
AMSA Liaison Officer (Level 3)	Facilitates effective and efficient coordination of National Plan resources.
DTPLI Emergency Management Liaison Officer (EMLO)	Facilitates effective and efficient coordination of VICPLAN resources.
Supply & Logistics Base	Provides supply and logistics services in support of an emergency/oil spill and liaises directly with the facility in support of the emergency when delegated by the IMT.
Telephone Reception/ Security	Handles communication during the emergency. Provide services on communication and office security in support of the emergency. Obtains an incident briefing including subsequent actions taken. Obtains the duty IMT roster.

4.2.1.5 IMT Resourcing Matrix/Surge Capability for Level 2/3 Spills

Manning for the IMT for Level 2/3 spills may require specialist skills for an extended period. **Table 4.4** provides details on location of resources filling the initial positions and where surge capacity will be sourced, identifying potential advisors to the IMT role.

Table 4-4: IMT Resourcing Matrix

Role	Initial Response Fill	Surge	Potential Advisors
Incident Controller	Exceed	Exceed, CHPL Project Manager	AMOSC Core Group, AMOSC, AMSA, DTPLI
Planning Officer	Exceed	Exceed, AMOSC Core Group, AMSA NRT	
Operations Officer	Exceed	Exceed, AMOSC Core Group, AMSA NRT	
Logistics Officer	Exceed	Exceed, AMOSC Core Group, AMSA NRT	
Finance & Administration Officer	Exceed	Hibiscus Petroleum, Exceed	
HSSE Coordinator	Exceed	Exceed, AMOSC Core	
Waste Management Coordinator	CHPL Waste Contractor	CHPL Waste Contractor, AMSA NRT	EPA
Environmental Coordinator	AMOSC Senior Technical Officer	AMSA NATPLAN Resources	DOT ESC, DEPI (Wildlife), DPIPWE (Wildlife), AAS (Wildlife)

In the event that a spill event requires resources which exceed the capacity of CHPL, additional personnel and resources will be obtained from:

- Industry organizations (e.g. AMOSC/OSRL) and industry mutual aid assistance;
- Government response organizations (e.g. AMSA or state authority); and
- Third party contract services and spot hire.

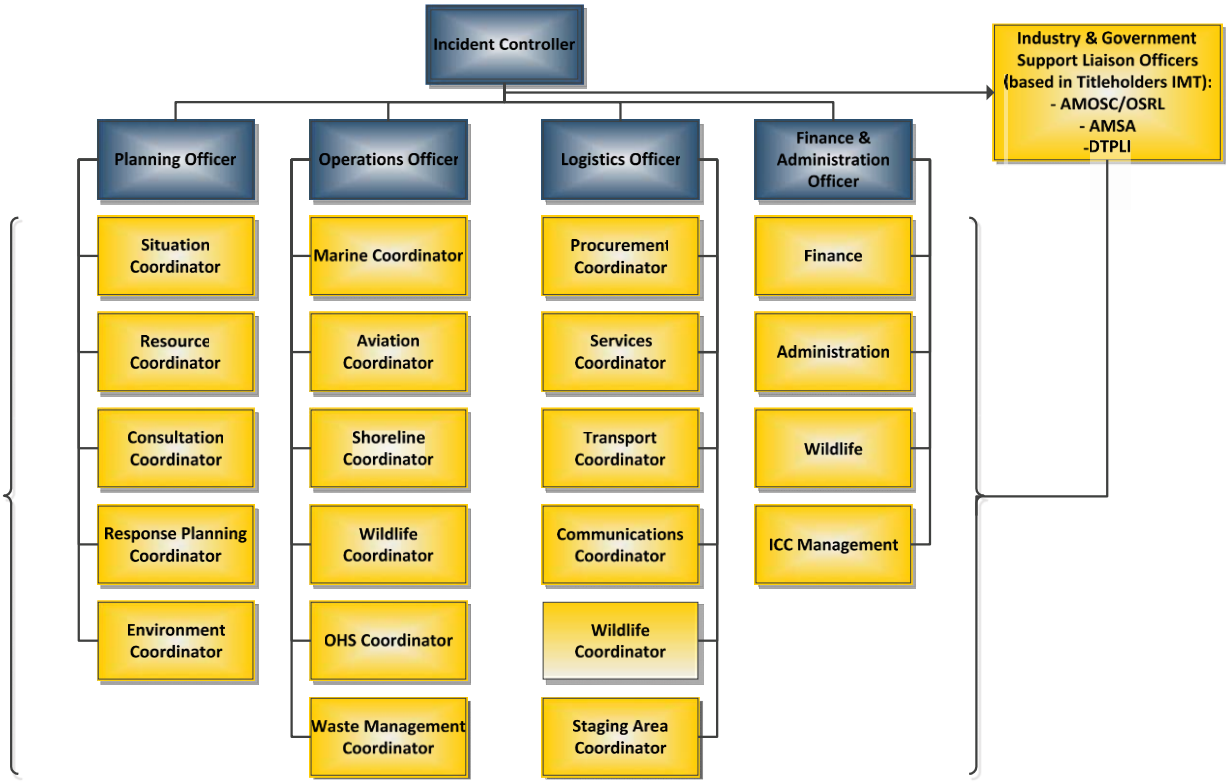
Personnel provided from these sources will fulfil organizational positions shown in Figure 4-2.

AMOSC, at the request of CHPL, will provide personnel and resources through AMOSPLAN. Personnel can be provided from this source to fulfil any of the organizational positions shown in Figure 4-2 except the role of Incident Controller. Each unit within the Planning, Operations, Logistics and Finance/Administration functional areas will be headed by a coordinator who report to their relevant IMT Officer. Additionally, under the AMSA MOU, NATPLAN resources are available to fulfil any of the positions listed on the IMT except the Incident Controller of IMT Leader.

The Planning Officer (or delegate) is responsible for identifying resources required for an incident and ensuring appropriate strategies are implemented to guarantee long-term resourcing over an incident (i.e. obtaining international resources or arranging training requirements).

Section 4.2.2 details how personnel and associated resources are obtained in the event of a Level 2 or Level 3 oil spill response.

Figure 4-2: Level 2 and Level 3 Support Organization (Surge Capability)



5 OIL SPILL RISK ASSESSMENT & SCENARIO PLANNING

5.1 SPILL SCENARIOS

Credible spill scenarios associated with the scope of this OPEP are described in **Section 5.7** of the West Seahorse-3/Wardie-1 Non-production Operations (VIC/RL17) Environment Plan. For these spill scenarios the prevention controls and a description of the release volume, duration and hydrocarbon type, the EP should be consulted.

Table 5-1 provides a summary of the identified credible oil spill scenarios which might be expected during the WSH-3 Decommissioning Campaign.

Table 5-1: Potential Oil Types and Spill Volumes from WSH-3 Decommissioning Campaign

Scenario	Incident	Source/Location	Oil Type	Volume Released (m^3)	Spill Duration	Release Depth (m)	Level
1	Vessel Tank Leak	West Seahorse	MDO	200[8]	6hours	0	2
2	Vessel Deck Drain Spill	West Seahorse	Lubricating & Hydraulic Oils	<1m^3	1hour	0	1
3	ROV Hydraulic Line Failure	West Seahorse	Hydraulic Oils	~250litres	1hr	24 39	1

5.2 OIL CHARACTERISTICS & FATE/WEATHERING DATA

5.2.1 Hydrocarbon Characteristics

Summarized below are the hydrocarbons expected to be present on- board the CHPL decom-related activities. The information is sourced from the Material Safety Data Sheets (refer **Appendix J**). The following information is provided:

- **Table 5-2** provides the physical characteristics of hydrocarbons present during CHP drilling activities; and
- **Table 5-3** provides hydrocarbon weathering characteristics and the expected influence on oil spill response options.

In the event of an actual spill, the fate and weathering behavior will be confirmed via field observations in accordance with the OSMP and OSTM.

Table 5-2: Summary of Hydrocarbon Types and Physical Properties

Hydrocarbon	Boiling Point Characteristics (°C)				Density (kg/m^3)	Viscosity	Oil Group	Pour Point (°C)	Comment
	Volatile (%)	Semi-Volatile (%)	Low Volatile (%)	Residual (%)					
	<180	180-265	265-380	>380					
Marine Diesel	6.0	34.6	54.4	5.0	829.1@ 25°C	4.0cP@ 25°C	III	-6	Flash Point ~60°C
Hydraulic Oils (Tellus)	-	-	-	-	0.875@ 15°C	32000cSt	III	-30	Initial Boiling Point ~280°C
Lubricating Oils	-	-	-	-	0.86-0.88	Variable 30 to 240cSt	III	Low	Flash Point >100°C Emulsifies
Persistence	*Non-Persistent*			*Persistent*					

Table 5-3: Oil Behavior and Characteristics

Property	Description of Hydrocarbon Behavior at Sea
Marine Diesel (Used for fuel in rig equipment, vessels and crane operations)	
Composition	Diesel is a mixture of volatile and persistent hydrocarbons with a low percentage of volatile hydrocarbons and a greater proportion having a moderate to low volatility. Combustible liquid.
Emulsification	Physical agitation by using propeller wash may assist in the evaporation and break up of spilled marine diesel however the potential exists to emulsify the hydrocarbon which can lead to decreased degradation rates. This response strategy is not recommended for MDO spills.
Weathering at Sea	Marine Diesel, although classified as persistent, will undergo rapid spreading and evaporative loss in high energy marine waters and slicks will quickly disperse/break up. *Containment and recovery operations for marine diesel in open waters are expected to be limited in effectiveness as the material spreads rapidly into thin layers which are not in recoverable thicknesses. Due to the rapid evaporation and dispersion of marine diesel, spilled material is preferentially monitored and allowed to naturally weather if no protection priorities are at risk.* During evaporative weathering, low molecular weight aliphatic and aromatic hydrocarbons are lost from the oil, leaving higher concentrations of less volatile, higher molecular weight hydrocarbons. The heavier components have a strong tendency to entrain in the upper water column as oil droplets in the presence of wind/waves but can re-float to the surface if energies abate (APASA, 2014). Under a 15°C water temperature, 15knot MDO scenario it would be expected that after 1 day evaporation accounts for approximately 10% of the spill, 20% of the spill volume has been dispersed in the water column and 70% remains on the surface. After 5days surface oil is eliminated, 62% has been dispersed within the water column and 38% has evaporated (APASA, 2014).
Aromatic Hydrocarbon Content	Diesel is a light persistent petroleum distillate (predominantly C_{12}-C_{14} hydrocarbon compounds) and has low concentrations of aromatic (soluble toxic) compounds (<3 mol%) (NOAA, 2013) with the majority of aromatics lying in the boiling point range <264°C (hence volatile and readily weathered).
Shoreline Behavior	MDO is not sticky or viscous compared with black oils (i.e. some crude oils and HFO) it tends to penetrate porous sediments (sands) quickly, but also tends to be washed off quickly by waves and tidal flushing. MDO is readily and completely degraded by naturally occurring microbes within 1-2months (NOAA, 2013b).
Hydraulic Oils	
Composition	Hydraulic oils are typically highly refined light to medium mineral oils, liquid under most environmental conditions and will spread on the sea surface. Spill, due to small volumes which could be spilled are expected to result in rapid disassociation.
Emulsification	Poorly soluble in water
Weathering at Sea	Oils are a mixture of non-volatile components with limited evaporation potential.
Aromatic Hydrocarbon Content	Highly refined mineral oil. Low toxicity.
Shoreline Behavior	*Not Applicable to activity*
Lubricating Oils	
Composition	Variable.
Emulsification	Oils may emulsify at sea leading to increased slick volumes.
Weathering at Sea	These oils have a moderate spreading and evaporation rate. Persistent at sea.
Aromatic Hydrocarbon Content	Lubricating oils typically have low aromatic content[10]
Shoreline Behavior	*Not Applicable to activity*

5.2.2 Definition of Zone of Potential Impact (ZPI)/Zone of Potential Contact (ZPC)

The following criteria have been used to determine hydrocarbon concentration thresholds whereby environmental impacts from hydrocarbon spills may be expected.

Surface Oiling

The following surface thresholds have been defined for the purpose of impact and contact:

- **Environmental/Ecological Impact Threshold**: 10µm (g/m^2). *This threshold relates to the threshold thickness of oil that could be harmful to intersecting wildlife* (APASA, 2013);
- **Environmental Contact Threshold**: 0.5µm (g/m^2). This threshold relates to the minimum visual threshold observable which may invoke a community reaction. It is noted that clean- up and containment operations are not effective at these surface thresholds.

Dissolved Aromatics

Based upon a review of global data for species impacts (115 fish, 129 crustaceans, 34 invertebrate species including sensitive lifecycle stages) associated with dissolved phase hydrocarbons (aromatics), French-McCay (2002, 2003) has established the following LC_{50} (96hr) values as reflected in **Table 5-4**. A minimum exposure threshold of 6ppb over 96-hours or equivalent has been used to assess in-water low exposure zones in water temperatures of 25°C. Average 96hr LC_{50} of 50ppb and 400ppb, assessed at water temperature of 25°C, are typically used to define an acute threshold to 5% (moderate exposure) and 50% (high exposure) of biota respectively.

Table 5-4: Threshold Impact Levels for Dissolved Aromatic Hydrocarbons

Trigger Value for dissolved aromatic concentration for LC_{50} (96hrs) (ppb)	Equivalent dosage of dissolved aromatics over 96hrs (ppb.hrs)	Range of sensitive species potentially impacted from acute exposure	Level of Exposure
6	576	Very Sensitive Species (99^{th} percentile)	Low
50	4,800	Average Sensitive Species (95^{th} percentile)	Moderate
400	38,400	Tolerant Sensitive Species (50^{th} percentile)	High

Additionally, for some hydrocarbons (i.e. MDO) the aromatic content is low and those components are very volatile. Generally, for components <180°C most aromatic components evaporate within a few hours and for components in the boiling range 180-260°C evaporation/ dissolution will occur in one day (APASA, 2014). Accordingly, modelling results identifies that for these types of hydrocarbons (i.e. MDO) aromatics do not persist in the marine environment for the necessary exposure period (96hrs) to trigger the lowest thresholds.

Dispersed (Entrained) Hydrocarbons

Dispersed phase hydrocarbon has utilised the following instantaneous thresholds derived from OSPAR Predicted No Effects Concentration (PNEC) for dispersed oil for chronic hydrocarbon exposure and converted to appropriate acute exposure levels:

- LC_{50} (99% species protection): 700µg/l (ppb) (low);
- LC_{50} (95% species protection): 7,050ppb (medium); and
- LC_{50} (50% species protection): 80,400ppb (high).

OSPAR (2012) has published accepted PNEC for 'dispersed oil' of 70.5ppb (95% species protection) and 804ppb (50% species protection) in Produced Formation Water representative of entrained oils which have been 'water-washed' (i.e. oils which have had significant portions of soluble toxics removed through evaporation/

dispersion. These PNEC levels represent acceptable long term chronic exposure levels from continuous point source discharges in the North Sea, one of the most concentrated areas in the world for oil and gas production and have been based upon biomarker testing specifically looking at DNA damage and oxidative stress (Smit et al, 2009) for a variety of oils.

Table 5-5 provides threshold values[13] for entrained hydrocarbons over 48hrs.

Table 5-5: Threshold Impact Levels for Dispersed (Entrained) Hydrocarbons

Trigger Value for entrained oil concentrations LC_{50} (48hrs) (ppb)	Equivalent dosage of dissolved aromatics over 96hrs (ppb.hrs)	Range of sensitive species potentially impacted from acute exposure	Level of Exposure
700	33,600	Very Sensitive Species (99th percentile)	Low
7,050	338,400	Average Sensitive Species (95th percentile)	Moderate
80,400	3,895,200	Tolerant Sensitive Species (50th percentile)	High

Shoreline Accumulation Thresholds of Hydrocarbon

French-McCay (2009) in a review of literature associated with oiling of inter-tidal habitats (wetland, rocky shore, gravel and sand beach, and mudflat) identified the following threshold observations for shoreline impacts:

- Marsh/Mangroves species: Oil thicknesses of more than 1mm (1000g/m^2) during the growing season is expected to impact these species; and
- Inter-tidal Invertebrates: Oil thicknesses of 0.1mm (100g/m^2) for benthic epi-faunal invertebrates on hard substrates (rocky, artificial/man-made, etc.) and sediments (mud, silt, sand or gravel).

These threshold levels have been nominated as trigger levels for possible impacts to these species.

5.2.3 Oil Spill Trajectory Modelling (OSTM) Results

Modelling (APASA, 2014) has been undertaken for the following maximum credible oil spill scenarios associated with CHPLs decommissioning campaign to establish the maximum ZPI without oil spill response intervention:

- **Marine Diesel** Spill: WSH Location: 200m^3 over 6 hours.

Smaller volumes spills have not been undertaken as they are small in volume and consist of hydrocarbons which readily disperse and evaporate and will have a lesser footprint than those modelled.

Figure 5-1 provides a summary diagram of both the indicative oil spill response 'operational' and 'monitoring' zones for the WSH Decommissioning MDO scenario.

"Operational areas" are defined as areas which trigger 'impact' levels and where active spill response activities are viable.

"Monitoring areas" are those areas which lie in the 'contact' area (i.e. visible sheens) which may require operational and scientific monitoring activities dependent on the spill event.

It should be noted that the ZPI reflected in these plots is a compilation of 200 individual trajectory simulations, each commencing at a different time and under randomised wind and current conditions. The plot does not represent the ZPI from a single worst-case oil spill.

Table 5-6 provides a summary of the sensitive receptors within the response zone and the following:

- Probability of, and shortest time to contact, for impact levels of surface oil (10µm) and visible oil (0.5µm);
- Probability of, and shortest time to contact for shoreline residues >100g/m^2.

Figure 5-1: WSH Decommissioning MDO Spill Scenario (Indicative Operational (ZPI) and Monitoring (ZPC) Areas)

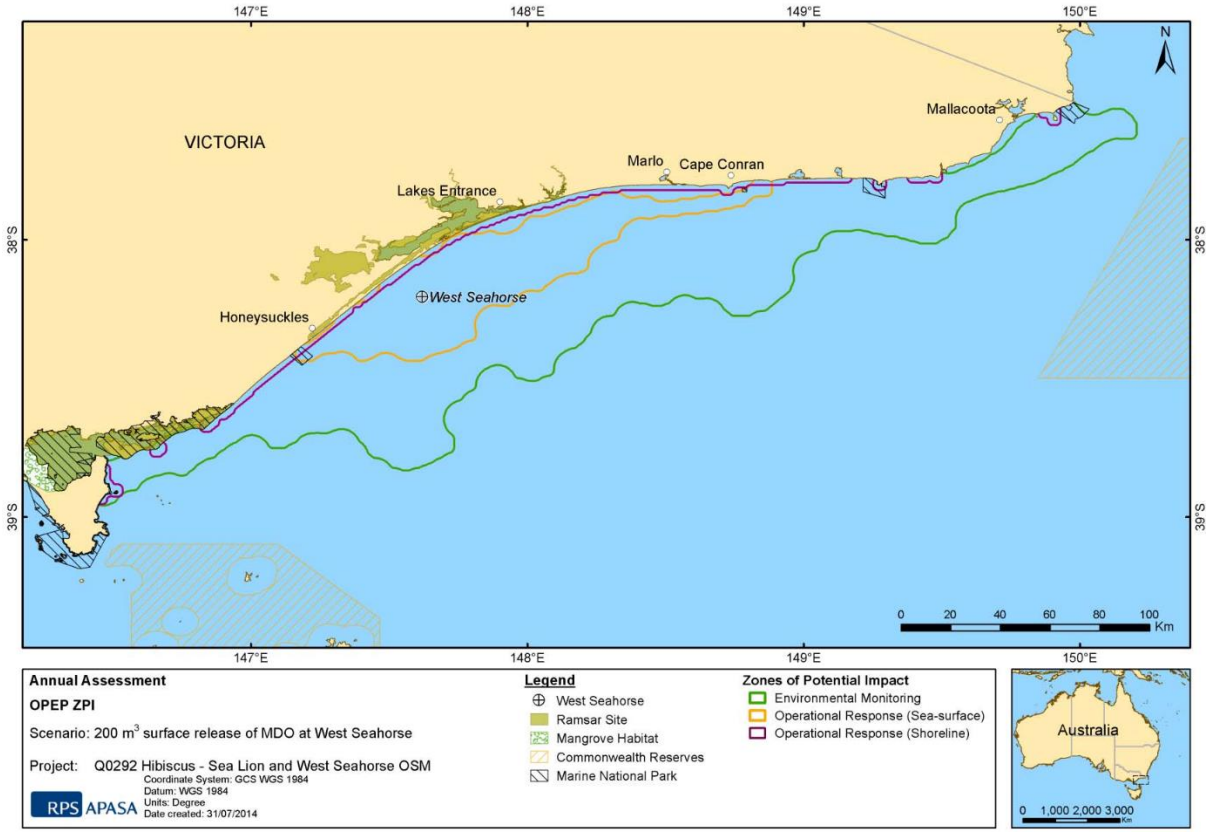


Table 5-6: Summary of Sensitive Receptors and Time to Oil Spill Impact (APASA, 2014)

Sensitive Receptor	WSH – MDO Spill						
	Visible (0.5µm)		Impact (10µm)		Shoreline Impact (>100g/m^2)		
	Time (Hours)	Probability (%)	Time (Hours)	Probability (%)	Time (Hours)	Probability (%)	Maximum Oil Volume (m^3)
Beagle CMR	NA	NA	NA	NA	NA	NA	NA
East Gippsland CMR	NA	NA	NA	NA	NA	NA	NA
Flinders Island (TAS)	NA	NA	NA	NA	NA	NA	NA
Kent Group NP (TAS)	NA	NA	NA	NA	NA	NA	NA
Hogan Island (TAS)	NA	NA	NA	NA	NA	NA	NA

Curtis Group (TAS)	NA	NA	NA	NA	NA	NA	NA
Seal Islands (VIC)	NA	NA	NA	NA	NA	NA	NA
Wilsons Prom NP (VIC)	55	<5	NA	NA	61	1	<0.1
Corner Inlet/Noormunga Estuary	55	<5	NA	NA	NA	NA	NA
Ninety Mile Beach MNP	40	<10	NA	NA	44	1	-
Merriman Creek Estuary	40	<5	NA	NA	44	1	-
Gippsland Lakes CP	12	<25	~24	<5	14	5	<0.1
Lakes Entrance (Entrance to Lakes NP)	24	<5	NA	NA	45	5	-
Lake Tyers Beach Estuary	48	<5	NA	NA	45	5	-
Snowy River Estuary	48	<5	NA	NA	45	5	-
Cape Conran CP	37	<5	~48	<5	45	5	<0.1
Beware Reef MS	37	<5	NA	NA	45	5	-
Croajingalong NP	65	<5	NA	NA	74	1	<0.1
Tamboon Inlet Estuary	65	<5	NA	NA	74	1	-
Point Hicks MNP	65	<5	NA	NA	74	1	-
The Skerries	NA	NA	NA	NA	NA	NA	NA
Wingan Inlet Estuary	NA	NA	NA	NA	NA	NA	NA
Beckta River Estuary	NA	NA	NA	NA	NA	NA	NA
Mallacoota Inlet Estuary	NA	NA	NA	NA	NA	NA	NA
Tullaberga Island	~120	<5	NA	NA	NA	NA	NA
Gabo Island	~120	<5	NA	NA	NA	NA	NA
Cape Howe MNP	NA	NA	NA	NA	NA	NA	NA
Nadgee Lake Estuary (NSW) (C)	NA	NA	NA	NA	NA	NA	NA
Wonbyn Lake Estuary (NSW)	NA	NA	NA	NA	NA	NA	NA
Saltwater Creek Estuary (NSW)	NA	NA	NA	NA	NA	NA	NA
Woodburn Creek Estuary (NSW)	NA	NA	NA	NA	NA	NA	NA
South Coast (NSW) (Includes all estuary systems to Tuross Heads)	NA	NA	NA	NA	NA	NA	NA
Bateman's Bay (NSW)	NA	NA	NA	NA	NA	NA	NA
Montague Island (NSW)	NA	NA	NA	NA	NA	NA	NA
Jervis Bay (NSW)	NA	NA	NA	NA	NA	NA	NA

5.3 ENVIRONMENTAL SENSITIVITIES

Environmental sensitivities (including heritage and socio-economic values) within the predicted ZPI are described in the Sea Lion and WSH Drilling Environment Plan (Section 3) (Doc No: SLN-CHP-60-RG- RA-0003). Additionally, environmental sensitivities are identified on the Oil Spill Response Atlas (OSRA) for the Gippsland coastline, southern NSW coastline and for the Bass Strait Islands (including Tasmanian Islands such as Flinders Island) which is provided in **Appendix H**.

General characteristics of the region are described below:

Gippsland Basin: The seabed in the region consists of sediment flats inter-dispersed with small patches of reef, bedrock and consolidated sediment. Sandy seabed is only occasionally broken by low ribbons of reef (previous shorelines during ice age) which support red seaweeds and encrusting animals that can survive the sandy environment.

Gippsland Coast**:** The shoreline of the Gippsland coast is bounded by a considerable variety of ecologies:

- *Ocean Shoreline*: The Bass Strait ocean shoreline from Wilsons Promontory in the West to Cape Howe in the east, including the offshore islands at the extremities of the region consists mainly of steep rock, sand beaches and rock outcrops. The shoreline is generally one of high sea activity due to the prevailing weather conditions. These areas have varying tidal differences from east to west.
- *Inland Water Shoreline***:** The shoreline of the inland waters in the region which includes Corner Inlet (significant tidal range), the Gippsland Lakes and Mallacoota Inlet (minimal tidal range) are generally of differing ecological type to the ocean shoreline. The shoreline adjacent to these waters consists of sandy beach, salt march mangrove or mudflats. These shores are generally protected from all but the worst weather conditions and therefore have very low sea activity.

  The coastline has a considerable number of inlets and river mouths which are generally open to the sea and subject to tidal flow. However from time to time, one or more of these openings may be closed as a result of natural sand movement. These openings are generally cut through the beach and have beach and sandy shorelines for varying distances on the landward side of the entrance. The openings are subject to fair to strong tidal flow and the strength of the flow will vary from one opening to another as will the distance inland that the tidal flow is discernible.
- *Offshore Islands*: The coastline of the region is generally free of offshore islands, however at the eastern end of the region two relatively large islands – Gabo and Tullaberga – lie close offshore. Further west, The Skerries lie close offshore from the entrance to Wingan Inlet. Beware Reef, slightly east of Cape Conran is awash at all times.

  No further islands lie off the coast of the region between the above and Seal Islands which are a group of some five islands, including Cliffy Island, lying off the eastern shore of Wilsons Promontory. All islands off the coast of the region provide habitat for seal colonies.

5.4 PRE IMPACT ASSESSMENT PRIORITIES

The hierarchy of protection priorities adopted within this OPEP follows:

- Human Health and Safety;
- Habitat and cultural resource protection;
- Rare and/or endangered flora and fauna protection;
- Commercial resources protection; and
- Amenity protection.

Note that environmental protection priorities are always prioritized after human health and safety objectives have been met.

5.5 APPLICABLE RESPONSE OPTIONS

The marine, aerial and shoreline response options which may be deployed in the event of a spill during the decommissioning campaign depends on the spill type, location of the spill event, environmental conditions and protection priorities within the actual ZPI of the spill area.

The IMT will review the response options identified in the OPEP and apply the following decision diagram to assess which response options would be appropriate for the actual spill circumstances (i.e. hydrocarbon type, volume and location).

The CHPL Oil Spill Response decision making process is provided in **Figure 5-5** and should be read in conjunction with **Section 2** (First Strike Response). It should be noted that a significant oil spill from the Sea Lion and West Seahorse Drilling Campaign may incorporate a number of oil spill response options as identified in the following sections of this OPEP depending upon the environmental sensitivities at risk:

- Source Control (refer **Section 6**);
- Monitoring, Surveillance and Evaluation (refer **Section 7**);
- Dispersant Application (refer **Section 8**);
- Containment and Recovery (refer **Section 9**);
- Protection and Deflection Booming (refer **Section 10**);
- Shoreline Cleanup (refer **Section 11**);
- Oiled Wildlife Response (refer **Section 12**);
- Waste Management (Refer **Section 13**); and
- Occupational Health & Safety/Workplace Health & Safety (OHS/WHS) Management (refer **Section 14**).

Note that source control, dispersant application, contain and recover, protection and deflection booming, shoreline cleanup and oiled wildlife management, as technical controls, will physically reduce the oil spill consequence. Administrative controls such as monitor and evaluate and waste management improved the effectiveness of technical controls.

5.5.1 5.5.1 Net Environmental Benefits Assessment (NEBA)

The purpose of a Net Environmental Benefits Assessment (NEBA) is to evaluate the environmental costs and benefits of the proposed oil spill response strategies against a monitor and evaluate response. Response strategies for which the environmental benefits are less than the environmental costs (i.e. response limitations) will not be adopted. A preparedness NEBA has been completed to assist with a NEBA during a real-time spill event. The following methodology has been adopted to complete the NEBA for Marine Diesel (**Table 5-7**).

- Key ecological values, habitats, ecosystem and socio-economic sensitivities are identified within the ZPI and shoreline impact areas;

- Each of the identified sensitivities are given a priority ranking of high, medium or low depending on the likelihood and severity of the potential impact of the hydrocarbon and whether the sensitivity is protected under the EPBC Act.

- For each sensitivity response options are evaluated to determine whether they are potentially viable (i.e. will result in an overall net environmental benefit to the) and those that are not preferred because they will have an additional negative impact on the sensitivity.

During a spill event from the WSH Decommissioning Campaign, based upon real-time trajectory information, NEBAs will be undertaken by the IMT utilizing subject matter experts (i.e. AMOSC Environmental Adviser) and the DOT Environment & Scientific Coordinator (ESC) to fully assess the key sensitivities lying within oil spill trajectory pathway, the limitations and benefits of the response options in the context of the affected environment and environmental conditions, and determine the response options which will maximize environmental benefits.

Utilization of the preparedness NEBA:

- Identifies sensitivities in the spill area at the particular time of year;
- Assists in prioritizing and allocating resources to sensitivities with higher protection priorities; and
- Assists in determining appropriate response strategies with support of real time met-ocean conditions, oil spill tracking and the availability of resources.

Note that the NEBA priorities environmental sensitivities and assesses the individual net effect of each response option on it. The process will enable trade-off effects to be weighed up and provides the ability to make an informed decision. Invariably there will be conflicting outcomes for a particular response options. In that case the sensitivity with the higher protection priority becomes the preferred response option. NEBA is a decision making process which will result in a trade-off of priorities and response strategies, however the final outcome will be a response of net environmental benefit.

The NEBA will be continually used to update IAPs as the spill progresses. An *operational* spill NEBA, once complete, will provide:

- The primary spill response strategies to be deployed immediately and secondary strategies to be held in readiness in the event that a future NEBA recommends their deployment (e.g. change in weather conditions);
- A priority list of sensitive locations where resource allocation should be deployed given time constraints; and
- Identify operational monitoring required to evaluate the effectiveness of the oil spill response option.

It should be noted that this *preparedness* NEBA relates to specific environmental sensitivity types present in the ZPI – not to particular locations where these sensitivities are located.

The spill specific operational NEBA will be documented in the response Incident Action Plan (IAP).

The methodology and personnel/information resources required for undertaking an operational NEBA is provided in **Appendix H**. *An operational NEBA should be undertaken as soon as possible but within six hours if the initial spill event. NEBA assessments for all activity affecting or in State waters and on coastlines must be undertaken with State IMT representatives*

Table 5-7: Preparedness NEBA – Offshore Response Options for Marine Diesel

Sensitivity	Protection Priority	Seasonal Presence in the Zone of Potential Impact												Response Option					
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Monitor & Evaluate	Chemically Disperse	Contain & Recover	Protect & Deflect	Oiled Wildlife Response	Shoreline Cleanup
Ecological – Marine Species																			
Plankton														↑R	NA	NA	NA	NA	NA
Benthic Species (invertebrates)														↑R	NA	NA	NA	NA	NA
Fish														↑R	NA	NA	NA	NA	NA
Sharks (General)														↑R	NA	NA	NA	NA	NA
- White Shark*	Threatened	A	A	A	A	A							A	↑R	NA	NA	NA	NA	NA
Mammals: Whales/Dolphins (Gen)														↑R	NA	NA	NA	↑C	NA
- Blue Whale*	Threatened													↑R	NA	NA	NA	↑C	NA
- Southern Right Whale*	Threatened													↑R	NA	NA	NA	↑C	NA
- Humpback Whale*	Threatened													↑R	NA	NA	NA	↑C	NA
Mammals: Fur Seals														↑R	NA	NA	NA	↑C	NA
Reptiles: Turtles*	Threatened													↑R	NA	NA	NA	↑C	NA
Migratory Sea Birds*	Threatened													↑R	NA	NA	NA	↑R	NA
Shoreline Species (Sub-littoral Zone)																			
Australian Fur Seal Colonies											B	B	B	↑R	NA	NA	NA	↑C	↑R
New Zealand Fur Seal Colonies		B										B	B	↑R	NA	NA	NA	↑C	↑R
Little Penguin Colonies		B	M	N	M					B	B	B	B	↑R	NA	NA	NA	↑R	↑R
Nesting Shorebirds (Fairy Tern)*	Threatened	B	B								B	B	B	↑R	NA	NA	NA	↑R	↑R
Nesting Shorebirds (Hooded Plover)*	Threatened	B	B	B					B	B	B	B	B	↑R	NA	NA	NA	↑R	↑R
Roosting Shorebirds*	Threatened													↑R	NA	NA	NA	↑R	↑R
Habitats/Ecosystems																			
Exposed Rocky Shoreline/Headland														↑R	NA	NA	NA	NA	NA
Exposed Solid Man-made Structures														↑R	NA	NA	NA	NA	NA
Sub-tidal Rocky Reef														↑R	NA	NA	NA	NA	NA
Inter-tidal Rocky Platforms														↑R	NA	NA	NA	NA	↑C
Sand Beaches														↑R	NA	NA	NA	NA	↑R
Sheltered Inter-tidal Flats*														↑R	NA	NA	NA	NA	↑C
Sea-grass (Inter-tidal & Sub-tidal)*														↑R	NA	NA	NA	NA	↑C
Salt Marshes*	Threatened	S								S	S	S	S	↑R	NA	NA	NA	NA	↑C
Mangroves*														↑R	NA	NA	NA	NA	↑C
Socio-Economic																			
Protected Shipwrecks (Coastal)														↑R	NA	NA	NA	NA	NA
Protected Shipwrecks (Marine)														↑R	NA	NA	NA	NA	NA
Commercial Fisheries (F)/Aquaculture (A)														↑R	NA	NA	NA	NA	NA
Tourism (Beaches Visual, Primary Contact (swimming, snorkeling, diving), Secondary Contact (Sailing Fishing)		T	T	T	T								T	↑R	NA	NA	NA	NA	↑C
Oil and Gas Operations														↑R	NA	NA	NA	NA	NA
Commercial Shipping														↑R	NA	NA	NA	NA	NA
Aboriginal Heritage														↑R	NA	NA	NA	NA	↑C
Recreational Fishing														↑R	NA	NA	NA	NA	NA

Legend:

S: Period of greater susceptibility of temperate species to oiling impacts **B:** Breeding period **H**: Haul-out Area **M:** Moulting Period (reduced numbers)

A: Aggregation Period for Juveniles **T:** Peak Tourism Period

↑ Increased Benefits ↓Decreased Benefits C: Consider R: Recommended NA: Not Applicable

*Denotes a species which is a threatened, endangered or migratory species under Commonwealth or State Legislation or high environmental sensitivity habitat.

Species is present in the are

5.5.2 Figure 3-1: Summary of Applicable Response Actions

Available Response Options:

A summary of the available response options according to spill type and level is provided in **Table 5-8.** As indicated "monitor and evaluate" is applicable to all oil spill levels and types. Note that for the WSH-3 Decommissioning activities, the well has been plugged and meets the requirements for an abandoned well, and as such there is no credible risk of a crude oil spill from the well.

For all spills, the IC will need to determine vessel and operational exclusion requirements around the spill zone. Information relating to spill exclusion is provided in **Section 7.**

Table 5-8: Spill Response Options by Oil Type and Spill Level

Strategy	Upper Credible Scenarios			
	Level 1	Level 2	Level 2	Level 3
	Locally Managed	Requires Intra-State Resources	Requires Intra-State Resources	Requires National Resources
	Diesel/ Hydraulic Fluids /Crude / Crude: Water Mix	Diesel	WSH Crude	WSH Crude
Monitor & Evaluate	Yes	Yes	Yes	Yes
Aerial Dispersant	No	No	Yes	Yes
Vessel Dispersant	No	No	Yes	Yes
Offshore Contain & Recover	No	No	Yes	Yes
Protection & Deflection	No	No	Yes	Yes
Shoreline Cleanup	No	Yes	Yes	Yes
Wildlife Response	No	Yes	Yes	Yes

State Authorities are in control of response activity within State waters. Any proposed response options must be in accordance with direction provided by those State Authorities.

Response options available for the Decommissioning Campaign (VIC/RL17) are as follows:

1. **Source Control**: Source control is addressed in the Sea Lion and West Seahorse Drilling Campaign Environment Plan (refer Section 5.8.1) and the Well Recovery Response Plan (Doc No: SLN-CHP-60-DR-PR-0001 (refer Section 6).
2. **Monitor and Evaluate**: This is applicable to all spill scenarios. In the event that a surface spill does not threaten any protection priorities this may be the only option adopted (refer Section 7). Note that the OSMP will be implemented for all Level 2 and Level 3 spills. The OSMP contains modules associated with all operational monitoring and should be referenced for protocols and resource needs (refer Section 16 for Summary of operational & Scientific Modules).
3. **Dispersant Application**: This strategy is a marine response strategy for a Level 2 or Level 3 WSH crude spill, which is not considered as a viable occurrence during the campaign.
4. **Offshore Containment and Recovery**: This strategy is a marine response strategy in the event of a Level 2 or Level 3 WSH crude spill, which is not considered as a viable occurrence during the campaign.
5. **Shoreline Protection and Deflection**: This strategy will be deployed when surface hydrocarbons threaten shoreline environmental sensitivities. Predictive real-time modelling and surveillance and monitoring activities will confirm resources at risk. A NEBA will determine whether the strategy will have an overall benefit to protecting shoreline sensitivities (refer Section 10).

6. **Shoreline Clean-up**: This strategy will be considered in the event of a Level 2 or Level 3 spill where hydrocarbons threaten to impact shoreline environments , which is not considered as a viable occurrence during the campaign.

7. **Oiled Wildlife Response:** This strategy is considered for all Level 2/3 spills where surveillance activities identify marine fauna maybe impacted by the spill (refer **Section 12).**

Within the context of the environmental conditions in Bass Strait and the protection priorities identified within the geographical are of the spill ZPI, the following assessment of recommended oil spill response options is provided:

- **MDO Spill:** Based upon the limited inventories present and MDO characteristics (i.e. rapid spreading and evaporation) the response options of dispersant application; contain and recover; and deflection and protection are not considered feasible for these spills. Recommended effective response options are source control; monitor and evaluate (natural weathering); shoreline cleanup (as necessary) and oiled wildlife response (as necessary

The effectiveness of the response options adopted requires continued reassessment in accordance with the Sea Lion and West Seahorse OSMP (Doc No: SLN-CHP-60-RG-RA-0002) and against termination criteria provided in **Section 15**. During an actual spill, the spill trajectory, oil spill amount, time from spill event and season may result in different levels of response options being adopted and their “effectiveness”. Any such information must be assessed and inform the spill Incident Action Plan (IAP) – a living document.

6 SOURCE CONTROL

Source control is considered the highest priority response in an oil spill to limit the loss of hydrocarbon to the marine environment. In accordance with developed plans for emergency response, source control will be attempted only when safe to do so. The *Vessel* in preparing Vessel Safety Management Systems documents foresee the possible safety hazards associated with credible hydrocarbon releases on-board and establish response procedures which consider personnel safety-related impacts to be implemented during response activities.

6.1 LEVEL 1 VESSEL RELEASES

Hazard and risk assessments undertaken for the WSH-3 Decommissioning activity have identified that Level 1 Vessel releases are associated with packaged chemical releases through drain systems and hydraulic line releases during ROV activities. As such the source volume and hence source control is largely limited by the packaging size and hydraulic line volumes, which are small.

On notification of such an incident, the spill will be reported to the OIM/Vessel Master.

Objective:

- To prevent/contain further spillage in the environment from a Level 1 spill.

Implementation:
In the event of a spill the Vessel will implement respective SOPEPs to limit and mitigate the spill to the marine environment. For example, in the event of a hydraulic line leak operations will be stopped immediately and clean-up operations initiated. Refer to *WSH-3/Wardie-1 Non-production Operations Environment Plan Section 5.8* for further details on the mitigations in place for these spill incidents.

Termination Criteria:
The workplace has been cleaned of hydrocarbons and the residues disposed in accordance with the Vessel's Waste Management Plan.

Performance Outcome Measure:

Table 6-1: Response (Source Control – Level 1 Vessel Release)

Applicable Level	Performance Outcome	Standard	Measurement Criteria
1	Source of hydrocarbon release is eliminated.	Vessels have an approved SOPEP (equivalent to class) for activation in a Level 1 spill event and crews are trained in its implementation.	CHPL prior to contract award for critical contractors shall verify SOPEP availability and drill exercises undertaken to support SOPEP.
		Spill intervention and cleanup has been undertaken in accordance with the requirements of the Vessel SOPEP.	Incident records verify that spill has been contained in accordance with SOPEP requirements.

6.2 LEVEL 2 MDO RELEASE (VESSEL TANK RUPTURE OR REFUELLING SPILL)

Hazard and risk assessments undertaken for the WSH-3 Decommissioning activity have identified that Level 2 Vessel releases are associated with vessel fuel loss as a result of collision/fuel tank leak or rupture.

On notification of such an incident, the spill will be reported to the OIM/Vessel Master.

Objective:

- To prevent/contain further spillage in the environment from a Level 2 spill.

Implementation:
For a vessel collision/fuel tank leak scenario, the Vessel will implement measures also contained in the vessel's SOPEP to eliminate/reduce hydrocarbon release to the environment. Source control would typically implement the following measures:

- Transfer tank contents by transfer to an empty/not full tank taking into account the compatibility of the substances and the vessel's overall stress and stability;
- Isolate damaged/penetrated tanks to prevent further loss;
- Evaluate the necessity of transferring bunkers/cargo to barges and other ships and will request such assistance accordingly;
- Trim or lightening the vessel to avoid further damage to intact tanks.

Termination Criteria: The following criteria are relevant:

- The refueling leak has been controlled or contained on-board.
- Leaking/ruptured fuel tanks have been secured onboard the vessel.

Performance Outcome Measure:

Table 6-2: Response (Source Control – Level 2 MDO Release)

Applicable Level	Performance Outcome	Standard	Measurement Criteria
2	Eliminate spill source and contain spill residue to reduce the total volume of hydrocarbons released to the marine environment.	Vessels have an approved SOPEP (equivalent to class) for activation in a Level 2 spill event and crews are trained in its implementation.	CHPL prior to contract award for critical contractors shall verify SOPEP availability and drill exercises undertaken to support SOPEP.
		Spill source intervention and containment has been undertaken in accordance with the requirements of the Vessel SOPEP.	Incident records verify that spill has been contained in accordance with SOPEP requirements.

7 MONITOR & EVALUATE

Spill trajectories, volumes and oil weathering states during a spill event from Decommissioning Campaign activities in VIC/RL17 will require monitoring, surveillance and trajectory prediction to determine potential impacts on sensitive environmental resources within the ZPI.

Monitoring and evaluation strategy will be deployed for all spill scenarios to support other response strategies. Monitoring and evaluation will be the only strategy adopted when shoreline impact is not likely and where a NEBA assessment concludes that other strategies should not be deployed.

7.1 VESSEL SURVEILLANCE

Direct observation from the Vessel can be used to assess the visible extent, location and direction of travel of hydrocarbons and to verify predictive modelling in a Level 2 oil spill incident.

Objectives:

- Determine the distribution of the surface slick;
- Identify the presence of marine fauna in the response area;
- Monitor the dispersion of released hydrocarbons.

Implementation of Response Option:
Visual observations will be undertaken from the Vessel immediately in the event of an oil spill.

Vessel surveillance will be undertaken immediately by the Vessel in the event of a Level 2 spill incident. After the initial response, for a Level 2 spill, spot hire vessels will be engaged for vessel surveillance activities.

Vessels will be instructed by the ERG Leader (CHPL Drilling Supervisor) (Level 1) or IMT Leader (Level 2/3) for deployment of satellite tracking buoys (Level 2/3 only) (refer **Section 7.3**) for an indication of the surface oil location and extent.

Vessels undertaking surveillance activities shall provide an hourly report to the ERG Leader (Level 1) or IMT Leader (Level 2), or at designated intervals determined by the ERG/IMT Leader, providing the Completed Vessel Observers Log as provided in the OSMP *OM01 – Oil Spill Surveillance and Reconnaissance – Sampling and Analysis Plan.*

Completed Logs will be emailed to the ICC each hour of observation.

Constraints/Operational Limitations:

- Vessel based observations are only effective if the sea-state conditions are calm.

Endpoint Criteria:
Vessel-based surveillance is undertaken during daylight hours as scheduled in the IAP and continues until source control is completed and termination criteria as detailed in **Section 15** are achieved.

Performance Outcome Measure:

Table 7-1: Monitor and Evaluate – Vessel Surveillance

Applicable Level	Performance Outcome	Standard	Measurement Criteria
1,2	Maintain situational awareness of the spill to inform response planning (NEBA), determine response strategies for protection priorities which reduce impacts and risks of spill to ALARP. Specifically for vessel surveillance* provide information relating to the distribution of the surface oil slick, the dispersion characteristics of the spill and the presence of marine fauna in the spill pathway. **This information is provided under calm sea states*.	Visual observation of the oil spill is undertaken from the Vessel and provided to the ERG/IMT within 1hr of the spill incident.	Incident log verifies that surveillance information has been received within 1hr of the spill incident.
		Vessel surveillance information is provided at designated intervals to the ERG/IMT Leader in accordance with OM01 – Oil Spill Surveillance & Reconnaissance.	Completed Observers logs are provided to ERG/IMT leader at designated intervals.

7.2 AERIAL SURVEILLANCE

Aerial surveillance is undertaken in the event of a **Level 2 spill** to monitor the presence of hydrocarbon at the surface, hydrocarbon weathering characteristics, the presence of marine fauna and sensitive receptors in the area, and, during dispersant operations, the effectiveness of dispersant application (if used).

Objectives:

- Maintain situational awareness (surface slick distribution) and ongoing understanding of the success of response activities;
- Obtain information to inform the IMT with respect to environmental sensitivities in the response area (i.e. marine fauna); and the presence of marine fauna in the response area; and
- Understand the likely fate, weathering and trajectory of the spill.

Implementation of Response Option:
Aviation Resources: Aerial surveillance support is to be provided initially by Bairnsdale Air Charter (2 x Cessna 337) (5 seats) located at Bairnsdale. Flying time to the WSH-3 location is approximately 15minutes flying with 10hrs loiter time.

Additional surveillance support for an ongoing surveillance support can be provided by:

- Merimbula Air Services (2 x Cessna 337) (5 seats); and
- Gippsland Air Charter (1 x Cessna 337) (5 seats) (10hrs loiter time) located at Lakes Entrance (approximately 15minutes flying time).

Aerial Observers: An initial (trained) aerial observer will be obtained from Gippsland Ports to undertake initial aerial observations. This observer will be replaced with observers within 24hrs from AMOSC [3 trained observers in Geelong, 2 trained observers in Perth], Exceed and Core Group Resources. Additional observers are available through NATPLAN NRT resources [7 personnel, one from each state].

Obtaining Information:

1. During the first 24hrs of a Level 2 spill incident, overflight of the Gippsland estuary systems between Merriman's Creek and Eden must be initiated to establish the following:
   - Estuarine system open/closed status to the marine environment; and
   - Estuarine systems which have continuous outflow to the sea (i.e. no tidal water ingress).

   This information will be incorporated into the IAP for shoreline protection. The status of the open/closed nature of the estuaries will be reconfirmed routinely during the spill event.
2. The IMT will develop an over-flight schedule to define the frequency of aerial surveillance over the spill location to meet IMT needs for spill location, dispersion, and weathering for input into oil spill trajectory modelling. Flights will be undertaken only during daylight hours and in weather conditions which do not pose significant risks.

   The observers will also collect information on marine fauna which may be affected by the oil spill. Procedures to undertaken this surveillance includes (refer Operational & Scientific Monitoring Plan (OSMP) **Section 16**):

   a. *OM01: Oil Spill Surveillance and Reconnaissance – Sampling and Analysis Plan; and*

   b. *OM05: Wildlife Surveys Marine Mega Fauna and Seabirds – Rapid Assessment Plan.*

   The Aerial Observers shall record information in the observation sheets provided in these procedures and transmit information to the IMT at a frequency described in these procedures.

Constraints/Operational Limitations:

- Aerial surveillance observations will be undertaken only in weather conditions deemed safe by the IMT and in good visibility (i.e. 150ft above ground level (AGL) for the Ceiling and 5000m Visibility, or 1500ft AGL Ceiling and 1500m Visibility during daylight hours).

Endpoint Criteria:
Aerial-based surveillance is undertaken as scheduled in the IAP and continues until source control is completed and termination criteria as detailed in **Section 15** are achieved.

Performance Outcome Measure:

Table 7-2: Monitor and Evaluate – Aerial Surveillance

Applicable Level	Performance Outcome	Standard	Measurement Criteria
2	Maintain situational awareness of the spill to inform response planning (NEBA), determine response strategies for protection priorities which reduce impacts and risks of spill to ALARP.	Aerial surveillance is initiated within 6hrs of spill event (daylight permitting) and at a frequency identified in the IAP thereafter	Incident log verifies aerial surveillance initiated within 6hrs (daylight permitting)
		Aerial surveillance is undertaken in accordance with the requirements of *OM01 – Oil Spill Surveillance & Reconnaissance* and *OM05 – Wildlife Surveys Marine Mega Fauna and Seabirds* (rapid assessment)	Incident log verifies that aerial surveillance data logs were completed for all surveillance flights.
		Aerial surveillance information regarding estuary status is provided to the IMT Environmental Coordinator within 24hrs of the spill incident notification.	Incident log verifies that information relating to the open/closed status and net water outflow is provided within 24hrs of spill incident notification.

7.3 MARINE TRACKING SATELLITE BUOYS

Objectives:

- Monitor the movement of the surface oil slick; and
- Qualify and assist in surveillance monitoring.

Implementation of Response Option:
Satellite tracking buoys will be deployed from AHTS Vessel within one hour of request from IMT to allow for the tracking of the surface spill in the marine environment. Two tracking buoys contained within the first strike kit on-board the AHTS vessels are available for deployment.

The Operational Work Instruction for using the tracking buoys is contained in *OM01 – Oil Spill Surveillance and Reconnaissance – Sampling and Analysis Plan*.

As determined by the IMT Leader, upon completion of monitoring using tracking buoys, the buoys are to be retrieved by the vessel.

Constraints/Operational Limitations:

- Tracking buoys have a standard operating life of approximately 180-365days (*not an issue for the worst case spill event*).

Endpoint Criteria:
Satellite tracking buoys will continue until surveillance is terminated by the IMT Leader.

Performance Outcome Measure:

Table 7-3: Monitor and Evaluate – Marine Satellite Tracking Buoys

Applicable Level	Performance Outcome	Standard	Measurement Criteria
2	Obtain and maintain situational awareness of the spill to inform response planning (NEBA), determine response strategies for protection priorities which reduce impacts and risks of spill to ALARP. Specifically, satellite tracking buoy information will inform the IMT on: • The movement of the surface oil slick; and • Provide validation for the spill fate modelling used to predict the movement of the spill.	Satellite Tracking buoys deployed within 1hr of request from the IMT Leader	Incident log verifies this action has been undertaken in the required timeframe.
		Satellite tracking buoy information provided to oil spill trajectory modelling services to validate oil spill trajectory prediction as determined by OM01 – Oil Spill Surveillance and Reconnaissance.	Incident log verifies that satellite tracking buoy movement has been provided to oil spill trajectory modelling service.

7.4 OIL SPILL TRAJECTORY MODELLING (OSTM)

Upon notification of a Level 2 spill, the CHPL Project Manager shall activate the CHPL OSTM contract with RPS-APASA to achieve a rational, safe and organised first response.

Modelling will provide trajectory forecasts to assess the direction, speed and potential location of the spill. Modelling will be completed throughout the spill response to inform the spill response activities to reduce the impacts to ALARP. The results from the predictive modelling will allow the risks to resources, and their time-windows, to be better understood by the IMT, so planning and commitment of resources can be made with greater certainty; and to inform further responses and identify possible impacts.

Objectives:

- Predict the behaviour of the surface oil slick;
- Identify emerging risks to sensitive environmental receptors in the area (existing or potential);
- Provide simulations showing the outcome of alternate response options to identify optimal response options; and
- Inform Response Planning.

Implementation of Response Option:
Spill fate modelling will be performed by RPS-APASA. During business hours the service is initiated as soon as CHPL activates the contract. During out-of-hours an allowance of 1hr is made to mobilise the response officer to the office. Modelling will be initiated by the submission of the OSTM Request form to RPS-APASA.

The primary information exchange between CHPL and RPS-APASA will be via a data share site set up by RPS-APASA. Login details for the site are held in the ICC and with the CHPL Project Manager.

OSTM modelling and output will be undertaken in accordance with *OM02 – Oil Spill Movement Prediction*. Daily updates on spill behaviour will be provided to CHPL, however more frequent updates can be provided if deemed necessary and requested by the IMT Leader. Data provided by aerial surveillance will be provided to RPS-APASA to verify and adjust fate predictions and allow for improved predictive accuracy.

Constraints/Operational Limitations:

- APASA will mobilise within 1hr of callout and preliminary OSTM results should be available within 4-6 hrs (SIMAP) and 2 hrs (OILMAP) from the time of submission of the OSTM form.

Termination Criteria:
Oil Spill Trajectory Modelling will continue until surveillance is terminated by the IMT Leader.

Performance Outcome Measure:

Table 7-4: Monitor and Evaluate – Oil Spill Trajectory Modelling

Applicable Level	Performance Outcome	Standard	Measurement Criteria
2,3	Obtain and maintain situational awareness of the spill to inform response planning (NEBA), determine response strategies for protection priorities which reduce impacts and risks of spill to ALARP. Specifically, OSTM will inform the IMT on: • Predicted behavior of the spill; • Identify emerging risk to sensitive receptor in the area; and • Oil spill response planning.	OSTM contract activated by the CHPL Project Manager within two hours of incident notification. Preliminary OSTM results within 6hrs (SIMAP), 2hrs (OILMAP) of spill information receipt	Incident log verifies the initial OSTM results have been received within this timeframe.
		OSTM continues throughout the spill incident in accordance with the requirements of OM02 – Oil Spill Movement Prediction.	Incident log verifies that OSTM is provided at frequencies and in accordance with this procedure.

7.5 SAFETY EXCLUSION ZONES

Aircraft and vessels within the ZPI require information relating to hazardous area zones around infrastructure to prevent personnel exposure to severe safety hazards. Safety exclusion zones will be utilised for Level 2 spills at the direction of the IMT.

Objectives:

- Protect personnel within the ZPI from physical hazards and chemical/spill exposure (health and safety) during a Level 2 spill event.

Implementation of Response Option:

Aviation Resources: During a Level 2 spill, hazardous areas will be confirmed in accordance with the OSMP – *OM06 Modelling of Hazardous Zones, Vapour Plumes and Air Quality Monitoring near the Release Site for OHS Purposes* which utilises the RPS-APASA agreement to predict hazardous areas based upon prevailing weather conditions (using AIRMAP). Based upon this information, Safety Exclusion zones shall be determined by the IMT Leader and recorded in the IAP. Hazardous zones will be routinely monitored and the IAP updated as required. All CHPL contracted vessels and aircraft will observe these restrictions.

Third Party Personnel: The following notifications will be made to third party stakeholders during a Level 2 spill:

- Support vessels will notify adjacent third party marine users on (VHF) CH16 of the immediate hazards in the event of a spill and relevant on-water third party exclusion zones.
- Exclusion zones will be established on-water around the source of the spill and the slick area by requesting a Notve to Mariners (NTM) via the Australian Hydrographic Office (AHO) and via the AMSA RCC who will issue AusCoast warnings.
- The WSH-3 location lies within Defence Restricted Airspace R285D. CHPL will notify the Joint Airspace Control Cell immediately of oil spill response activities within the area.
- CHPL will notify adjacent petroleum title holders, relevant fishing industry associations and individual fishermen (as identified) in the event that the oil spill may enter their titles or area of operation.

Constraints/Operational Limitations:

Response exclusion zone setting will be used to support other response options.

- Time period to determine hazardous areas via AIRMAP is limited to 2hrs after RPS-APASA receives oil spill information

Endpoint Criteria:

Exclusion zones are maintained until the oil spill response is terminated and the IMT Leader determines there is no hazard to CHPL contractor personnel or third party marine users.

Performance Outcome Measure:

Table 7-5: Monitor and Evaluate – Safety Exclusion Zones

Applicable Level	Performance Outcome	Standard	Measurement Criteria
2,3	Obtain and maintain situational awareness of the spill to inform response planning (NEBA), determine response strategies for protection priorities which reduce impacts and risks of spill to ALARP.	OSTM contract activated by the CHPL Project Manager within two hours of incident notification. Preliminary OSTM results within 2hrs (AIRMAP) of spill information receipt.	Incident log verifies the initial OSTM results have been received within this timeframe.

8 DISPERSANT APPLICATION

Chemical dispersants are designed to enhance natural dispersion by reducing the surface tension at the oil/water interface, making it easier for wave motion to create small droplets which increases the surface area available to degradation. Net positive outcomes which result from dispersant application are a decrease in surface oiling, a decrease in shoreline oil loadings, enhanced oil degradation and a reduction in waste.

However, dispersant application is only applicable in the event of a Crude Oil Spill and as the WSH-3 meets the requirements for a permanently abandoned well there is no risk of such an event and therefore dispersant application has not been considered for the WSH-3 Decommissioning activities.

9 OFFSHORE CONTAIN & RECOVER OPERATIONS

Contain and recover operations, which act to form a physical barrier between oil and environmental sensitivities, can be deployed when there is a threat to those environmental sensitivities. This response option requires the use of vessels, booms, skimming systems and aircraft with aerial observation to direct vessels to the areas with the thickest surface oils.

However, offshore contain and recover operations are only applicable in the event of a Crude Oil Spill and as the WSH-3 meets the requirements for a permanently abandoned well there is no risk of such an event and therefore offshore contain and recover operations has not been considered for the WSH-3 Decommissioning activities.

10 PROTECTION AND DEFLECTION OPERATIONS

As protection and deflection operations would be undertaken in State waters, the DOT as the CA in Victoria will direct response operations to protection priority areas. All aspects of shoreline protection and deflection will be conducted in accordance with the requirements of these CAs with CHPL supporting these operations.

However, protection and deflection operations are only applicable in the event of a Crude Oil Spill and as the WSH-3 meets the requirements for a permanently abandoned well there is no risk of such an event and therefore protection and deflection operations has not been considered for the WSH-3 Decommissioning activities.

11 SHORELINE ASSESSMENT AND CLEANUP

As shoreline cleanup operations would be undertaken in State waters, the DOT as the CA in Victoria will direct response operations to protection priority areas. All aspects of shoreline protection and deflection will be conducted in accordance with the requirements of these CAs with CHPL supporting these operations.

Note DEPI is responsible for public land on the Victorian coast and its marine waters but delegates its' management responsibility to the following land managers:

- Coastal Local Government Authorities are responsible for the care and maintenance of some shorelines; and
- Parks Victoria is the shoreline manager of all Coastal State and National Parks in Victoria (i.e. Croajingalong NP, Cape Conran Coastal Park, Gippsland Lakes Coastal Park, Nooramunga Coastal Park Wilsons Promontory National Park); State Game Reserves (Jack SmithLake and Ewings Morass); and is is manager of all Marine Parks in Victoria (Corner Inlet MNP, Nooramunga Marine Park, Wilsons Promontory MNP, Ninety Mine Beach MNP, , Point Hicks MNP, Cape Howe MNP, Beware Reef Marine Sanctuary).

The following types of shoreline residues may be expected from the decommissioning campaign if a Level 2 spill occurs:

For a Marine Diesel Spill: MDO is not sticky or viscous compared with black oils (i.e. some crude oils and HFO) it tends to penetrate porous sediments (sands) quickly, but also tends to be washed off quickly by waves and tidal flushing. MDO is readily and completely degraded by naturally occurring microbes within 1-2months (NOAA, 2013).

Shoreline assessment is triggered on a Level 2 spill event. Shoreline cleanup will be triggered by the State CA after a NEBA identifies a net benefit.

Objectives:

- Assess oiled shorelines for most appropriate response strategy suitable to the environmental context of the impacted shoreline: and
- Implement NEBA outcomes to accelerate recovery and minimise impact of shoreline clean-up operations.

Implementation of Response Option:
Implementation of this response option involves two phase and is scalable according to the incident:

- Phase 1 - SCAT assessment of the affected shorelines; and
- Phase 2 - Activate clean-up response operations.

Information obtained in Phase 1 activities shall be provided to the DOT for assessment to determine the benefits of shoreline clean-up. Depending on the information received, Phase 2 (clean-up) activities will be under the control of DOT, in accordance with an IAP supported by a NEBA which shows net environmental benefit

Given the type of spill is restricted to a Marine Diesel Spill, and the volumes impacting the shoreline fall well below actionable thresholds the likelihood of a clean-up operation is extremely low and the natural degradation of the oil in place the most likely outcome.

Termination Criteria:
Shoreline clean-up operations are undertaken in accordance with the requirements of the State CA until termination criteria as identified by the State CA is achieved.

Performance Outcome Measure:

Table 7-4: Monitor and Evaluate – Oil Spill Trajectory Modelling

Applicable Level	Performance Outcome	Standard	Measurement Criteria
2	In accordance with State-based NEBA CHPL aids recovery of shorelines impacted by stranded oil and reduces impacts to ALARP.	CHPL participates in State CA IMT with respect to NEBA assessments and IAP development and provide requested clean-up resources to achieved IAP performance objectives	Incident log verifies that the CHPL Liaison Officer is deployed to State IMT and provides requested cleanup resources to achieve IAP performance objectives.
		CHPL provides state CA with operational surveillance information in accordance with OM01- Oil Spill Surveillance and Reconnaissance and predicted oil spill trajectory in accordance with OM02 – Oil Spill Movement Prediction within 1hr of receipt to inform spill response.	Incident log verifies that operational monitoring has been provided to State Authorities within 1hr of receipt by CHPL.

12 OILED WILDLIFE RESPONSE STRATEGY

As oiled wildlife management response operations occur in State jurisdiction, the DOT as the CA in Victoria will direct this aspect of response in accordance with their support agencies responsible for wildlife management plans and will set priorities to reduce impacts to ALARP.

In the event of a hydrocarbon spill, the impact on wildlife is determined by the types of fauna present, the type of hydrocarbon spill and the extent of exposure. Oiled wildlife response is considered in the event of a spill which has the potential to visibly oil wildlife (i.e. ~10µm^{+} (surface oil) or has a shoreline residue above 100g/m^{2} and will be implementation for all Level 2/3 spills. The decision will be incorporated into the IAP.

Given the WSH-3 meets the requirements for a permanently abandoned well the only credible risk of an oil spill is that of Marine Diesel Oil form a Vessel Collision. This type of release will not elicit an oiled wildlife scenario and as such it has not been considered for the WSH-3 decommissioning campaign.

13 WASTE MANAGEMENT

Oil spill response options can generate significant amounts of waste. The temporary storage, transport, treatment and disposal of waste material must be correctly managed to safeguard against any adverse environmental effects which may inhibit clean-up activities.

The CHPL Waste Management Contractor will develop the WSH-3 Decommissioning Campaign Waste Management Plan which details the methodology for waste collection and disposal for the anticipated waste generated throughout operation including any spill response.

Objectives:

- Minimize the environmental impact of waste generation from oil spill response activities through implementation of the waste minimization hierarchy of controls: prevention, reduce, reuse, recycle, energy recovery, treatment and disposal;
- Comply with all applicable state laws, regulations and policies with respect to waste handling and disposal; and
- Ensure there is sufficient temporary and interim storage to not bottleneck recovery operations.

Implementation of Response Option:
The WSH-3 decommissioning campaign will be supported by a CHPL Waste Management Contractor with 24/7 emergency response capabilities.

- **For Level 1** spill response the CHPL Project Manager (or delegate), in consultation with the Offshore Supervisor will coordinate waste storage and disposal (as appropriate).
- **For Level 2** spill response the CHPL Waste Management Contractor on call-out will supply a Waste Management Coordinator (WMC) to the IMT to develop, coordinate and manage the IMT Waste Management Sub-plan for the spill location. The Waste Management Sub-Plan will utilize information from the WSH-3 Tactical Waste Management Plan (finalized two months prior to operations commencement) to develop a spill specific waste management strategy.

The purpose of the Waste Management Sub-Plan is to ensure that:

- Oily waste is properly handled and stored;
- Oil and oily debris is adequately segregated, treated and stored at the point of collection to prevent secondary contamination;
- Oil and oily debris is rapidly collected and taken to designated sites for storage, treatment or disposal;

- Treatment or disposal practices ensure that the wastes pose no future threat to the environment.

The Waste Management sub-plan will distinguish between waste materials collected from "offshore" areas under the direct control of CHPL; and wastes collected from "onshore" areas which will be under the control of the State CAs. CHPL will provide resources to support "onshore" waste management activities.

Estimates of waste generation from the different operational activities will be provided to the WMC throughout the response so adequate storage containment, waste transporters and treatment and disposal facilities are identified and provided. All waste materials shall comply with regulatory requirements.

The IMT Logistics Coordinator shall aid in obtaining temporary storage equipment from available and alternate stockpiles. The WMC shall sourcing/organizing waste management transporters or disposers.

14 OCCUPATIONAL/WORKPLACE HEALTH AND SAFETY

This section applies to all personnel under the control of CHPL participating in a marine pollution incident associated with the WSH-3 Decommissioning campaign (VIC/RL/17). It details the planning and operational level processes for ensuring the welfare of personnel.

The CHPL IMT Leader has overall responsibility/accountability for Occupational/Workplace Health and Safety. The Security, Safety, Health and Environment (SSHE) Coordinator on the IMT will support the IMT Leader to ensure that these processes are adopted and implemented during the spill response.

It is Hibiscus Petroleum's Policy to protect the health and safety of their people and of those affected by our business. Hibiscus Petroleum believes all injuries are preventable through the active participation of all personnel in adopting safe work practices. Hibiscus Petroleum is committed to continuous improvement by ensuring that hazards are assessed, where possible eliminated, and where this is not possible the risk is reduced to a level which is ALARP.

14.1 SITE SAFETY PLAN

For Level 2 incidents a Site Safety Plan will be developed as a priority at each designated worksite for clean-up operations under the control of CHPL. All personnel shall adhere to these requirements. A standard HSE Site Safety Plan proforma is contained in **Appendix D** and includes an assessment of:

- Site Characteristics;
- Site Hazard Information;
- Site layout map;
- Monitoring Programs;
- Work activity;
- Site organization, site supervisor and safety officer nominations;
- Emergency Contacts

14.2 RISK MANAGEMENT

CHPL will ensure that a risk assessment is undertaken and documented as part of the planning phase for each major oil spill task being undertaken and before entering the work location (risk area). This will be supplemented by a Job Safety and Environmental Analysis (JSEA) or Take 5 process or equivalent independent sub-contractors management system to confirm the hazards and risks at the worksite, by all parties involved, prior to undertaking the activity. This must include relevant decontamination issues to personnel working in the field and the management of decontamination units (as appropriate).

All risk assessments will be communicated effectively to all employees, contractors and personnel involved in the response activity. Strategies to manage the risks shall be implemented and monitored by the Site Supervisor.

The JSEA will determine the personal protective equipment (PPE) and first aid requirements for any site. Where required, CHPL will provide a first aid contractor to provide field services. This is arranged by the HSSE Coordinator. As a minimum requirement, all sites will have a field first aid kit and a qualified Level 2 First Aider in the absence of a first aid provider.

14.3 HAZARD AND INCIDENT REPORTING AND INVESTIGATION

All incidents that cause or have the potential to cause injury or damage to property or environment must be reported, recorded and investigated (according to potential severity) to ensure that corrective and preventative actions are taken and lessons learned.

CHPL personnel shall report any new hazards, incidents or near-misses to the Site Supervisor and the IMT OHS Coordinator or HSSE Coordinator depending upon the level of the spill. The IC will be informed of these incidents as soon as reasonably practicable.

As determined by these positions, an incident investigation will be undertaken in accordance with the independent sub-contractors incident investigation procedures and the corrective actions provided to the IMT OHS Coordinator/HSSE Coordinator who shall monitor the actions to closure.

Internal investigations will be undertaken by the HSSE Coordinator (or delegate) and corrective actions will be included in reports to the line manager (e.g. Operations Officer) and IMT Leader (IC). Safety updates (including incidents) will be included in daily briefings and updated in the IAP. The IC (or delegate) will be responsible for ensuring any regulatory notifications to appropriate authorities are made by the required personnel associated with the incident (i.e. NOPSEMA/AMSA for Commonwealth waters, Transport Safety Victoria/Worksafe Victoria for Victorian workplaces).

14.4 TRAINING, INDUCTION AND BRIEFINGS

All personnel participating in a marine pollution response must be capable and competent to undertake their assigned tasks. For tasks which require specific certificates of competency and/or licences details relating to those requirements will be checked prior to the commencement of tasks and copied retained for future reference.

All personnel involved in the response shall be inducted into the tasks they are performing. Generally this will consist of a General Site Safety Induction and a task/activity-specific induction. These inductions will be undertaken by the site supervisors and shall be developed by the IMT OHS Coordinator or HSSE Coordinator (as appropriate). These positions are responsible for ensuring the induction process is established and implemented by line-management and team/site supervisors. Records of the inductions will be retained and supplied to the Finance and Administration Unit.

The content of these inductions will include the following:

General Site Safety Induction: Site-specific rules, issues or processes (i.e. access); details of any risk assessments undertaken; known hazards and controls; PPE requirements; emergencies, first aid, evacuation and muster points; key personnel and reporting structures; layout of the area and security (as appropriate); environmental awareness and requirements; and site driving restrictions (as appropriate).

Task/activity Induction: Outline of the objectives and tasks to be undertaken; details of issues relating to task/methods or equipment to be used (e.g. standard operating procedures); details of known hazards and controls; local environmental issues; local assembly and evacuation points; local first aid and emergency services; local communications plans; reporting requirements; expectations regarding work and performance; and work schedule.

All personnel will also be provided with regular briefings on response activities and any issues of concern. Safety briefings shall be held for each workgroup, particularly field work groups, at the beginning of

each work shift. The field supervisor will ensure that responders are competent to undertake tasks required and they wear PPE appropriate to the tasks they are undertaking.

14.5 GENERAL HAZARDS

Possible health and safety hazards which may be expected during field operations in an oil spill response are detailed in **Table 14.1**. This listing is general in nature identifying possible hazards associated with the response activity, however will not apply to all personnel. In risk assessment activities a thorough assessment of hazards associated with the work activities shall be undertaken.

Table 14-1: Potential Hazards Associated with Oil Spill Response Activities (Field Personnel)

	Activity						
	Aerial Surveillance	Aerial Dispersant Application	Vessel Dispersant Application	Containment & Recovery	Shoreline Clean-up Assessment	Shoreline Operations	Waste Management
Hazard							
Noise (85-90dBA)	✓	✓	✓	✓	✓	✓	
Exposure to Volatile Organic Compounds, and possibly H_2S	✓	✓	✓	✓	✓	✓	✓
Exposure to dispersant		✓	✓				
Skin contact with recovered oil				✓	✓	✓	
Handling oiled waste							✓
Hydraulic hose failure				✓		✓	✓
Rotating machinery (equipment)	✓	✓	✓	✓			
Water, currents, tide					✓	✓	
Unsecured load		✓	✓	✓			✓
Crane lifting				✓			
Dangerous wildlife					✓	✓	
Manual handling		✓	✓	✓	✓	✓	✓
Slips, trips, falls	✓	✓	✓	✓	✓	✓	✓
Acute airsickness	✓						
Hypothermia / heatstroke			✓	✓	✓	✓	✓
Emergency ditching, crash landing	✓	✓					
Loading and unloading vessels and vehicles							✓
Road and site traffic accident							✓
Small boat operations					✓	✓	
Man overboard		✓	✓	✓			
Vessel collision / grounding				✓			
Aircraft collision	✓	✓					

	Activity						
	Aerial Surveillance	Aerial Dispersant Application	Vessel Dispersant Application	Containment & Recovery	Shoreline Clean-up Assessment	Shoreline Operations	Waste Management
Fire on-board vessel			✓	✓			
Hygiene Issues	✓	✓	✓	✓	✓	✓	✓
Fatigue	✓	✓	✓	✓	✓	✓	✓
Sunburn	✓	✓	✓	✓	✓	✓	✓

14.6 FATIGUE MANAGEMENT AND FITNESS FOR WORK

Fatigue is a recognised hazard and, as such, must be managed in line with CHPL/UPSs Risk Management Policy and Procedures. Where practicable, situations where personnel are fatigued will be identified and eliminated. Where the risk of fatigue cannot be eliminated, then it will be reduced, as far as is reasonably practicable. Situations where operational risks associated with fatigued personnel must be identified and managed.

During the incident, the IMT Leader (IC) will ensure staffing plans/rotations address fatigue management to address the specific needs of in regards to the management of fatigue and fatigue related risks. The fatigue management plan will ensure sufficient manning to ensure that field personnel do not work longer than 8hrs per day (with breaks) and IMT members do not work longer than a 10-12hour day (with breaks). This plan forms part of the Occupational Health and Safety Plan.

14.7 PERSONAL PROTECTIVE EQUIPMENT (PPE)

PPE requirements are established through risk assessment activities and line-managers and team/site supervisors are responsible for ensuring all team members are provided with the appropriate PPE and trained in its correct use, wear and maintenance. PPE requirements are dependent on the activity being undertaken however **Table 14-2** provides details of PPE which might be assessed as required for each response option depending upon the actual activity scope and different levels of participation within that activity (e.g. for mechanical shoreline cleanup, heavy equipment operators will need hearing defenders, however in manual shoreline cleanup this requirement would not be expected to be required.

All individuals are responsible for wearing and maintaining the required PPE and shall notify their Manager/Supervisor if there are any issues with PPE supplied.

Table 14-2: Expected PPE requirements according to Response Option (Field Personnel)

	Activity						
	Aerial Surveillance	Aerial Dispersant Application	Vessel Dispersant Application	Containment & Recovery	Shoreline Clean-up Assessment	Shoreline Operations	Waste Management
Personal Protective Equipment							
Hard hat			✓	✓			✓
Ear defenders	✓	✓	✓	✓	✓	✓	✓
Safety glasses		✓		✓	✓	✓	✓
Chemical resistant goggles			✓				
Respirator		✓	✓				
Gloves		✓		✓		✓	✓
Oil resistant gloves					✓		
Chemical resistant gloves			✓				
No loose clothing, no jewellery	✓			✓			
High visibility clothing			✓	✓	✓	✓	✓
Overalls		✓	✓	✓	✓	✓	✓
Oil resistant suit					✓	✓	
Chemical suit			✓				
Sturdy footwear	✓						
Steel toe cap boots		✓	✓	✓		✓	✓
Oil resistant safety boots					✓		
Personal Floatation Device or lifejacket		✓	✓	✓	✓	✓	✓
Aviation lifejacket	✓						
Sunscreen	✓	✓	✓	✓	✓	✓	✓
Insect Repellent				✓	✓	✓	✓

15 TERMINATION OF THE RESPONSE

15.1 RESPONSIBILITY FOR TERMINATION OF RESPONSE

The decision to terminate an oil spill response in Commonwealth waters will be initiated by CHPL in consultation with NOPSEMA, AMSA, DOT and other stakeholders. Decision factors will include:

- The efficacy and benefit of current response options against natural cleaning;
- Significance of environmental receptor impacted;
- Potential for environmental damage caused by further clean-up efforts weighed up against other factors such as response team risk in undertaking the activity; and
- Potential for further pollution (i.e. source control)

A NEBA will inform a 'termination of response' decision.

For individual response options, termination conditions have been defined in **Section 6** to **Section 12**. Specific response option termination criteria are provided in **Table 16-1**. Note these conditions may not occur at the same time for all response options and some responses will be reduced in size or demobilized earlier than others. The IMT Leader and IMT group will remain active until the entire Level 2 response is terminated.

Level 1
A Level 1 response is terminated by the ERG Leader in consultation with the Exceed Superintendent/Supervisor.

Level 2
When CHPL is the Combat Agency, the decision to terminate a Level 2 or Level 3 spill response is taken by the IMT Leader in consultation with NOPSEMA, State CAs and experts from other bodies. CHPL will consult all affected stakeholders throughout the spill incident to discuss and agree on termination criteria.

For spill clean-up operations in state-based jurisdictions, termination of response will be taken by the respective State IC.

Table 15-1: Oil Spill Response Termination Criteria

Oil Spill Response Strategy	Termination Criteria
Source Control	Termination criteria varies according to incident and the spill level: Level 1: Spill source isolated. Level 2: Vessel fuel tank is secure (tank rupture) or Bunkering Pump has been shutdown (bunkering)
Monitor & Evaluate	No visible sheen (in daylight) i.e. no observed rainbow or metallic sheen, discontinuous or continuous true oil color can be detected as defined by the Bonn Agreement Oil Appearance Code and no visible wax accumulations are present on the sea surface.
Chemical Dispersion	Dispersant efficiency no longer provides a net environmental benefit as assessed through the NEBA process.
Containment and Recover	Weir skimmers are recovering <10% hydrocarbon by volume. Oleophilic skimmers are recovering <50% hydrocarbon by volume. Entrapment in booms is no longer effective because of sea states. The observed trajectory of the oil indicates that the slick is heading away from environmental sensitivities and the Australian coastline.

Oil Spill Response Strategy	Termination Criteria
Protect and Deflect	The spill is no longer observable to human observers. All oil has impacted shorelines and is unlikely to be refloated. Trajectory indicates hydrocarbons are moving away from environmental sensitivities and coastlines; there is no risk to sensitive resources or the oil slick has gone out to sea and is beyond the range of response options and is likely to return. Site characteristics preclude safe or effective deployment protection and deflection strategies. Slick thickness and characteristics mean that protection/deflection booms will not be effective as determined by the NEBA. NEBA concludes that that continued activity will not produce any net environmental benefit. NEBA has been signed off by State IC.
Shoreline Clean-up	Independent scientific advice provided as part of the OSMP indicates that further cleanup activities are unlikely to materially decrease lasting hydrocarbon impacts on environmental sensitivities. The decision to cease shoreline clean-up will be made in consultation with the State Control Agencies (e.g. DOT).
Oiled Wildlife	Is discontinued when all affected/recovered animals are cleaned and rehabilitated as advised by relevant expert bodies.

15.2 CHPL IMT TERMINATION

15.2.1 Incident Control

The response will be terminated when all field response operations have ceased and all equipment is recovered, cleaned and returned to its source.

Support personnel undertaking functions such as finance, may continue until all claims are processes and final costs are determined.

15.2.2 Planning

The size and composition of the planning section will vary in accordance with the needs of the response and planning personnel will stand-down as the operations cease activity.

After the cessation of the response, some planning personnel may still be required to:

- Assist in the post-spill response compilation of data;
- Assist the IMT Leader in any post-spill reporting; and
- Coordinate post-spill monitoring as required.

15.2.3 Operations

Field operations will cease upon the announcement of response termination. However, individual components may be terminated at different times. The conditions under which this may occur are summarized in **Table 16.1.**

15.2.4 Logistics

The logistics function will continue until all equipment is recovered, cleaned and returned to its source and transport of waste to its final destination has been arranged.

15.2.5 Finance and Administration

Most units in this section will terminate at the same time as Logistics, Planning and Operations. The Finance unit will continue, at a reduced level, until all claims are processed and costs are determined.

15.3 STAND-DOWN PROCEDURES

Incident Control

Upon conclusion of the spill activity, the following tasks will be undertaken by the IMT Leader (and delegates);

- Advise all relevant contractors and CHPL personnel;
- Advise all relevant government authorities;
- Prepare detailed reports on the response activities and outcomes and collate all documents for secure storage and/or submission to regulators;
- Undertake an inventory of consumables and prepare accounts;
- Arrange for the return of equipment;
- Arrange for the refurbishment of equipment;
- Conduct an investigation into the cause of the incident and report to relevant authorities; and
- Assess environmental monitoring requirements.

Return of Equipment

Upon completion of the oil pollution response operation, the IMT Leader (or delegate) will:

- Arrange recovery of all equipment and unused materials;
- Ensure that all equipment is cleaned, to the extent that available facilities allow; and
- Ensure that all equipment is returned to the owner by the quickest possible means (having regard to costs).

Servicing of Equipment

Upon its return to the owner, equipment shall be thoroughly serviced or replaced in accordance with equipment maintenance schedules prior to being stored.

Debrief

The IMT Leader will hold a post-spill debriefing for any spill for which a response was activated. De-briefing should address:

- Spill causes (if known);
- Speed of response activation;
- Effectiveness of tactics and strategies;
- Equipment suitability;
- Health and safety issues (if any);
- Communications;
- Integration of OPEP and procedures with other agencies; and
- Lessons learned for implementation in future responses.

Incident Report

The CHPL Project Manager may request the preparation of a formal Incident Report. The contents of this should follow the outline of the debriefing, or another format as specified.

Review of OPEP

Following any activation of this OPEP it will be fully reviewed and updated in accordance with the lessons learned from the response and any deficiencies identified in the plan.

Marine Response

Upon receipt of response termination the IMT will ensure that:

- All equipment is recovered and cleaned;

- All vessels return to their respective berths;
- All personnel are accounted for;
- Equipment is safely offloaded and transported to a site for cleaning or repair;
- All equipment returned is logged;
- All equipment is returned to the correct owner/ location.

Shoreline Response

The IMT Leader (or delegate) will ensure that:

- All equipment is retrieved and stowed away;
- All equipment is retrieved and returned to the relevant location for cleaning and redistribution;
- Any equipment not collected is secured;
- All clean-up team members are transported back to the contractor's base for demobilization; and
- All shorelines are left free of litter or other refuse.

16 OPERATIONAL AND SCIENTIFIC MONITORING

16.1 SCOPE

Operational and post spill monitoring (scientific) to be undertaken to assess for environmental impacts in the event of a Level 2/3 spill is defined in the OSMP (Doc No: SLN-CHP-60-RG-RA-0002). This document should be consulted for this detail. **Table 16-1** provides a summarized version of the operational or scientific study protocol, its scope and objectives and its implementation trigger.

Note that in the event on an incident impacting on State Waters, CHPL will work with the state to provide monitoring to the satisfaction of the state. For Victoria, DOT will coordinate the whole of government advice on the focus, scope and duration of the program.

Table 16-1: Operational & Scientific Monitoring

Operational Monitoring

Study No:	Aspect	Content
OM01	Title	*Oil Spill Surveillance and Reconnaissance*
	Objectives	Module OM1 aims to provide regular on-going surface or aerial surveillance of a Level 2 or Level 3 oil spill to inform spill modelling, inform the NEBA, and plan response activities and scientific monitoring. This involves: • Collection of relevant weather and sea state data to inform OSTM; • Assess colour, consistency, distribution and location of surface oil slicks; • Track the location, extent and thickness of the surface oil slick to validate and inform OSTM; • Determine oil type, and weather conditions (sea currents, wind and temperatures); • Collect relevant weather and sea state data to inform OSTM;. • Surveillance and tracking of the surface oil slick to gain situational awareness of the spill.
	Implementation Trigger	On Level 2/3 Spill Incident (MDO or Crude Oil)
OM02	Title	*Oil Spill Movement Prediction*
	Objectives	Module OM2 aims to predict the fate and behaviour of a Level 2 or 3 spill to guide the management and execution of response operations. This will involve: • Using daily 'quasi-real-time' computer based forecasting of the movement, distribution and weathering of spilled oil once the nature of the spill, ambient weather and sea state conditions are known. • Identifying sensitive receptors at risk of hydrocarbon exposure
	Implementation Trigger	On Level 2/3 Spill Incident (MDO or Crude Oil)
OM03	Title	*Assessment of Hydrocarbons in Marine Waters including monitoring for Chemical Dispersant and Fate*

Study No:	Aspect	Content
	Objectives	In the event of a spill surface or aerial surveillance (OM01) may not provide sufficient data to adequately inform spill responses or scientific monitoring such as: • The need for application of dispersants and their effectiveness once applied. • The need for, and termination point of, active spill management; • The nature of Type II monitoring for "*estimation of potential environmental damage assessments" (AMSA, 2003)* ; and • Behaviour of entrained and dissolved hydrocarbons in the water column. Module OM3 aims to provide a rapid assessment of the presence, quantity and character of dispersed hydrocarbons in marine waters as they weather to inform spill responses. This will involve: • Sample collection from aboard a marine survey vessel. • Acquiring baseline data on hydrocarbon content of marine waters through sampling and analysis following a spill.
	Implementation Trigger	Level 2 or 3 oil spill event (MDO or Crude Oil)
OM04	Title	*Monitoring of seafood quality (taint and fisheries closures)*
	Objectives	Fish exposed to hydrocarbons in the water may become tainted and unsuitable and / or unattractive for human consumption, potentially affecting commercial fisheries by making the product unsaleable. In some cases mandatory closure of fisheries may be required. Module OM04 aims to determine whether fish taint has or has not occurred as a result of a significant spill. This will involve: • Determining the extent and level of hydrocarbon contamination or tainting in fish / shellfish. • Determining any mortality of species and any fish kills during the spill. • Determining if seafood / fish from the area meets statutory limits for hydrocarbon residues and is marketable. • Providing regulatory agencies, fisheries managers and spill responders with information to assist them with evaluation of likelihood to contaminate seafood; and • Assisting in decision making to restrict, ban, close, re-open a fishery
	Implementation Trigger	Level 2 or 3 oil spill event (crude oil) & where OM03 identifies a concentration above 250ppb.
OM05	Title	*Wildlife Surveys Marine Mega-fauna and Seabirds (rapid assessment)*
	Objectives	Module OM05 aims to provide a rapid assessment of affected and potentially affected fauna in during a spill to inform spill responses. This will include fauna whose behaviour makes them particularly susceptible to exposure to surface oil such as shorebirds, marine mammals (whales, dolphins, seals, etc.), marine reptiles and seabirds. This will involve: • Identifying marine mega-fauna and bird populations at risk from the spill based upon oil spill trajectory and surveillance monitoring. • Evaluating the potential for impact on marine mega-fauna and coastal bird populations. • Evaluating impact of spill response options; • Assessing and document mortality of marine mammals and birds during spill and operational response activities
	Implementation Trigger	Level 2 or 3 oil spill event (Crude oil spill). Initiated on Level 2 MDO spill for shoreline birds only.
OM06	Title	*Modelling of hazardous zones, vapour plumes and air quality near the release site for OHS purposes*

Study No:	Aspect	Content
	Objectives	In the event of a hydrocarbon spill, people will need to be deployed on site for monitoring and potentially clean-up operations. They may be exposed to a range airborne contaminants, both from crude oil itself and from associated clean-up activities (e.g. addition of dispersants). Module OM06 aims to model and monitor air quality for the protection and safety of human health to inform health and safety management during the spill response. This Module will involve: • Modelling of potential zones of hazard; • Identifying any hazards from airborne contaminants to spill response workers; • Personal, direct and bulk monitoring of airborne contaminants; and • Laboratory analysis of samples.
	Implementation Trigger	Level 2 or Level 3 oil spill event (crude oil spill).
OM07	Title	*Monitoring of oil property weathering and behaviour*
	Objectives	Information about the weathering and behaviour of the oil in the water provides essential information to assist the prediction of the fate of the spill such that responses can be appropriate to the spill. As part of the response it is important to determine the physical and chemical properties of crude as it weathers to characterise temporal decrease in toxicity to: ▪ Provide operational data/information to support and inform response planning and operations and monitor the spill response; ▪ Implement operational monitoring in accordance with the OSMP to identify sensitivities at risk of hydrocarbon exposure, inform the Net Environmental Benefit Analysis (NEBA) and identify which sensitivities require scientific monitoring.
	Implementation Trigger	Level 2 or Level 3 crude oil spill event (crude oil spill).
OM08	Title	*Shoreline Assessment (SCAT)*
	Objectives	Where oil is predicted to reach the coastline, data on the physical, geological and biological character of shoreline will be needed. Where the spill has reached the shoreline, information on the nature and extent and nature of shoreline oil accumulation will also be required. Module OM08 aims to: • Gather physical, biological and dynamic data on shorelines predicted to be hit by a spill before it reaches land, to predict oil behaviour (persistence, burial, distribution) and thereby determine the most suitable response and clean-up methods; and • Assess shorelines that are already affected for oil distribution to gauge the likely the success of clean-up methods by utilising SCAT. This will involve: • Undertaking surveillance to identify affected areas • Determining the characteristics and distribution of the oil on the shoreline following impact to predict the potential for oil persistence and / or natural removal and aid a NEBA for shoreline clean up; and • Determining the effectiveness of shoreline response strategies and provide feedback to Operations/IMT.
	Implementation Trigger	For a Level 2 or Level 3 Oil Spill (Crude Oil) where shoreline impacts are predicted from OM01 – Aerial Surveillance and Reconnaissance & OM02 – Oil Spill Movement Prediction.

Scientific Monitoring

Study No:	Aspect	Content
SM01	Title	*Shoreline and Inter-tidal Benthic Habitat Monitoring*
	Objectives	Module SM01 aims to assess long-term environmental effects on shoreline and intertidal benthic communities resulting from an oil spill (i.e. assess the extent of damage and measure the degree of recovery in benthic communities, where possible). This will involve: ▪ Establishing a baseline from existing sources and reactive baseline studies where possible; ▪ Undertaking preliminary sampling to establish effects of oil on intertidal communities ▪ Monitoring the distribution and status of the different shoreline and coastal habitats present; ▪ Collecting quantitative data on range of shoreline and intertidal habitats and organisms at risk or that have been exposed to oil; ▪ Detecting and quantifying lethal and where appropriate sub-lethal impacts on these habitats in comparison to appropriate control sites; and ▪ Monitoring subsequent recovery of shoreline and intertidal benthos.
	Implementation Trigger	Study will be initiated for a Level 2 MDO and Level 2/3 Crude Oil Spill if: • Module OM01 and/or Module OM02 shows potential for shoreline hydrocarbons accumulation above 100g/m^2; • Module OM01 and / or Module OM02 shows potential for shoreline hydrocarbons accumulation at mangroves or saltmarsh above 1000 g/m^2 ; and / or • Modules OM03 and OM08* indicate that oil has reached the shoreline or intertidal zone at entrained phase levels above 70ppb. * Not applicable to MDO spill.
SM02	Title	*Coastal Bird Population Monitoring*
	Objectives	Module SM02 aims to determine the short-term or long-term effects of a spill on coastal and shorebird populations through a shorebird and seabird population monitoring study, which can result from: • Direct contact with oil in the water or on shore; • Indirect transfer of oil to eggs from contaminated plumage. • Ingestion during foraging or eating contaminated prey. This will involve: • Quantifying and assessing impacts on coastal bird populations including abundance, mortality, sub-lethal effects, sickness and oiling. • Evaluating if oil or spill response activities were the cause of the observed impacts. • Quantifying the recovery of key behaviour and breeding activities of shorebird and other coastal bird populations over time with respect to reference sites. • Informing any necessary restoration or remediation activities.
	Implementation Trigger	Study will be initiated for Level 2 MDO and Level 2/3 Crude Oil spill if: • Module OM01 and OM02 show shoreline impacts; and • Module OM08 indicates a shoreline accumulation of >100g/m^2 at sensitive breeding areas/colonies; and • Module OM05 indicates that indicator fauna breeding areas/colonies have been significantly impacted by a hydrocarbon spill.
SM03	Title	*Hydrocarbons in sub-tidal and inter-tidal Marine Sediments*

Study No:	Aspect	Content
	Objectives	Module SM03 aims to determine the level of hydrocarbons, other oil compounds (i.e. PAH and TPH) and metals in sub-tidal and intertidal sediments to determine the impact and persistence of contamination resulting from a spill. This will involve: • Establishing a baseline from existing sources and reactive baseline studies where possible. • Collection, transport and analysis of sediment samples to identify reactive baseline for hydrocarbons in sediments. • Routine collection, transport and analysis of sediment hydrocarbon data in marine sediments during the hydrocarbon release and for 3 months after the cessation of hydrocarbon release. • Assessing of impact of hydrocarbons in marine sediments
	Implementation Trigger	Study will be initiated for a Level 2 MDO and Level 2/3 Crude Oil Spill if: • Module OM01 and / or Module OM02 shows potential for shoreline hydrocarbons accumulation above 100 g/m^2 ; and / or • Shorelines have been verified as being impacted via OM08* (SCAT). * Not applicable to MDO Spill
SM04	Title	*Sub-tidal Benthic Habitat Monitoring*
	Objectives	Module SM04 aims to assess long-term environmental effects on sub-tidal benthic habitats and communities which may have resulted from an oil spill (i.e. assess the extent of damage and measure the degree of recovery in benthic communities, where possible). This will involve: • Undertaking benthic surveys to determine a reactive baseline and establishment of sub-tidal benthic habitat monitoring sites. • Undertaking benthic surveys to quantify the distribution, abundance and community composition of benthic marine organisms and demersal fisheries in soft sediment and hard substrate habitats. • Undertaking routine benthic monitoring during and after cessation of the hydrocarbon release. • Quantifying the level of exposure of affected communities and habitats. • Assessing impact of hydrocarbon release on sub-tidal benthic habitats
	Implementation Trigger	Applicable to a Level 2 MDO or Level 2/3 Crude Oil Spill. The Principal Investigator will implement Module SM04 if entrained hydrocarbons exceeding 70 ppb at depth (i.e. > 15 m) are predicted by Module OM02 or measured by OM03. If the modelling shows concentrations at the entrance to the estuary then further investigation of water quality will occur and if the estuaries waters contains entrained hydrocarbons at a level exceeding 70 ppb or at 1000 ppb if only seagrass are likely to be exposed. Not-withstanding this, the Principal Investigator may implement OM04 at any point during the response to target specific areas of concern.
SM05	Title	*Eco-toxicity of oil and oil/dispersant mixtures*
	Objectives	Study aims to provide quantitative measures of the ecotoxicology of oil and oil/dispersant mixture to determine the effects of the oil or oil/dispersant mixture on marine fauna: This information will be used to: • Determine the toxicity of the oil and its subsequent contribution to changes; • Reduce the range of uncertainty of impacts to fauna, initiation and termination criteria monitored by other scientific monitoring modules; • Incorporate eco-toxicological data into the oil spill trajectory model to provide a more accurate assessment of predicted impacts.

Study No:	Aspect	Content
	Implementation Trigger	Study will be implemented for a Level 2/3 crude oil spill if: • Module OM01 and / or Module OM02 predicts surface oil >10g/m^2 thickness will reach the shoreline or intertidal zone, or • Module OM01 and / or Module OM02 predicts shoreline accumulation of oil in excess of 100g/m^2.
SM06	Title	*Long term impacts on commercial/recreational fisheries*
	Objectives	A spill and /or spill clean-up has the potential to impact upon commercial and recreational fisheries beyond the actual spill via a number of pathways such as physical contamination and disturbance, toxic effects and by disrupting business activity. Module SM06 aims to provide a semi-quantitative longer-term assessment of whether commercial and recreational fisheries have been impacted by a spill based on catch. This will involve: • Determining the catch composition of species in each of the main fisheries following exposure to the spill; • Summarising commercial catch and effort data post spill and compare to pre-existing (baseline) information State and Commonwealth government sources; and, • Calculate catch-per-unit effort for fish/shellfish species to determine any change in abundance
	Implementation Trigger	Following a Level 2 or Level 3 crude oil spill incident where: • OM03 indicates entrained hydrocarbons are present at concentrations greater than 70ppb; and • SM05 predicts short-term impacts to pelagic fish species.
SM07	Title	*Long term impacts to Seals*
	Scope	Oil spills have the potential for long-term impacts upon fauna. Studies will assist in understanding whether these impacts (direct and indirect) have resulted in changes to populations. Module SM07 aims to assess and monitor oil impacts to seal populations. This will involve: ▪ Establishing the baseline information on seal populations at identified control and impact sites by collation of existing data from a variety of existing studies; ▪ Monitoring changes to population dynamics (pup counts, breeding success, population changes over time) at identified control and impact sites; ▪ Assess the impact of a hydrocarbon spill on indicator seals by analysing pre-and post-data on population sizes at control and impact sites.
	Implementation Trigger	Following a Level 2 or Level 3 crude oil spill incident where: • Module OM01 indicates shoreline accumulation of >100 g/m^2 at sensitive breeding areas/colonies.

16.2 RESOURCES

Operational and scientific monitoring service providers (i.e. resources nominated in Table 16-1) include organizations which contain specialist environmental technical capabilities. CHPL in conjunction with GHD has prepared the OSMP (Doc No: SLN-CHP-60-RG-RA-0002).

CHPL will contractually engage a primary support agency for operational and scientific monitoring activities. Within the OSMP specific resources are nominated to fulfil principal investigator and scientific monitoring personnel.

In the event of a Level 2/3 spill event, the primary contractor callout (24/7) shall be in accordance with the WSH-3 Decommissioning Program Mobilization Plan.

Additionally, CHPL holds a direct contract with RPS-APASA for oil spill trajectory modelling. This contract allows for dispersed/dissolved phase monitoring in accordance with EPBC Referral 2013/6973 (West Seahorse Development) requirements. RPS-APASA callout (24/7) can be initiated via the APASA authorizing officer.

Lists of Vessel and Aircraft available to participate in operational and scientific monitoring will be collated prior to operations commencement.

17 OPEP RESPONSE PREPAREDNESS

The CHPL Project Manager is responsible for ensuring this OPEP is reviewed and updated in accordance with the triggers outline in this section, contracts are in-place to activate necessary resources, contact/notification numbers are routinely checked and verified; ongoing consultation with stakeholders is undertaken and staffing details remain adequate and current.

17.1 RESOURCES

The WSH-3 Decommissioning Campaign spill risks have been summarized in **Section 5.1** and competency levels of personnel participating in oil spill response activities have been detailed in **Table 4.1** (IMT Minimum Competencies) and **Section 6** to **Section 12** (Field Deployment Crew competencies).

CHPL will leverage existing contracts, memberships and MOUs to provide material, equipment, resources and services to support oil spill response activities. Additional material, equipment, resources or services that cannot be provided by incumbent contracts or agreements will be engaged under Purchase Order conditions or administrative support will put contracts in place.

There are a number of service providers identified in this OPEP who supply critical items or services to oil spill response. These responders include:

Response:

- Exceed Australasia (CHPL IMT Resources);
- AMOSC (Oil Spill Response Organization);
- AMSA (Oil Spill Response Organization – NATPLAN resources);
- TBA (Scientific Monitoring Service Providers);
- RPS-APASA (Specialized Modelling Services);
- Waste Management Contractor (*anticipated Contract award 4Q2024-1Q2025);*
- Aviation Contractor (*anticipated contract award 4Q2024-1Q2025);*
- Marine Vessel Contractor (*anticipated contract award 4Q2024-1Q2025*);
- National Transport Carrier (*anticipated contract award 1Q2025-1Q2025).*

Source Control:

- Well Control Specialist (*anticipated contract award 4Q2024-1Q2025);*
- Salvage/Debris Removal Specialists (*anticipated contract award 4Q2024-1Q2025*)

Through contract/membership/MOU provisions with these organizations, they are aware of their roles and responsibilities in an oil spill response incident. These organizations have been selected based upon their skills to fill the nominated roles and responsibilities within this OPEP.

Testing of preparedness to respond to an oil spill event during the Decommissioning Campaign will include drills/oil spill response exercises and auditing of service functions. These activities are detailed in sections below.

17.2 OPEP DRILLS/EXERCISES

It is CHPL's policy to provide direction, education and training to ensure that all employees and contractors understand their required behaviours and accountabilities; and drive HSE improvements by setting expectations and objectives and reviewing, monitoring and auditing performance against those objectives.

The CHPL Project Manager will ensure the OPEP testing and drills identified in **Table 18-1** to test this OPEP, the response arrangements between CHPL and third party oil spill service providers and regulators; to assess communication processes, the ability of third parties to respond to an incident and the competency of available responders. Records of all drills and exercises undertaken (including personnel participating) will be stored in the CHPL document management system, Sharepoint, in accordance with *the Project Control Requirements for Contractors Procedure* (WSH-HPB-10-PC-PR-0001).

Level 1 spill exercises, on board the *Vessel*, will be recorded on the daily log with a drill debrief and critique report completed within 24hrs of the exercise. For exercises undertaken in conjunction with the WSH-3 Decommissioning Campaign, corrective actions/opportunities for improvement will be entered into the management system and status reports of the open corrective actions will be forwarded to the CHPL Project Manager on a routine basis. The CHPL Project Manager will also enter these items on the CHPL Action Tracker System and is responsible for monitoring until closure.

Observers will assess (i.e. audit) Level 2/3 OPEP exercises and a 'lessons learned' session will be held at the completion of these exercises. Corrective actions and opportunities for improvement as agreed in the lessons learned session will be entered into the CHPL Action Tracker System and all corrective actions will be monitored to closure by the CHPL Project Manager. Lessons learned will be used to improve the response strategy and response arrangements.

Table 17-1: Drilling Campaign OPEP Preparedness Testing & Exercises

Test	Drill/Exercise	Objective/Purpose	Timing
1	Vessel (Level 1) Spill Plan Tested: Vessel SOPEP	Test the on-board response capabilities of the Vessel and support vessels in oil spill response to: • Verify communication systems; • Confirm accuracy of Information; • Demonstrate ability to respond.	Quarterly
2	Contact Number Verification	Test contact numbers. Purpose is to maintain contact numbers are current.	2 monthly

Test	Drill/Exercise	Objective/Purpose	Timing
3[78]	Vessel (Level 2/3) Spill Plan Tested: OPEP Desktop Exercise	**Part 1:** Objective: Test the procedures to alert and call-out response teams including the Vessel, IMT and critical service providers including regulators. Purpose is to test communication systems, availability of personnel, evaluate travel time for supporting resources and speed at which travel arrangements can be made, and assess the ability to transmit information quickly and accurately. **Part 2:** Objective: Test the ability of the IMT including AMOSC to identify and agree initial response strategy for spill scenario; identify the necessary resources and the required implementation plan. Purpose is to test IMT management knowledge and capability and ensure personnel are familiar with roles and responsibilities. **Part 3:** Objective: Test CHPL crisis management arrangements, resource availability, response time of critical response providers and management arrangements between CHPL/DTPLI during a Level 2/3 spill incident. Purpose is to demonstrate spill response management and capabilities, test integration of roles of different parties (CHPL and regulators) and test overall incident management aspects	Prior to the commencement of operations.

Table 17-2: Preparedness Performance Outcomes

Test	Performance Outcome	Performance Standard	Measurement Criteria
1	The Vessel maintains preparedness to effectively respond to a Level 1 spill event.	The Exceed Supervisor and AHTS Vessel Masters undertake the following activities to test preparedness for a Level 1 spill incident: • SOPEP Drills test spill-related incident quarterly. • The response is assessed for effectiveness and a drill debrief identifies opportunities for improvement. • Improvement actions are implemented by the Vessel Master.	Quarterly drill debrief and critique report is completed within 24hrs of the exercise which is held for a spill scenario. Records verify that improvements actions are implemented by the OIM.
2	Test contact numbers.	All contact numbers are tested to confirm suitability.	Notification records verify contact numbers are correct.

Test	Performance Outcome	Performance Standard	Measurement Criteria
3	Desktop exercise demonstrates that: a. Communication and notification pathways are correct, and resources are ready to respond b. CHPL can agree and implement response strategies for a defined scenario; and c. Desktop exercise demonstrates that CHPL/ DOT can effectively communicate/interact to respond to a Level 3 spill response incident.	1) The Project Manager ensures that a Notification Exercise is undertaken and outcomes identify: a) Notification pathways are correct; b) Personnel as nominated in the OPEP are available; c) Travel arrangements for personnel meet timeframes nominated in the OPEP; d) Spill information is received and documented by IMT. 2) The IMT for a given scenario identifies: a) Response strategies to be implemented; b) Resourcing requirements and resourcing provider; c) Implementation methodology to respond to a Level 3 spill. 3) CHPL for a given scenario demonstrates: a) Hibiscus Petroleum CMT is activated and functional and supporting Project Manager with requested information; b) Response strategies to be implemented have been agreed	Exercise report verifies that Desktop exercise has been held and the response has been assessed against performance standard criteria.

17.3 AUDIT

CHPL utilizes the following assurance processes to verify the capability of its third party service providers:

- AMOSC resources are audited twice yearly by member associations to ensure that oil spill response capabilities are maintained. Additional testing through drills and exercises verify AMOSCs response capabilities.
- AMSA ensures that National Plan equipment under its control is maintained in an efficient working condition through an annual equipment audit program which verifies the existence, operational readiness of AMSA equipment and that planned maintenance is conducted in accordance with manufacturer requirements.

Contract Award: CHPL prior to contract award for critical contractors shall verify their response capabilities with respect to the requirements of this OPEP.

Drills/Exercises: CHPL will verify, via desktop audit, the systems and procedures utilized by oil spill support contractors (AMOSC, Exceed, TBA, AMSA) during Test 3 and identify any deficiencies as it relates to oil spill management. At the conclusion of the audit opportunities for improvement and/or deficiencies will be noted and discussed with the respective supplier and corrective actions agreed for implementation. Modifications to the OPEP as a result of corrective action implementation will be assessed for revision trigger requirements under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.*

17.4 ONGOING CONSULTATION

The WSH-3/Wardie-1 Non-production Operations Environment Plan (Doc CHPL-WSH3-HSEQ-PLN-001) *Section 8* provides details of Stakeholder consultation undertaken with respect to this OPEP and should be consulted for feedback comments and on-going consultation.

The CHPL Project Manager is responsible for ensuring on-going consultation is undertaken.

17.5 DOCUMENT REVISION AND REVIEW

The CHPL Project Manager is responsible for ensuring this OPEP remains valid until decommissioning activity at the WSH-3 location is complete and the *Vessel* has moved from location.

Any revisions to this OPEP will be undertaken in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. Trigger thresholds for an EP revision include:

- Inclusion of a new activity;
- If there is a significant modification or new stage to an activity;
- If a significant new environmental impact or risk, or significant increase in existing environmental impact or risk is identified for the WSH-3 Decommissioning Campaign;
- If there is a series of new environmental impacts or risks or a series of increases in existing environmental impacts or risks, which when taken together, results in a significant new environmental impact or risk; or a significant increase in existing environmental impact or risk no provided for in the Environment Plan; or
- If there is a change in titleholder which results in a change in the manner in which environmental impacts and risks is managed.

Where changes to the OPEP result from contract finalization, corrective action management implementation, routine information updates (i.e. contact details change), or other items; the WSH Project Manager is responsible for ensuring changes are assessed against legislative revision criteria (above), and where necessary, the EP/OPEP submitted to NOPSEMA as a formal revision. For changes which do not trigger a formal revision, internal revisions to this document will be distributed to Controlled Copy holders in accordance with the CHPL *Management of Change Procedure.*

This document is maintained current on the CHPL Sharepoint System.

18 REFERENCES

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APPENDIX A: NOTIFICATION AND REPORTING FORMS

Includes:

- **POLREP**
- **SITREP**
- **NOPSEMA REPORTABLE INCIDENT REPORT**

Pollution Report (POLREP)

Location:	POLREP Reference:
Date of Incident:	Time of Incident:
Control Agency:	Statutory Agency:
Company:	Sender Name:
Contact: (mobile)	Email:

PHONE NOTIFICATIONS		
For all spill incidents from the *West Telesto* notify the following agencies by phone within two hours of the Level incident being reported.		
AGENCY	**PHONE**	**Tick when done**
Spills >80 litres: National Offshore Petroleum Safety and Environment Management Authority (NOPSEMA)	08 6461 7090	
Level 2 Spill: Department of Transport, Planning and Local Infrastructure (DTPLI) – Emergency Risk & Resilience Division – Duty Watch Officer 24/7	0409 858 715	
Level 3 Spill: Transport for NSW (24hr Pager)	02 9962 9074	
Level 3 Spill: Tasmanian EPA (24hrs)	1800 005 171	

EMAIL NOTIFICATIONS		
For all incidents the POLREP must be emailed to the following Government agencies.		
AGENCY	**EMAIL**	**Tick when done**
Spills>80litres: NOPSEMA	submissions@nopsema.gov.au	
Spills>80litres: National Offshore Petroleum Titles Administrator (NOPTA)	reporting@nopta.gov.au	
Spills>80litres: Department of State Development Business and Innovation (DSDBI)	Operational.reports@dsdbi.vic.gov.au Aaron.defina@dsdbi.vic.gov.au	
Spill having potential to impact on Victorian State Waters including Level 2 Spills (& above) : DTPLI	semdincidentroom@transport.vic.gov.au	
Level 3 Spill: Transport for NSW	shipping@transport.nsw.gov.au	
Level 3 Spill: Tasmanian EPA	Incidentresponse@environment.tas.gov.au	

ADDITIONAL PHONE OR EMAIL NOTIFICATIONS		
List any additional notifications and the method used.		
AGENCY	**PHONE / EMAIL**	**Tick when done**
AMSA Environment Protection	rccaus@amsa.gov.au	

Location of incident (include coordinates):
Source and Status of spill (i.e. has discharged stopped):
Description of incident (provide as much detail as possible at this time):
Cause of incident (if known):
Type of pollutant (if known):
Quantity of pollutant spilt (litres / tonnes) (if known):
Is the spill confirmed? (Yes / No) (If Yes, by whom):
Initial response actions underway (provide as much detail as possible at this time):
Current sea conditions:
Current weather conditions:
Other information:

Marine Pollution Situation Report (SITREP)

Incident Name:	SITREP No.:
Date Prepared:	Time Prepared:
Agency:	Reporting Officer:
Role:	Contact: (mobile)

SITREP NOTIFICATIONS		
The SITREP must be emailed to the following Government agencies for Level 2/3 incidents.		
AGENCY	**EMAIL**	**Tick when done**
National Offshore Petroleum Safety & Environmental Management Authority (NOPSEMA)	submissions@nopsema.gov.au	
National Offshore Petroleum Titles Authority (NOPTA)	reporting@nopta.gov.au	
Department of State Development Business and Innovation (DSDBI)	Operational.reports@dsdbi.vic.gov.au Aaron.defina@dsdbi.vic.gov.au	
Department of Transport, Planning and Local Infrastructure (DTPLI)	semdincidentroom@transport.vic.gov.au	
Level 3 Spill: Transport for NSW	shipping@transport.nsw.gov.au	
Level 3 Spill: Tasmanian EPA	Incidentresponse@environment.tas.gov.au	
Additional notifications if any:		

Description of incident and impact:
Weather conditions:
Direction / movement of pollutant:

Actions taken to date:
Current strategies:
Resources available / deployed:
Comments:

NOPSEMA

FORM FM0831

N-03000-FM0831 Revision 6 February 2014

Report of an Accident, Dangerous Occurrence or Environmental Incident

For instructions and general guidance in the use of this form, please see the last page.

Part 1 is required within 3 days of a notified incident.
Part 2 is required within 30 days of notified incident.

What was the date and time of the initial verbal incident notification to NOPSEMA?			
Date		**Time**	
NOTE: It is a requirement to request permission to interfere with the site of an accident or dangerous occurrence. Refer OPGGS(S)R, Reg. 2.49.			
What is the date and time of this written incident report?			
Date		**Time**	

What type of incident is being reported?	*Please tick appropriate incident type*	
Accident or Dangerous Occurrence		Complete parts 1A, 1B & part 2
Environmental Incident		Complete parts 1A, 1C
BOTH (Accident or Dangerous Occurrence AND Environmental Incident)		Complete ALL parts (1A, 1B, 1C , 2)

Please tick all applicable (one or more categories) — *To use electronically: MS Word 2007-10 – click in check box*

Categories *Please select one or more*	Accidents	Death or Serious Injury	☐
		Lost Time Injury ≥3 days	☐
	Dangerous Occurrences	Hydrocarbon release >1 kg or ≥80 L (gas or liquid)	☐
		Fire or Explosion	☐
		Collision marine vessel and facility	☐
		Could have caused death, serious injury or LTI	☐
		Damage to safety-critical equipment	☐
		Unplanned event - implement ERP	☐
		Pipeline Incident	☐
		Well kick >50 barrels	☐
		Other _____	☐
	Environmental Incidents	Hydrocarbon release	☐
		Chemical release	☐
		Drilling fluid/mud release	☐
		Fauna Incident	☐
		Other _____	☐

NOPSEMA — Report of an Accident, Environmental Incident or Dangerous Occurrence

Part 1 A – Information required within 3 days of an Accident, Dangerous Occurrence or Environmental incident				
A	**General Information – all incidents**			
1.	**Where did the incident occur?**	Facility / field / title name		
		Site Name and Location *Latitude/longitude*		
2.	**Who is the registered operator/titleholder or other person that controls the works site or activity?**	Name		
		Business address		
		Business Phone No.		
3.	**When did the incident occur?**	Time and Time Zone		
		Date		
4.	**Did anyone witness the incident?**	Yes or No *If Yes, provide details below*		
	Witness Details	Witness No 1	Witness No 2	Witness No 3
	Full Name			
	Phone No. (Business hours)			
	Phone No. (Home) (Mobile)			
	Email (Business) (Private)			
	Postal Address			
	NB: If more witnesses, copy and insert this section (4) here , and add extra witness numbers appropriately			
5.	**Details of person submitting this information**	Name		
		Position		
		Email		
		Telephone No.		
6.	**Brief description of incident**			
7.	**Work or activity being undertaken at time of incident**			

NOPSEMA Report of an Accident, Environmental Incident or Dangerous Occurrence

Part 1 A – Information required within 3 days of an Accident, Dangerous Occurrence or Environmental incident							
A	**General Information – all incidents**						
8.	What are the internal investigation arrangements?						
9.	Was there any loss of containment of any fluid (liquid or gas)?	Yes or No *If Yes, provide details below*					
		Type of fluid (liquid or gas) *If hydrocarbon release please complete item no.15 as well*	Hydrocarbon ☐ *Please specify*_____ Non-hydrocarbon ☐ *Please specify*_____				
		Estimated quantity *Liquid (L), Gas (kg)*					
		Estimation details	Calculation ☐		Measurement ☐		
			*Please specify*_____				
		Composition *Percentage and description*					
		Known toxicity to people and/or environment	Toxicity to people				
			Toxicity to environment				
		How was the leak/spill detected?	F&G detection ☐ CCTV ☐		Visual ☐ Other ☐		
		Did ignition occur?	No ☐ Yes ☐		Immediate ☐ Delayed ☐		
			If yes, What was the likely ignition source	Hotwork ☐ Spark electrical source ☐ Spark metallic contact ☐ Hot surface ☐ Other ☐			
10.	Has the release been stopped and/or contained?	Yes or No					
		Duration of the release *hh:mm:ss*					
		Estimated rate of release *Litres or kg per hour*					
11.	Location of release	What or where is the location of the release?					
		What equipment was involved in the release?					
		Is this functional location listed as safety-critical equipment?					

NOPSEMA — Report of an Accident, Environmental Incident or Dangerous Occurrence

Part 1 A – Information required within 3 days of an Accident, Dangerous Occurrence or Environmental incident						
A	**General Information – all incidents**					
12.	**Weather Conditions** *Please complete as appropriate*	Ambient temperature C°				
		Relative humidity %				
		Wind speed m/s *NB: for enclosed areas use* Air change per hour				
		Wind direction e.g. from SW				
		Significant wave height m				
		Swell m				
		Current speed m/s				
		Current direction e.g. from SW				
13.	**Hydrocarbon release details** *If hydrocarbon fluid (liquid or gas) was released, please complete this section as well*	System of hydrocarbon release	Process ☐ Drilling ☐ Subsea / Pipeline ☐		Utilities ☐ Well related ☐ Marine ☐	
		Estimated inventory in the isolatable system *Litres or kg*				
		System pressure and size of piping or vessel *diameter (d in mm)* *length (l in m)* *or volume (V in L)*	Pressure MPag			
			Size Piping (d) and Piping (l) or Vessel (V)			
		Estimated equivalent hole diameter *d in mm*				

Part 1 B - Complete for Accidents or Dangerous Occurrences					
B	**Accidents and Dangerous Occurrences information**				
14.	**Was NOPSEMA notified through the dedicated notification phone line?** *Phone No. 08 6461 7090*		Yes ☐	No ☐	
15.	**Action taken to make the work-site safe**	Was permission given by an OHS inspector to interfere with the site?			
		OPGGS(S)R 2.49.	Yes ☐	No ☐	
		Action taken			
		Details of any disturbance of the work site			

NOPSEMA — Report of an Accident, Environmental Incident or Dangerous Occurrence

Part 1 B - Complete for Accidents or Dangerous Occurrences

B — Accidents and Dangerous Occurrences information

16.	Was an emergency response initiated?		Yes ☐		No ☐	
		Type of response	Manual ☐ Automatic alarm ☐		Muster ☐ Evacuation ☐	
		How effective was the emergency response?				
17.	**Was anyone killed or injured?** *Provide details below*		Yes ☐		No ☐	
	Injured Persons (IP)	**Casualty No 1**				
	If different from item 2. Employer name		Employer address			
	Employer phone No.		Employer email			
	IP full name					
	IP Date of birth		Sex	M ☐	F ☐	
	IP Residential address					
	IP Phone No. (Work)		IP Phone No. (Home) (Mobile)			
	IP Occupation/job title		Contractor or Core Crew			
	Details of Injury					

Based on TOOCS (refer last page) Nature of Injury	a. Intracranial injury ☐ b. Fractures ☐ c. Wounds, lacerations, amputations, internal organ damage ☐		a. Burn ☐ b. Nerve or spinal cord injury ☐ c. Joint, ligament, muscle or tendon injury ☐ d. Other _____ ☐	
Part of Body	G1. Head or face ☐ G2. Neck ☐ G3. Trunk ☐ G4. Shoulder or arm ☐		G5. Hip or leg ☐ G6. Multiple locations ☐ G7. Internal systems ☐ G8. Other _____ ☐	
Mechanism of Injury	G0. Falls, stepping, kneeling, sitting on object ☐ G1. Hitting object ☐ G2. Being hit or trapped ☐		G3. Exposure to sound or pressure ☐ G4. Muscular stress ☐ G5. Heat, cold or radiation ☐ G6/7 Chemical, biological substance ☐ G8. Other _____ ☐	
Agency of Injury	1. Machinery or fixed plant ☐ 2. Mobile plant or transport ☐ 3. Powered equipment ☐ 4. Non-power equipment ☐		5/6. Chemicals, materials, substances ☐ 7. Environmental agencies ☐ 8. Human or animal agencies ☐ 9. Other _____ ☐	

NOPSEMA — Report of an Accident, Environmental Incident or Dangerous Occurrence

Part 1 B - Complete for Accidents or Dangerous Occurrences

B — Accidents and Dangerous Occurrences information

	Details of job being undertaken				
	Day and hour of shift	Day *e.g. 5th day of 7 (5 / 7)*		Hour *e.g. 3rd hour of 12 (3 / 12)*	
	NB: If more casualties, please copy/paste this section (19) for each additional casualty and insert here				
18.	Was there any serious damage? *Provide details below*		Yes ☐		No ☐
	Details	Item 1	Item 2	Item 3	
	Equipment damaged				
	Extent of damage				
19.	Will the equipment be shutdown? *Yes or No*				
	If Yes, for how long?				
	NB: If more equipment seriously damaged, please copy/paste this section as required				
20.	Will the facility be shutdown?	Yes or No *If yes provide details below*			
	Facility shutdown	Date		dd/mm/yyyy	
		Time		24 hour clock	
		Duration		days / hours / minutes	
21.	Immediate action taken/intended, if any, to prevent recurrence of incident.	Action	Responsible Party	Completion date *Actual or intended*	
22.	What were the immediate causes of the incident?				

Attachments

Are you attaching any documents?			Yes or No *If yes provide details below*	
No.	ID	Revision	Date	Title/Description

Attachments				
Are you attaching any documents?			Yes or No *If yes provide details below*	
				Insert or delete rows as required

Part 1 C – Complete for Environmental incidents						
C	Environmental Impacts					
23.	What is the current Environment Plan for this incident?	Environment Plan				
24.	Has the incident resulted in an impact to the environment?	Yes or No *If yes provide details below*				
		Incident details *e.g. estimated area of impact, nature/significance of impact*				
		ENVIRONMENTAL RECEPTORS				
		Open ocean ☐ Shoreline ☐ Population Centre ☐ Stakeholders ☐ Other sensitivity ☐ *e.g. conservation area, nesting beach*		Macroalgae ☐ Coral Reef ☐ Benthic Invertebrates ☐ Seagrass ☐ Mangrove ☐		
		Further details				
	Details	Environment 1		Environment 2		Environment 3
	Location of receiving environments *Lat/Long*					
	Date & time of impact					
	Action taken to minimise exposure					
	Specify each matter protected under Part 3 of the EPBC Act impacted					
	NB: If more environments were damaged, please copy/paste this section (Item E3) and add extra data					
25.	Are any environments at risk? *Including as a result of spill response measures*	Yes or No *If yes, provide details*				
		Details *e.g. zone of potential impact*				
		AT RISK ENVIRONMENTS				

NOPSEMA Report of an Accident, Environmental Incident or Dangerous Occurrence

Part 1 C – Complete for Environmental incidents

C Environmental Impacts

		Open ocean ☐ Shoreline ☐ Population Centre ☐ Stakeholders ☐ Other sensitivity ☐ *e.g. conservation area, nesting beach*		Macroalgae ☐ Coral Reef ☐ Benthic Invertebrates ☐ Seagrass ☐ Mangrove ☐	
	Details	**Environment 1**	**Environment 2**		**Environment 3**
	Estimated location of 'at-risk' environments				
	Estimated impact date & time				
	Action required to minimise exposure				
	Specify each matter protected under Part 3 of the EPBC Act at risk				
	NB: If more environments at risk of damage, please copy/paste this section (Item E2) and add extra data				
26.	**Was an oil pollution emergency plan activated?**	Yes or No			
		If yes, what action has been implemented /planned?			
		If yes, how effective is/was the spill response?			
27.	**Was an environmental monitoring program initiated?**	Yes or No			
		If yes, what actions have been implemented and/or planned?			
28.	**Did the incident result in the death or injury of any fauna?**	Yes or No (If yes provide details of species in the table below)			
	Injured fauna	**Species 1**	**Species 2**		**Species 3**
	Species name (common or scientific name)				
	Number of individuals killed or injured	Killed: Injured:	Killed: Injured:		Killed: Injured:
	NB: If more species were injured or killed, please copy/paste this section (Item E4) and add extra data				
29.	**Actions taken to avoid or mitigate any adverse environmental impacts of the incident.**	**Action**	**Responsible Party**		**Completion date** *Actual or intended*
	NB: If more actions, please add extra rows as required				

NOPSEMA Report of an Accident, Environmental Incident or Dangerous Occurrence

Part 1 C – Complete for Environmental incidents				
C	Environmental Impacts			
30.	Corrective actions taken, or proposed, to stop, control or remedy the incident.	Action	Responsible Party	Completion date *Actual or intended*
				NB: If more actions, please add extra rows as required
31.	Actions taken, or proposed, to prevent a similar incident occurring in the future.	Action	Responsible Party	Completion date *Actual or intended*
				NB: If more actions, please add extra rows as required

Attachments				
Are you attaching any documents?			Yes or No *If yes provide details below*	
No.	ID	Revision	Date	Title/Description
				Insert or delete rows as required

NOPSEMA — Report of an Accident, Environmental Incident or Dangerous Occurrence

Part 2 – Information required within 30 days of accident or dangerous occurrence

NOPSEMA acknowledges that in many circumstances a titleholder may not have completed an investigation within 3 days of an accident or first detection of a dangerous occurrence and agrees that these items must be provided within 30 days unless otherwise agreed, in writing with NOPSEMA.
In circumstances where an investigation has been completed within 3 days, and these items are available (supplemented, as required by any attachments) this part should also be completed at that time.

32.	**Has the investigation been completed?**	Yes or No	
	Root cause analysis *What were the root causes?*	Root Cause 1	
		Root Cause 2	
		Root Cause 3	
		Other Root Causes	
	Full report *Describe investigation in detail, including who conducted the investigation and in accordance with what standard/procedure with reference to attachments listed in the 'attachments table' (following) as applicable*		

33.	**Actions to prevent recurrence of same or similar incident**	**Action**	**Responsible Party**	**Completion date** *Actual or intended*

NB: Add or delete rows as appropriate

Attachments (Insert/delete rows as required)

Are you attaching any documents?			Yes or No *If yes provide details below*	
No.	**ID**	**Revision**	**Date**	**Title/Description**

NOPSEMA Report of an Accident, Environmental Incident or Dangerous Occurrence

Instructions and general guidance for use:

1. The use of this form is voluntary and is provided to assist operators and titleholders to comply with their obligations to give notice and provide reports of incidents to NOPSEMA under the applicable legislation.
2. Accidents, dangerous occurrences or environmental incidents can all be reported using this same form.
3. The applicable legislation for incident reporting is:
    a. Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009 [OPGGS(S)R]
    b. Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 [OPGGS(E)R]
    c. (for facilities located in Commonwealth waters, or for facilities located in designated coastal waters, the State or Territory *Petroleum (Submerged Lands) Act* and associated Regulations where there is a current conferral of powers to NOPSEMA.)
4. In the context of this form an incident is a reportable incident as defined under
    a. OPGGSA, Schedule 3, Clause 82.
    b. OPGGS(E)R, regulation 4.
5. This form should be used in conjunction with NOPSEMA Guidance Notes available on the NOPSEMA website:
    a. N-03000-GN0099 Notification and Reporting of Accidents and Dangerous Occurrences
    b. N-03000-GN0926 Notification and Reporting of Environmental Incidents
6. Part 1 requires completion for all incidents; then ALSO complete part 2 if the incident is an accident or dangerous occurrence.
7. NOPSEMA considers that a full report will contain copies of documentary material referenced and/or relied on in the course of completing this form, which may include (but not be limited to) as appropriate: witness statements, management system documents, drawings, diagrams and photographs, third party reports (audit, inspection, material analysis etc.), internal records and correspondence.
8. This form is intended to be completed electronically using Microsoft Word by completing the unshaded cells which will expand as required to accept the information required and the check boxes where relevant (NB: check boxes may appear shaded and have reduced functionality in MS Word versions prior to 2010).
9. The completed version of this form (and any attachments, where applicable) should be emailed to: submissions@nopsema.gov.au or via secure file transfer at: https://securefile.nopsema.gov.au/filedrop/submissions as soon as practicable, but in any case within three days of the incident.

References

NOPSEMA website: www.nopsema.gov.au.

TOOCS – Type of Occurrence Classification System.
The *Type of Occurrence Classifications System, Version 3.0* (TOOCS3.0) was developed to improve the quality and consistency of data. This system aligns with the International Classification of Diseases –Australian Modification (ICD10-AM).
http://www.safeworkaustralia.gov.au/sites/SWA/AboutSafeWorkAustralia/WhatWeDo/Publications/Documents/207/TypeOfOccurrenceClassificationSystem(TOOCS)3rdEditionRevision1.pdf

OPGGS(S)R. Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009. Select Legislative Instrument 2009 No. 382 as amended and made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006.* Commonwealth of Australia.

OPGGS(E)R. Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009. Statutory Rules 1999 No. 228 as amended and made under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006.* Commonwealth of Australia.

NOPSEMA Report of an Accident, Environmental Incident or Dangerous Occurrence

Privacy Notice

NOPSEMA collects your personal information for the purpose of investigating accidents, environmental incidents and dangerous occurrences under the Offshore Petroleum and Greenhouse Gas Storage Act 2006.

NOPSEMA will not use or disclose your personal information for any other purpose without your consent, unless it is required or authorised by law, or relates to NOPSEMA's enforcement activities. Your personal information may be disclosed to the following organisations, entities or individuals:

- individuals who make a request under the *Freedom of Information Act 1982*
- the Australian National Audit Office and other privately-appointed auditors
- other law enforcement bodies (for example, the police or the Coroner)
- NOPSEMA's legal advisors.

NOPSEMA may occasionally be required to disclose information to overseas recipients in order to discharge its functions or exercise its powers, or to perform its necessary business activities.

Information about how you can access, or seek correction to, your personal information is contained in NOPSEMA's APP Privacy Policy at www.nopsema.gov.au/privacy. If you have an enquiry or a complaint about your privacy, please contact NOPSEMA's Privacy Contact Officer on 08 6188 8700 or by email at privacy@nopsema.gov.au.

APPENDIX B: IMT MANAGEMENT FORMS

- **INCIDENT ACTION PLAN TEMPLATE (& SUBPLANS)**
- **OSTM REQUEST FORM**
- **PERSONAL LOG**
- **SITE HEALTH & SAFETY PLAN TEMPLATE**
- **COMMUNICATIONS PLAN**
- **AREA TO BE AVOIDED APPLICATION FORM (NOPEMSA APPROVAL)**

Incident Action Plan (IAP)

Incident Name:	
Date:	Time:
Period From:	Period To:

INCIDENT RESPONSE POLICY
(Overall aim)

OBJECTIVES AND STRATEGIES		
OBJECTIVES (What is planned to be done, in Priority order)		STRATEGIES (Means of accomplishing objective)
1		
2		
3		

OBJECTIVES (What is planned to be done, in Priority order)		STRATEGIES (Means of accomplishing objective)
4		
5		
6		
7		

PREPARED BY		
Name:		Section / Unit:
Role:		
Mobile:	Phone:	Fax:
Email:		

PLAN APPROVAL	
Plan is draft unless signed by Incident Controller	Incident Controller Signature:

Incident Action Plan – Resources at Risk

This Summary Document can be displayed as a Status Board

Incident Name:	Ref No.:
Date:	Time:

Segment / Location	Sensitive Resource / Area	Priority For:	
		Protection	Clean-up

Incident Action Plan – Sub-Plan

Incident Name:	
Section / Unit:	Ref No.:
Date:	Time:
Agency:	Contact: (mobile)

Management Personnel Assigned:
Environmental Impacts / Risks:
Actions to Date:

APPROVAL	
Document is draft unless signed	Functional Unit Officer Signature:

Marine Team Assignments

RESPONSE TEAMS ASSIGNED THIS PERIOD				
TEAM	SECTOR	ASSIGNMENT	SUPERVISOR	Contact No.

ACCOMPANYING RESOURCES ASSIGNED THIS PERIOD		
TEAM	SECTOR	EQUIPMENT

SAFETY (Critical issues relevant to this unit, including warnings, weather, OH&S)

Aviation Team Assignments

RESPONSE TEAMS ASSIGNED THIS PERIOD				
TEAM	SECTOR	ASSIGNMENT	SUPERVISOR	Contact No.

ACCOMPANYING RESOURCES ASSIGNED THIS PERIOD		
TEAM	SECTOR	EQUIPMENT

SAFETY (Critical issues relevant to this unit, including warnings, weather, OH&S)

Shoreline Team Assignments

RESPONSE TEAMS ASSIGNED THIS PERIOD				
TEAM	SECTOR	ASSIGNMENT	SUPERVISOR	Contact No.

ACCOMPANYING RESOURCES ASSIGNED THIS PERIOD		
TEAM	SECTOR	EQUIPMENT

SAFETY (Critical issues relevant to this unit, including warnings, weather, OH&S)

Wildlife Team Assignments

RESPONSE TEAMS ASSIGNED THIS PERIOD				
TEAM	SECTOR	ASSIGNMENT	SUPERVISOR	Contact No.

ACCOMPANYING RESOURCES ASSIGNED THIS PERIOD		
TEAM	SECTOR	EQUIPMENT

SAFETY (Critical issues relevant to this unit, including warnings, weather, OH&S)

Communications Team Assignments (IT, radios, etc.)

RESPONSE TEAMS ASSIGNED THIS PERIOD				
TEAM	SECTOR	ASSIGNMENT	SUPERVISOR	Contact No.

ACCOMPANYING RESOURCES ASSIGNED THIS PERIOD		
TEAM	SECTOR	EQUIPMENT

SAFETY (Critical issues relevant to this unit, including warnings, weather, OH&S)

Waste Team Assignments

RESPONSE TEAMS ASSIGNED THIS PERIOD				
TEAM	SECTOR	ASSIGNMENT	SUPERVISOR	Contact No.

ACCOMPANYING RESOURCES ASSIGNED THIS PERIOD		
TEAM	SECTOR	EQUIPMENT

SAFETY (Critical issues relevant to this unit, including warnings, weather, OH&S)

RPS APASA

OIL SPILL TRAJECTORY MODELLING REQUEST	Email completed form to RPS APASA response staff response@apasa.com.au After sending this request, phone Duty Officer on telephone number provided

Priority of Request ☐ Urgent ☐ Exercise Date and Time of Request:

Incident Name	
Name of requesting person and position in response	Contact telephone number
Email address for model output (preferred method)	Fax number for receipt of model output

☐ Surface oil spill ☐ Sub-surface oil spill (if sub-surface oil spill what is the estimated release depth (m))

Spill Start Date (e.g. 23 08 2000)			Spill start time (spill site location time, 24 hour clock)
Day	Month	Year	

Type of oil spilt or likely to be spilt e.g. *Bunker C, Diesel Fuel, Belida Crude*

Oil Name:

Format of coordinates used	Latitude of spill	Longitude of spill
Degrees, minutes & seconds	° ' "	° ' "
Degrees, minutes & decimal minutes	° . '	° . '
Easting & Northing (Zone)	S/N	E/W

☐ Instantaneous	Amount	(select one) ☐ Tonnes ☐ Cubic Meters ☐ Litres ☐ Barrels				
☐ Continuous	Duration (hours)	Amount (per hour)	☐ Tonnes	☐ Cubic Meters	(select one) ☐ Litres	☐ Barrels
Oil Type Description:						
Latest wind speed at release site (knots) and wind direction Latest current speed at release site (knots) and current direction Sea Temperature at release site (°C)						
NOTES						

DISCLAIMER: While the oil spill model predictions are based on information that RPS APASA considers reliable, the accuracy and completeness of said information cannot be guaranteed. Therefore, RPS APASA, its directors, and employees assume no responsibility and make no warranty or representations as to the accuracy or reliability of the predictions.

Personal Log

Incident Name:		Location:
Team Name:	Function:	No. of Sheets:

TIME	DATE	TO - FROM	TRVE *	NAME	NOTES	ACTION

* T = Telephone, R = Radio, V=Verbal, E=Electronic

Site Safety and Health Plan

Incident Name:	
Operational Period From: (Date / Time)	To:

SITE INFORMATION					
Incident location (include coordinates if known):					
Area:	☐ Ocean	☐ Bay	☐ River	☐ Saltmarsh	☐ Mudflats
	☐ Sandy	☐ Pebbles	☐ Rocky	☐ Cliffs	☐ Mangrove
Use:	☐ Commercial	☐ Industrial	☐ Farming	☐ Public	☐ Governm't
	☐ Recreation'l	☐ Residential	☐ Other		
Command Post	Location:		Phone:		
A map or sketch of the clean-up site is attached showing: ☐ Zone boundaries (exclusion zone, contamination reduction zone, support zone)					
☐ Entry / exit points	☐ Assembly points	☐ Command post	☐ Specific hazards		
☐ First aid equipment	☐ Toilet / hygiene facilities	☐ Eating / resting areas	☐ Equipment storage areas		
☐ Fire extinguishers					

ORGANISATION		
	(Name)	(Mobile / Radio)
Incident Commander:		
Safety Officer:		
Site Supervisor:		
(Other)		

PLAN APPROVAL	
Safety Officer Signature:	Incident Commander Signature:

SITE HAZARD INFORMATION					
Weather Hazards:	☐ Heat	☐ High wind	☐ Tidal change	☐ Thunderstorm	
	☐ Cold	☐ High waves	☐ Sunburn	☐ See attached weather forecast	
Heat stress monitoring and work-rest schedule is required when working in elevated temperatures.					
Hazardous materials present (list, attach Material Safety Data Sheet for each):					
Air monitoring conducted for:					
☐ Lower Explosive Limit	☐ Total Hydrocarbons	☐ Hydrogen Sulphide	☐ Carbon Monoxide	☐ Benzene	☐ Oxygen
Locations where respirator must be used:					
☐ Air purifying respirator - cartridge type:				or ☐ Air supplied respirator	
Other Site Hazards:	☐ Air Ops	☐ Vehicles	☐ Boats	☐ Fire risk	☐ Visibility
	☐ Noise	☐ Wildlife & plants	☐ Overhead / buried utilities	☐ Traps & mud	☐ Confined spaces

TRAINING AND SAFETY BRIEFING
1. All personnel entering a control zone (exclusion, contamination reduction, and support zones) shall receive a site orientation and shall be familiar with the contents of this Site Safety Plan. 2. Safety Briefings will be held daily and prior to beginning a new work operation.

PERSONAL PROTECTIVE EQUIPMENT REQUIRED		
Required PPE for Exclusion / Contamination Reduction Zone		Required PPE for Support Zone
☐ Air Supplied Respirator	☐ Air Purifying Respirator	☐ Safety Glasses
☐ Face Shield	☐ Safety Goggles	☐ Coveralls
☐ Safety Glasses	☐ Hard Hat	☐ Hard Hat
☐ Chemical Protective Clothing	☐ Steel Toed Boots	☐ Steel Toed Boots
☐ Other:		☐ Other:

DECONTAMINATION
Decontamination procedure:

MEDICAL EMERGENCY
First aid and medical evacuation procedure (or ☐ See attached Medical Plan):
Evacuation or escape alarm description:
Emergency escape route and muster area:

Communications Plan

Incident Name:	
Operational Period (Date / Time) From:	To:

BASIC LOCAL COMMUNICATIONS INFORMATION		
ASSIGNMENT	NAME	METHODS OF CONTACT (radio frequency, mobile/phone #, pager, etc)

PREPARED BY	
Name:	Date / Time:

NOPSEMA

FORM FM0912

Application for entry and presence in the area to be avoided

Part 1 – Details of person making the application (vessel *owner* details)

Name:	Date:
Position:	Phone:
Postal Address:	Email address:
Organisation:	(being the *owner*[3] of the vessels listed below)

The vessels listed below will be operated by the applicant (organisation) who: does not own the vessels and has the whole possession and control of the vessels		*OR* These vessels listed below will be operated by the applicant (organisation), who owns the vessels:	

Part 2 – Vessel details (for which vessels is authorisation being sought)

If the vessel is NOT a relevant vessel[4] an application for entry and presence in the ATBA is NOT required

Name	Number	Port of Registry	Relevant Vessel? [4] (Yes/No)

Part 3 – Reason for application (why is authorisation being sought)

Part 4 – Timing (for what period is authorisation being sought)

Commencement date:		Termination date:	

Part 5 – Acknowledgement and sign-off person making application

Acknowledgement

The undersigned acknowledges that if this application is found to be acceptable by NOPSEMA any subsequent authorisation will incorporate conditions that may include, but not be limited to:

(1) The authorisation will only apply to named vessels, ***owned*** by the applicant.

(2) Each vessel must remain in radio contact 24 hours a day while it is located within the area to be avoided.

(3) Each vessel must observe any prescribed petroleum or greenhouse gas safety zones in the area to be avoided.

(4) Each vessel must monitor AusCoast Warnings and Australian Notices to Mariners for offshore operations before the transit is to take place.

(5) Each vessel must participate in the Australian Maritime Safety Authority AUSREP system.

(6) The authorisation will only be valid for a fixed period of time.

Sign-off

Signed:	Date:
Name:	

NOPSEMA

FORM FM0912

Application for entry and presence in the area to be avoided

Instructions for use:

1 This form is intended for use by vessel owners to apply for authorisation for one or more vessels to enter and be present in the area to be avoided.

2 Applicants should complete Parts 1 to 4 before signing Part 5.

3 The completed application form should be emailed to safetyzones@nopsema.gov.au.

Notes:

1 Petroleum safety zones are provided for in Part 6.6 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, with specific provisions for NOPSEMA to authorise a vessel to enter and be present in the area to be avoided are contained in section 618.

2 From NOPSEMA Policy N-04800-0886 (4.4.1):

Pursuant to section 618(1) of the OPGGSA, NOPSEMA shall only consider applications for authorisation for vessels to enter and be present in the area to be avoided made by a vessel owner.

3 Note that as per Section 614 of the OPGGSA:

owner, in relation to a vessel, means:

(a) if the vessel is being operated by a person who:

(i) does not own the vessel; and

(ii) has the whole possession and control of the vessel; the person operating the vessel; or

(b) in any other case-the person who owns the vessel

4 Note that as per Section 614 of the OPGGSA:

relevant vessel means:

(a) a vessel that satisfies the following conditions:

(i) the vessel is registered under the Shipping Registration Act 1981;

(ii) the gross tonnage of the vessel specified in the certificate of registration of the vessel exceeds 200;

(iii) the vessel is not a Government vessel; or

(b) a vessel that satisfies the following conditions:

(i) the vessel is not registered under the Shipping Registration Act 1981;

(ii) the vessel is permitted to be registered under that Act;

(iii) the vessel is not a foreign flag vessel;

(iv) the tonnage length of the vessel equals or exceeds 24 metres (for this purpose, the tonnage length is to be determined in the same manner as it is determined for the purposes of the Shipping Registration Act 1981);

(v) the vessel is not a Government vessel; or

(c) a vessel that satisfies the following conditions:

(i) the vessel is not a vessel to which paragraph (a) or (b) applies;

(ii) the vessel is in the offshore area for the purpose of exploring the seabed or subsoil of the offshore area for petroleum or minerals or for the purpose of exploiting the petroleum or minerals which occur as natural resources of that seabed or subsoil;

(iii) the vessel is not a Government vessel; or

(d) a vessel that satisfies the following conditions:

(i) the vessel is not a vessel to which paragraph (a) or (b) applies;

(ii) the vessel is in the offshore area for the purpose of exploring the seabed or subsoil of the offshore area for a potential greenhouse gas storage formation or a potential greenhouse gas injection site;

(iii) the vessel is not a Government vessel; or

(e) a vessel that satisfies the following conditions:

(i) the vessel is not a vessel to which paragraph (a) or (b) applies;

(ii) the vessel is in the offshore area for purposes relating to the injection of a greenhouse gas substance into, or the storage of a greenhouse gas substance in, the seabed or subsoil of the offshore area;

(iii) the vessel is not a Government vessel.

Privacy Notice

NOPSEMA collects your personal information so that it can administer the OPGGSA and associated regulations. If you do not provide your personal information, NOPSEMA may not be able to process your application.

NOPSEMA will not use or disclose your personal information for any other purpose without your consent, unless it is required or authorised by law, or relates to NOPSEMA's enforcement activities. Your personal information may be disclosed to the following organisations, entities or individuals:

- individuals who make a request under the *Freedom of Information Act 1982*
- the Australian National Audit Office and other privately-appointed auditors
- other law enforcement bodies (for example, the police or the Coroner)
- NOPSEMA's legal advisors.

NOPSEMA may occasionally be required to disclose information to overseas recipients in order to discharge its functions or exercise its powers, or to perform its necessary business activities.

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APPENDIX C: NET ENVIRONMENTAL BENEFITS ASSESSMENT METHODOLOGY

Purpose

Net Environmental Benefit Analysis (NEBA) is a simple tool intended to rapidly assess the risks posed by an oil spill to a specific location as well as facilitate and simultaneously document the decision-making process to most effectively deploy resources and minimise environmental impacts. This provides evidence to justify priority setting and response option selection.

Impacts are ranked from slight - severe and recovery time is considered from slow – rapid using a matrix (**Figure E-1**). Protection priority of resources is ranked numerically (refer **Table E-1**). This includes the assessment of whether the sensitivity (impact) ranking of various spill response options would increase, decrease or remain the same when compared with no action (natural recovery i.e. monitor and evaluate).

This process should be conducted by the IMT Environmental Coordinator[79] in consultation with appropriately qualified experts from AMOSC, AMSA, DTPLI and other agencies. Resources required include this document and appendices, OSRA maps [refer **Appendix H**), OSTM and marine charts. Local knowledge of the resources at stake is highly desirable to inform assessments.

Instructions

1. Identify which of the resources in **Table E-1** occur in the affected area and list details. Resources are grouped into 3 categories (water surface, shoreline, water column) and may have biological/ecological (emphasis), economic or social/cultural significance. Use OSTM in conjunction with an OSRA map of the projected impact area.

2. Rank sensitivity (Low/Medium/High) using the Resource Oil Sensitivity Matrix in **Figure E-1** to give a qualitative measure of likely impact if no response actions are taken (Natural Recovery i.e. Monitor and Evaluate). Sensitivity can be assessed by selecting a potential impact rank (Slight/Minor/Major/Severe) and recovery time (>10 years/5-10 years/2-5 years/<1 year). For particular shoreline types, use the Environmental Sensitivity Index (ESI) rankings in **Figure E-1** (shoreline types) as a guide. Record this information for each resource in **Table E-1**. It should be noted that for species which might be encountered within the ZPI associated with the Sea Lion and WSH Drilling Campaign, an assessment of the relative protection priorities and the rationale behind that selection is provided in **Section 5**.

3. Assign priority protection numbers (1-n) for each resource based upon sensitivity rankings assuming no response actions are taken (Natural Recovery i.e. Monitor and Evaluate). Highest priority resources should be assigned '1' – n is lowest priority. Resources may be ranked equally. Record this information for each resource in **Table E-1**.

4. Assess whether the sensitivity (impact) ranking would increase (🡅), decrease (🡇) or remain the same (–) for each of the 3 remaining response strategies (Dispersant Application, Offshore Containment and Recovery, Protection and Deflection & Shoreline Clean-up). *The Oiled Wildlife Response Strategy is adopted for all Level 2/3 spills*.

5. Select which overall response strategy (Natural Recovery i.e. Monitor and Evaluate, Dispersant Application, Offshore Containment and Recovery, Protection and Deflection and Shoreline Clean- up) would reduce or increase the sensitivity (impact) ranking for the highest priority shorelines/resources for protection. I.e. what response option provides net environmental benefit?

[79] This position will be filled by AMOSC Subject Matter Expert on the IMT.

Figure E-1. Resource oil sensitivity assessment matrix and shoreline type sensitivity ranks

HIGH IMPACT | MEDIUM IMPACT | LOW IMPACT

			RECOVERY TIME: SLOW ← RAPID			
			>10 years	5 – 10 years	2 – 5 years	< 1 year
			1	2	3	4
Potential Impact Rank	Severe	A	**High 1A**	**High 2A**	**High 3A**	**Medium 4A**
	Major	B	**High 1B**	**High 2B**	**Medium 3B**	**Low 4B**
	Minor	C	**High 1C**	**Medium 2C**	**Medium 3C**	**Low 4C**
	Slight	D	**Medium 1D**	**Low 2C**	**Low 3D**	**Low 4D**

	ESI	High	ESI	Medium	ESI	Low
Shoreline Types	9	Sheltered tidal flats	5	Mixed sand and gravel beaches	1	Exposed Rocky Shores
	10	Salt marshes and mangroves	6	Gravel beaches	2	Exposed Wave-Cut Platform
			7	Exposed tidal flats	3	Fine-medium grain sand beaches
			8	Sheltered rocky-rubble coasts	4	Coarse grain sand beaches

Environmental Sensitivity Index (ESI) for natural recovery of shoreline. ESI ranks are graded from lowest rank equals least sensitive to highest rank equals most sensitive.

Table C-1: Net Environmental Benefit Analysis - Environmental Effects of Response Options Risk Analysis Matrix

Resources	Details	Protection Priority Ranking	Expected impact under each scenario				
			Natural Recovery (i.e. Monitor and Evaluate)	Apply Dispersant	Offshore Containment and Recovery	Protect & Deflect	Shoreline Clean-up
Water Surface Resources							
Seabird feeding (e.g. penguins, short-tailed shearwater, gulls, terns, cormorants, gannets)							
Waterbird feeding (e.g. Ibis, Spoonbill, Pelican, Black Swan, Chestnut Teal and Musk Duck)							
Marine mammals (Seals/Dolphins/Whales)							
Shipping channels							
Commercial port							
Aquaculture							
Recreation/Tourism							
Recreational marinas							

Resources	Details	Protection Priority Ranking	Expected impact under each scenario				
			Natural Recovery (i.e. Monitor and Evaluate)	Apply Dispersant	Offshore Containment and Recovery	Protect & Deflect	Shoreline Clean-up
Shoreline Resources							
Salt marshes and mangroves							
Sheltered tidal flats							
Sheltered rocky/rubble coasts							
Exposed tidal flats							
Gravel beaches							
Mixed sand and gravel beaches							
Coarse grain sand beaches							
Fine-medium grain sand							
Exposed wave-cut platform							
Exposed rocky shores							
Seal colonies							
Shorebird feeding, roosting, nesting – migratory waders, Hooded Plovers etc.							
Waterbird roosting, nesting (e.g. Ibis, Spoonbill, Pelican, Black Swan, Chestnut Teal and Musk Duck)							
Seabird roosting, nesting (e.g. penguins,							

Resources	Details	Protection Priority Ranking	Expected impact under each scenario				
			Natural Recovery (i.e. Monitor and Evaluate)	Apply Dispersant	Offshore Containment and Recovery	Protect & Deflect	Shoreline Clean-up
short-tailed shearwater, gulls, terns, cormorants, gannets)							
Tourism/Recreational facilities							
Amenity beaches							
Archaeological sites							
Heritage sites							
Geological sites							
Water Column Resources							
Fish spawning/nursery areas							
Marine mammals (Seals/Dolphins/Whales)							
Seabird feeding (e.g. penguins, short-tailed shearwater, gulls, terns, cormorants, gannets)							

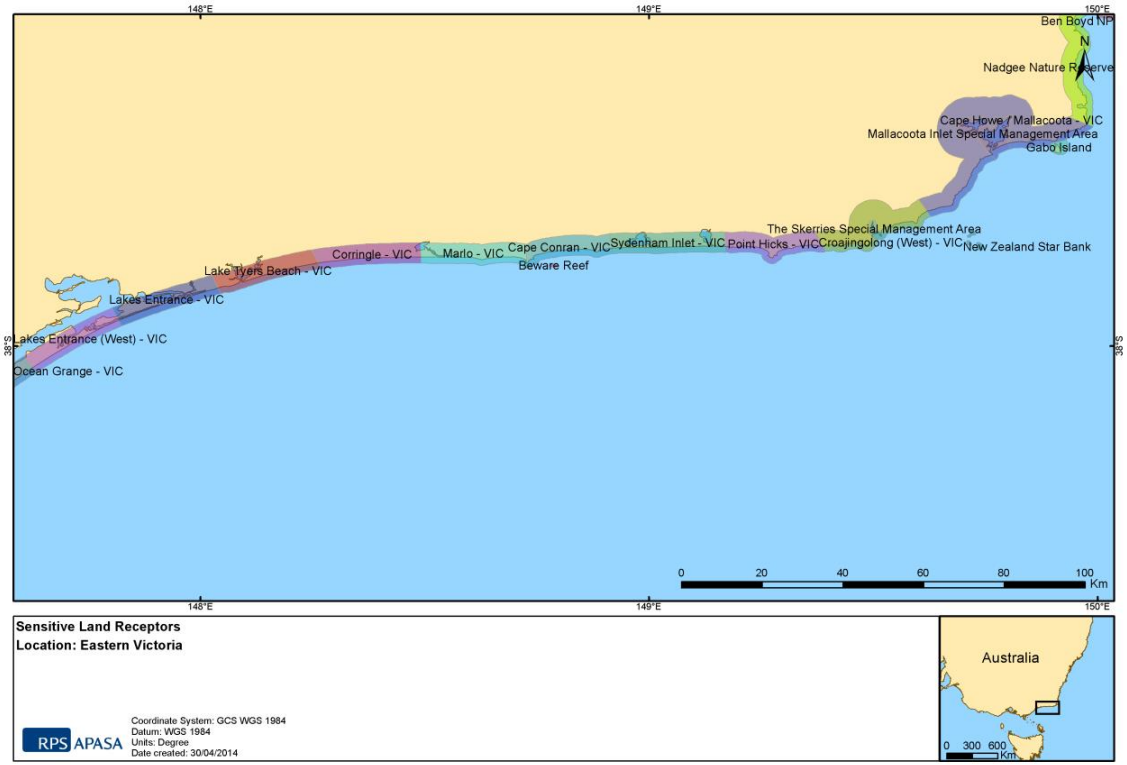
Resources	Details	Protection Priority Ranking	Expected impact under each scenario				
			Natural Recovery (i.e. Monitor and Evaluate)	Apply Dispersant	Offshore Containment and Recovery	Protect & Deflect	Shoreline Clean-up
Commercial Fisheries							
Abalone							
Rock Lobster							
Fin fish							
Aquaculture							
Recreational fisheries							
Benthic systems							
Sea-grass							
Rocky reef							
Other							
Marine Parks/Sanctuaries							
Estuaries							
Commercial water intakes							

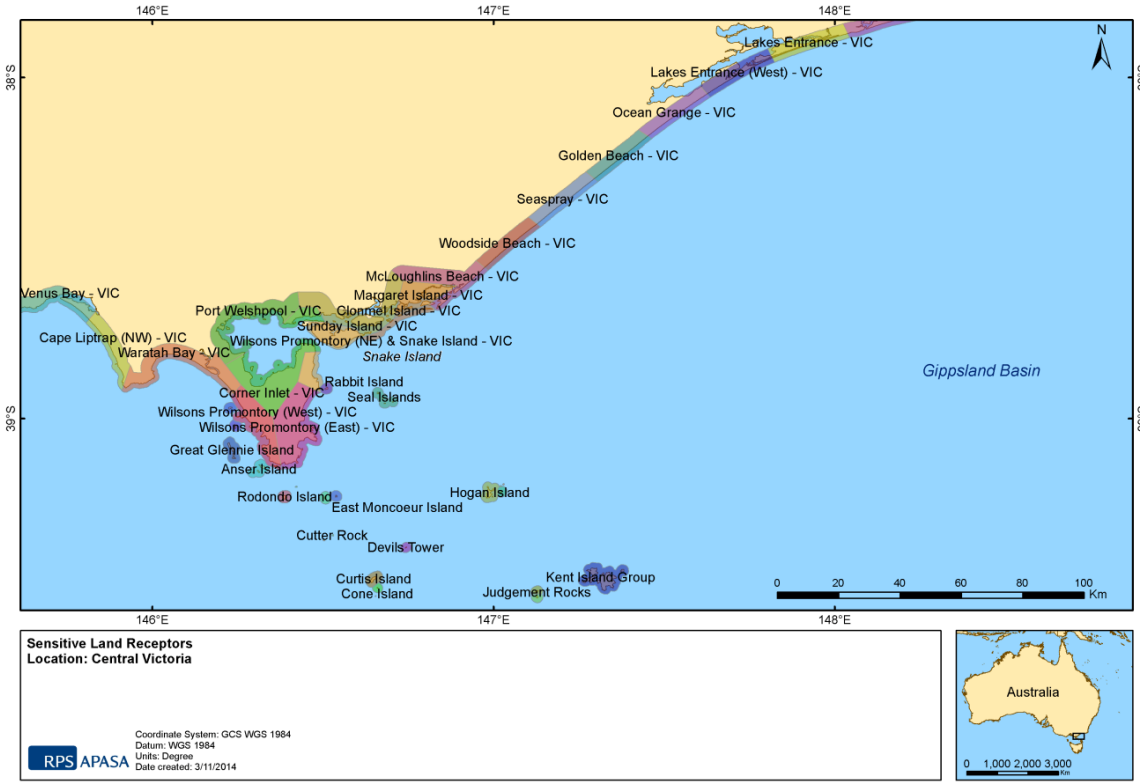
APPENDIX D: OIL SPILL TRAJECTORY MODELLING SUMMARY

The following information has been summarised from the predictive OSTM contained in the *Sea Lion and West Seahorse (Gippsland Basin) – Quantitative Oil Spill Modelling and Net Environmental Benefits Analysis* (2014). This information does not include information relating to Dispersant application outcomes.

This section provides the following:

- Definition of the shoreline segments utilised in the OSTM to define shoreline segments;
- Utilising the defined 'impact thresholds' defined in the OPEP Section 5.3.3 the following ZPI plots are provided:
    - **West Seahorse Location:**
        - Figure I5: Surface Oil at 10µm (probability);
        - Figure I6: Surface Oil at 10µm (Minimum time to Impact)
        - Figure I7: Entrained Phase Zones
        - Table I3: Shoreline Impacts


148°E
149°E
150°E
Ben Boyd NP
N
Nadgee Nature Reserve
Cape Howe / Mallacoota - VIC
Mallacoota Inlet Special Management Area
Gabo Island
The Skerries Special Management Area
New Zealand Star Bank
Croajingolong (West) - VIC
Point Hicks - VIC
Sydenham Inlet - VIC
Cape Conran - VIC
Beware Reef
Marlo - VIC
Corringle - VIC
Lake Tyers Beach - VIC
Lakes Entrance - VIC
Lakes Entrance (West) - VIC
Ocean Grange - VIC
38°S
0 20 40 60 80 100
Km
Sensitive Land Receptors
Location: Eastern Victoria
RPS APASA
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Date created: 30/04/2014
Australia
0 300 600
Km


146°E
147°E
148°E
38°S
39°S
N
Lakes Entrance - VIC
Lakes Entrance (West) - VIC
Ocean Grange - VIC
Golden Beach - VIC
Seaspray - VIC
Woodside Beach - VIC
McLoughlins Beach - VIC
Venus Bay - VIC
Margaret Island - VIC
Port Welshpool - VIC
Clonmel Island - VIC
Sunday Island - VIC
Cape Liptrap (NW) - VIC
Wilsons Promontory (NE) & Snake Island - VIC
Waratah Bay - VIC
Snake Island
Gippsland Basin
Rabbit Island
Corner Inlet - VIC
Seal Islands
Wilsons Promontory (West) - VIC
Wilsons Promontory (East) - VIC
Great Glennie Island
Anser Island
Hogan Island
Rodondo Island
East Moncoeur Island
Cutter Rock
Devils Tower
Curtis Island
Cone Island
Kent Island Group
Judgement Rocks
0 20 40 60 80 100
Km
Sensitive Land Receptors
Location: Central Victoria
RPS APASA
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Date created: 3/11/2014
Australia
0 1,000 2,000 3,000
Km

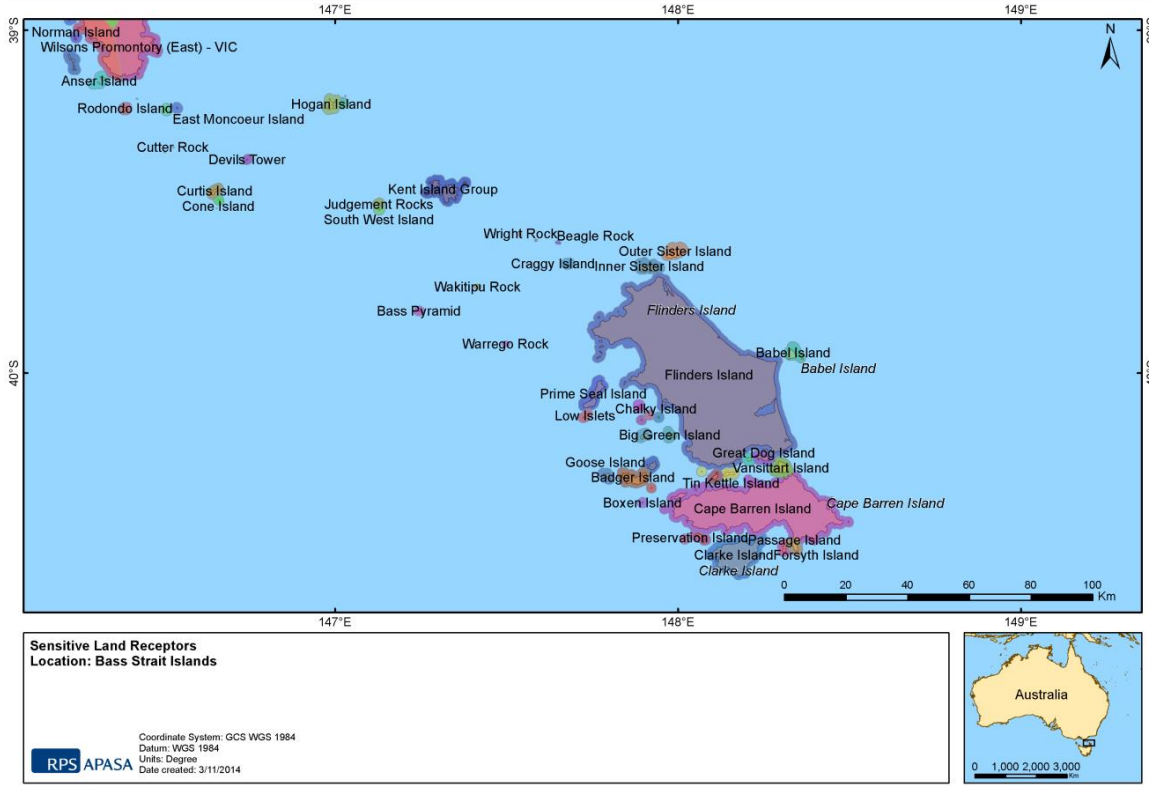

147°E
148°E
149°E
39°S
40°S
N
Norman Island
Wilsons Promontory (East) - VIC
Anser Island
Rodondo Island
Hogan Island
East Moncoeur Island
Cutter Rock
Devils Tower
Curtis Island
Cone Island
Kent Island Group
Judgement Rocks
South West Island
Wright Rock
Beagle Rock
Outer Sister Island
Craggy Island
Inner Sister Island
Wakitipu Rock
Bass Pyramid
Flinders Island
Warrego Rock
Babel Island
Babel Island
Flinders Island
Prime Seal Island
Low Islets
Chalky Island
Big Green Island
Great Dog Island
Goose Island
Vansittart Island
Badger Island
Tin Kettle Island
Boxen Island
Cape Barren Island
Cape Barren Island
Preservation Island
Passage Island
Clarke Island
Porsyth Island
Clarke Island
0 20 40 60 80 100
Km
Sensitive Land Receptors
Location: Bass Strait Islands
RPS APASA
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree
Date created: 3/11/2014
Australia
0 1,000 2,000 3,000

Figure I5: West Seahorse Location (Level 2 MDO Release): Probability of Sea Surface Exposure to 10µm (APASA, 2014)

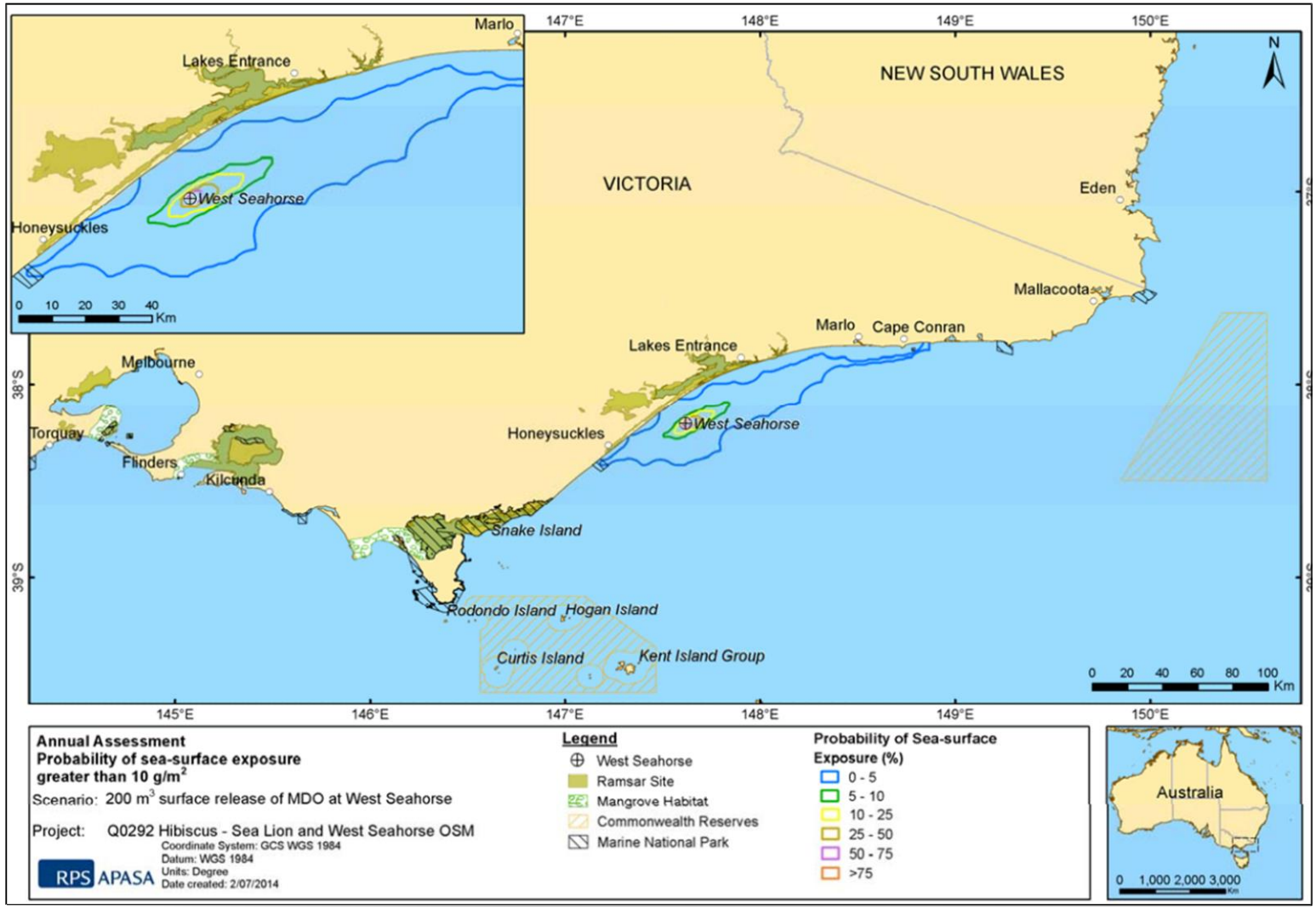


Figure I6: West Seahorse Location (Level 2 MDO Spill): Minimum Time to Sea Surface Exposure of 10µm (APASA, 2014)

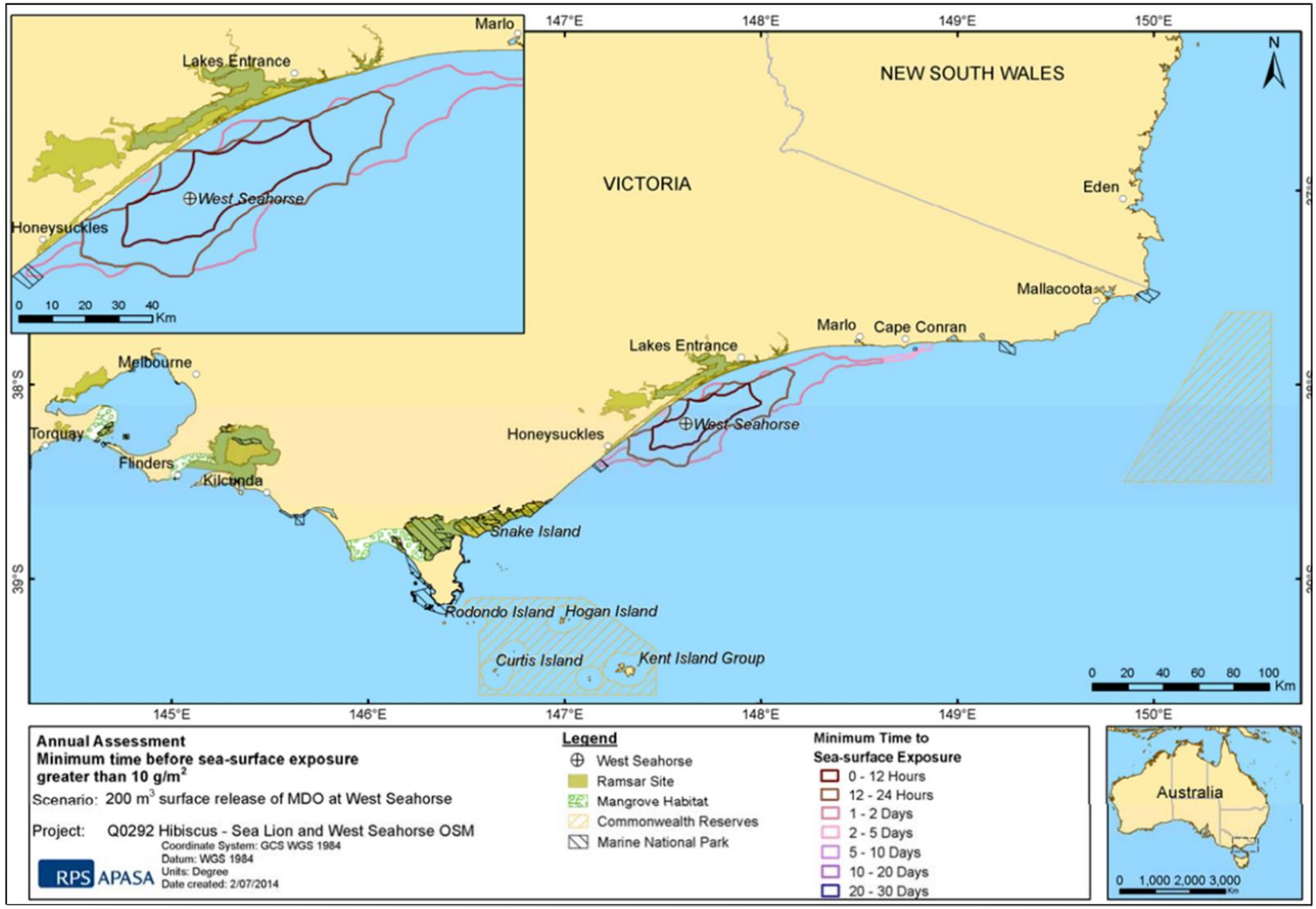


Figure I7: West Seahorse Location (Level 2 MDO Release): Potential Zones of Entrained Hydrocarbons (APASA, 2014)

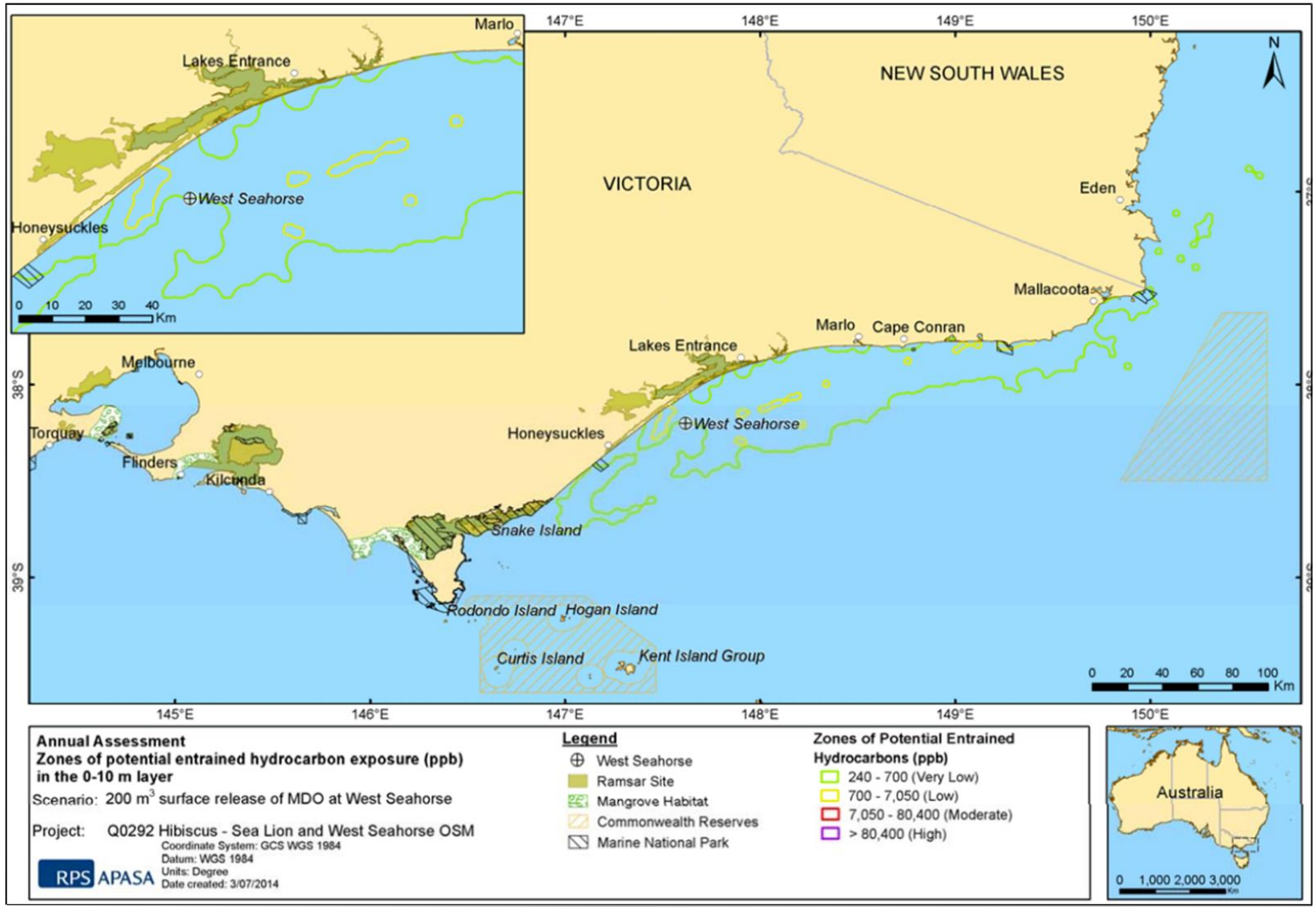


Table I3: West Seahorse Location (Level 2 MDO Release): Summary of Predicted Probability of Contact to Area of Interest (APASA, 2014)

Annual					
	Croajingolong Coast	Cape Conran Coast (Nth Lakes Entrance to Point Hicks)	Gippsland Coast (Ninety Mile Beach to Lakes Entrance)	Woodside Beach	Wilsons Promontory
Maximum probability of contact (%)(above 100 g/m^2)	1	5	5	1	1
Maximum probability of contact (%)(above 1,000 g/m^2)	nc	1	3	nc	nc
Minimum time before visible oil coming ashore (hours)	65	37	12	40	55
Minimum time before shoreline accumulation greater than 100 g/m^2 (hours)	74	45	14	44	61
Average load on shoreline (g/m^2)	1.5	44.1	106.6	26.3	35.6
Maximum peak load on shoreline (g/m^2)	262.1	2,528.4	2,488.0	394.6	329.8
Average oil volume on shoreline (m^3)	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum oil volume on shoreline (m^3)	<0.1	<0.1	<0.1	<0.1	<0.1
Average length of shoreline contacted above 100 g/m^2 (km)	3.7	10.9	9.3	9.0	10.0
Maximum length of shoreline contacted above 100 g/m^2 (km)	5.0	25.0	21.0	13.0	10.0

APPENDIX E: HYDROCARBON MATERIAL SAFETY DATA SHEETS/WEST SEAHORSE CRUDE ASSAY

INCLUDES MATERIAL SAFETY DATA SHEETS FOR:

- **MARINE DIESEL**
- **HYDRAULIC LIQUID**
- **WEST SEAHORSE CRUDE ASSAY**

WEST SEAHORSE-3 CRUDE ASSAY

3D Oil
West Seahorse-3 AFL 20080022

Compositional Analysis of Stocktank Oil to C36+

	Component	Mole %	Weight %
H_2	Hydrogen	0.00	0.00
H_2S	Hydrogen Sulphide	0.00	0.00
CO_2	Carbon Dioxide	0.04	0.01
N_2	Nitrogen	0.00	0.00
C_1	Methane	0.00	0.00
C_2	Ethane	0.26	0.05
C_3	Propane	1.67	0.47
iC_4	i-Butane	1.78	0.66
nC_4	n-Butane	2.32	0.86
C_5	Neo-Pentane	0.02	0.01
iC_5	i-Pentane	2.74	1.26
nC_5	n-Pentane	2.60	1.20
C_6	Hexanes	7.05	3.88
	M-C-Pentane	1.62	0.87
	Benzene	0.02	0.01
	Cyclohexane	1.27	0.68
C_7	Heptanes	8.52	5.45
	M-C-Hexane	6.11	3.83
	Toluene	0.02	0.01
C_8	Octanes	10.52	7.69
	E-Benzene	0.19	0.13
	M/P-Xylene	0.52	0.35
	O-Xylene	0.10	0.07
C_9	Nonanes	6.94	5.68
	1,2,4-TMB	0.26	0.20
C_{10}	Decanes	5.79	5.26
C_{11}	Undecanes	4.26	4.00
C_{12}	Dodecanes	3.38	3.47
C_{13}	Tridecanes	3.65	4.08
C_{14}	Tetradecanes	3.03	3.67
C_{15}	Pentadecanes	3.39	4.46
C_{16}	Hexadecanes	2.93	4.15
C_{17}	Heptadecanes	2.84	4.30
C_{18}	Octadecanes	2.86	4.59
C_{19}	Nonadecanes	2.19	3.68
C_{20}	Eicosanes	1.83	3.22
C_{21}	Heneicosanes	1.51	2.81
C_{22}	Docosanes	1.27	2.47
C_{23}	Tricosanes	1.08	2.20
C_{24}	Tetracosanes	0.88	1.86
C_{25}	Pentacosanes	0.74	1.64
C_{26}	Hexacosanes	0.57	1.31
C_{27}	Heptacosanes	0.48	1.14
C_{28}	Octacosanes	0.37	0.91
C_{29}	Nonacosanes	0.32	0.82
C_{30}	Triacontanes	0.26	0.68
C_{31}	Hentriacontanes	0.22	0.60
C_{32}	Dotriacontanes	0.16	0.45
C_{33}	Tritriacontanes	0.14	0.41
C_{34}	Tetratriacontanes	0.11	0.33
C_{35}	Pentatriacontanes	0.09	0.27
C_{36+}	Hexatriacontanes plus	1.08	3.85
	Totals :	100.00	100.00

Note: 0.00 means < 0.005.