ConocoPhillips

Australia Business Unit

Otway Exploration Drilling Program
Oil Pollution Emergency Plan

ABU2-000-EN-V01-D-00005

In the event of a spill	
Immediate Notifications	Section 3.2.1, Page 38
Immediate Response Actions	Section 3.1, Page 34
Quick Reference Spill Response	Section 2, Page 15
Response Strategies	Section 4, Page 51

Revision Detail

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Contents

Appendices

List of Tables

List of Figures

Abbreviations and Definitions	
ABU	Australian Business Unit
ADIOS	Automated Data Inquiry for Oil Spills
AIIMS	Australasian Interagency Incident Management System
ALARP	As Low as Reasonably Practicable
AMOSC	Australian Marine Oil Spill Centre
AMSA	Australian Maritime Safety Authority
API	American Petroleum Institute
APPEA	Australian Petroleum Production & Exploration Association
ASAP	As Soon As Possible
BAOAC	Bonn Agreement Oil Appearance Code
BOM	Bureau of Meteorology
BOP	Blow Out Preventer
BP	Boiling Point
CA	Control Authority
CAA	Call Out Authority
CBT	Competency Based Training
CG	Core Group
CIMP	Crisis and Incident Management Plan
CMT	Crisis Management Team
COP	ConocoPhillips Australia
DEECA	Department of Environment, Energy and Climate Action
DISR	Department of Industry, Science and Resources
DTP	Department of Transport and Planning
EMT	Emergency Management Team
Environment	Defined under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 as: •ecosystems and their constituent parts, including people and communities •natural and physical resources •the qualities and characteristics of locations, places and areas, and •the heritage value of places and includes •the social, economic and cultural features of the matters mentioned above.
EP	Environmental Plan
EPA	Environmental Protection Agency
ERT	Emergency Response Team
ESG	Emergency Support Group
EU	Environmental Unit
EUL	Environmental Unit Lead
FIN	Finance
FOB	Forward Operating Base
GIMAT	Global Incident Management Assist Team
GIS	Geographic Information System
GM	General Manager
GNOME	General NOAA Operational Modelling Environment
GP	General Purpose

Abbreviations and Definitions	
GEA	Governance and External Affairs
GM-HSE	General Manager – Health, Safety and Environment (COP)
HSE	Health, Safety and Environment
IAP	Incident Action Plan
IBA	Important Bird Area
IBC	Intermediate Bulk Container
IC	Incident Commander
ICS	Incident Command System
IMO	International Maritime Organisation
IMS	Incident Management System
IMT	Incident Management Team
IOGP	International Association of Oil & Gas Producers
IPIECA	International Petroleum Industry Environmental Conservation Association
IWCD	Independent Well Control Device
ISB	In-Situ Burning
JSCC	Joint Strategic Coordination Committee
KSAT	Kongsberg Satellite Services
LGA	Local Government Area
LOG	Logistics
LOWC	Loss of Well Control
MCP	Marine Conservation Program (under leadership of Department of Natural Resources and Environment (NRE Tas))
MDO	Marine Diesel Oil
MESCC	Maritime Emergency Strategic Coordination Committee
MLD	Mudline Closure Device
MODU	Mobile Offshore Drilling Unit
MOU	Memorandum of Understanding
NATPLAN	National Plan for Marine Oil Pollution
NEBA	Net Environmental Benefit Analysis
NM	Nautical Mile
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NP	National Park
NR	Not Recommended
NRE	Natural Resources and Environment (Department of) (Tas)
NRT	National Response Team
NSW	New South Wales
NV	Not Viable
OEDP	Otway Exploration Drilling Program
OEM	Original Equipment Manufacturer
OIM	Offshore Instillation Manager
OPEP	Oil Pollution Emergency Plan
OPGGS	Offshore Petroleum and Greenhouse Gas Storage
OPICC	Offshore Petroleum Incident Coordination Committee
OPS	Operations

Abbreviations and Definitions	
OSC	Operations Section Chief
OSM	Operational and Scientific Monitoring
OSMP	Operational and Scientific Monitoring Plan
OSPR	Oil Spill Preparedness and Response
OSTM	Oil Spill Trajectory Modelling
OWR	Oiled Wildlife Response
PECS	Pre-emptive-Capping Stack
PLA	Planning
POLREP	Pollution Report
PPE	Personal Protective Equipment
PSC	Planning Section Chief
PSZ	Petroleum Safety Zone
RAMSAR	Convention of Wetlands of International Importance
ROV	Remote Operated Vehicle
RWP	Relief Well Plan
SCAT	Shoreline Cleanup and Assessment Technique
SCERP	Source Control Emergency Response Plan
SES	State Emergency Service
SFRT	Subsea First Response Toolkit
SIMA	Spill Impact Mitigation Assessment
SIT	Situation Unit
SITL	Situation Unit Team Leader
SITREP	Situation Report
SME	Subject Matter Expert
SMEACS	Situation, Mission, Execution, Administration, Command and Control, Safety
SMPC	State Marine Pollution Controller
SMPEP	Shipboard Marine Pollution Emergency Plan
SMV	Surveillance, Modelling and Visualisation
SNA	Safe Navigation Area
SOPEP	Shipping Oil Pollution Emergency Plan
TAS	Tasmania
TEC	Threatened Ecological Communities
TRP	Tactical Response Plan
VHF	Very High Frequency
VIC	Victoria
VM	Vessel Master
VTS	Vessel Traffic Service
WCD	Worst Case Discharge
WHAM	Wildlife Health and Marine Section of NRE Tas

1. Introduction

ConocoPhillips Australia SH1 Pty Limited and ConocoPhillips Australia SH2 Pty Limited hold an 80% interest in and operatorship of Exploration Permits VIC/P79 and T/49P, respectively. Collectively these entities are called 'ConocoPhillips Australia or COP (in checklists)' for the purposes of this Oil Pollution Emergency Plan (OPEP).

This OPEP has been prepared in accordance with Sections 22(8) to 22(14) of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (the Environment Regulations) to support the ConocoPhillips Australia's Otway Exploration Drilling Program in Permits VIC/P79 and T/49P (see Figure 2-1), located in Commonwealth waters of the offshore Otway Basin.

1.1. Purpose

The purpose of this OPEP is to describe the arrangements that ConocoPhillips Australia has in place to prepare for, respond to and monitor an oil pollution event, including:

- Control measures for a timely and effective response to an emergency that results, or may result, in oil pollution
- Arrangements and capability that will be in place for the duration of the activity to ensure timely implementation of pre-determined control measures, including arrangements for ongoing maintenance of response capability
- Arrangements and capability that will be in place for monitoring the effectiveness of the control measures and ensuring that the environmental performance standards are met, and
- Arrangements and capability in place for operational monitoring of oil pollution to inform response activities.

The processes and response structures used by ConocoPhillips Australia demonstrate effective integration and use of industry/government response efforts and resources.

The objective of this OPEP is to detail the actions that ConocoPhillips Australia will undertake during the event of an oil spill resulting from exploration activities.

1.2. Scope

This OPEP covers potential oil pollution emergencies that may result from activities associated with the Otway Exploration Drilling Program undertaken in permit areas VIC/P79 and T/49P. The OPEP recognises and incorporates the divisions of responsibility as defined under the terms of the National Plan for Maritime Environmental Emergencies (NATPLAN, 2020).

1.3. Otway Exploration Drilling Program Activities

This OPEP has been developed to address the oil spill risk associated with petroleum activities described in the Otway Exploration Drilling Program Environment Plan (EP). The EP provides further details on the description of activities, existing environment, assessment and management of environmental impacts and risks, and mitigations.

Otway exploration activities will occur within defined operational areas located entirely within offshore permits VIC/P79 and T/49P (Figure 1-1). The petroleum activities assessed in the EP which present a risk of oil spill and are covered by this OPEP, include:

- Seabed clearance surveys (seabed surveys), and
- Exploration drilling of up to 6 exploration wells, including support activities.

Seabed surveys may commence from 1 January 2024 and drilling may commence from 1 October 2024, subject to complying with other requirements in the EP. The term of the EP is from 1 January 2024 to 31 December 2028.

Seabed surveys involve the use of 1-2 survey vessels and drilling involves the use of a semi-submersible mobile offshore drilling unit (MODU) and up to three support vessels. The MODU and survey / support vessels carry marine diesel oil (MDO), or similar e.g. marine gas oil, which may be released in the event of a vessel to vessel or vessel to MODU collision during bunkering or as a result of equipment failure.

During drilling operations a failure of one or more well barriers may result in a situation where pressure control has been lost and reservoir fluids are free to flow to surface through the unsecured wellbore. Although extremely unlikely, these situations have the potential to result in a Loss of Well Control (LOWC) event whereby gas condensate is released into the marine environment.

1.4. Interface with Other Documentation and Plans

This OPEP integrates with the following emergency planning documentation:

- The National Plan for Maritime Environmental Emergencies (NATPLAN) (AMSA, 2020) – AMSA is the jurisdictional authority for spills from vessels in or affecting Commonwealth Waters, and the coordinator of the NATPLAN
- The Victorian State Maritime Emergencies (Non-search and Rescue) Plan (VicPlan) (Emergency Management Victoria, 2021) – Victorian Department of Transport and Planning (DTP-Vic) is the Control Agency for spills that impact Victorian State Waters
- The Tasmanian Marine Oil and Chemical Spill Contingency Plan (TasPlan) (TasEPA, 2022) – The Environment Protection Authority Tasmania (TasEPA) is the Control Agency for spills that impact Tasmanian State Waters.

The OPEP interfaces with a number of ConocoPhillips Australia emergency response documents, including:

- Crisis and Incident Management Plan (CIMP) (ABUE-450-HS-N05-C-00119)
- Emergency Contact Directory (ABUE-450-HS-L01-C-00001)
- Incident Reporting and Investigation Procedure (ABUE-450-HS-N05-C-00009)
- Business Continuity Plan (ABUE-450-HS-N05-C-00054)
- Otway Exploration Drilling Program Environment Plan (EP)
- Otway Exploration Drilling Program Source Control Emergency Response Plan (SCERP)
- Otway Exploration Drilling Program Relief Well Plan (RWP)
- Otway Exploration Drilling Program Operational and Scientific Monitoring Program (OSMP)
- Australia Business Unit – Operational Monitoring Plans (ABUE-450-EN-V01-C-00016)
- Australia Business Unit – Scientific Monitoring Plans (ABUE-450-EN-V01-C-00015)

The interface between key response documents and processes is pictorially represented in Figure 1-1 below.

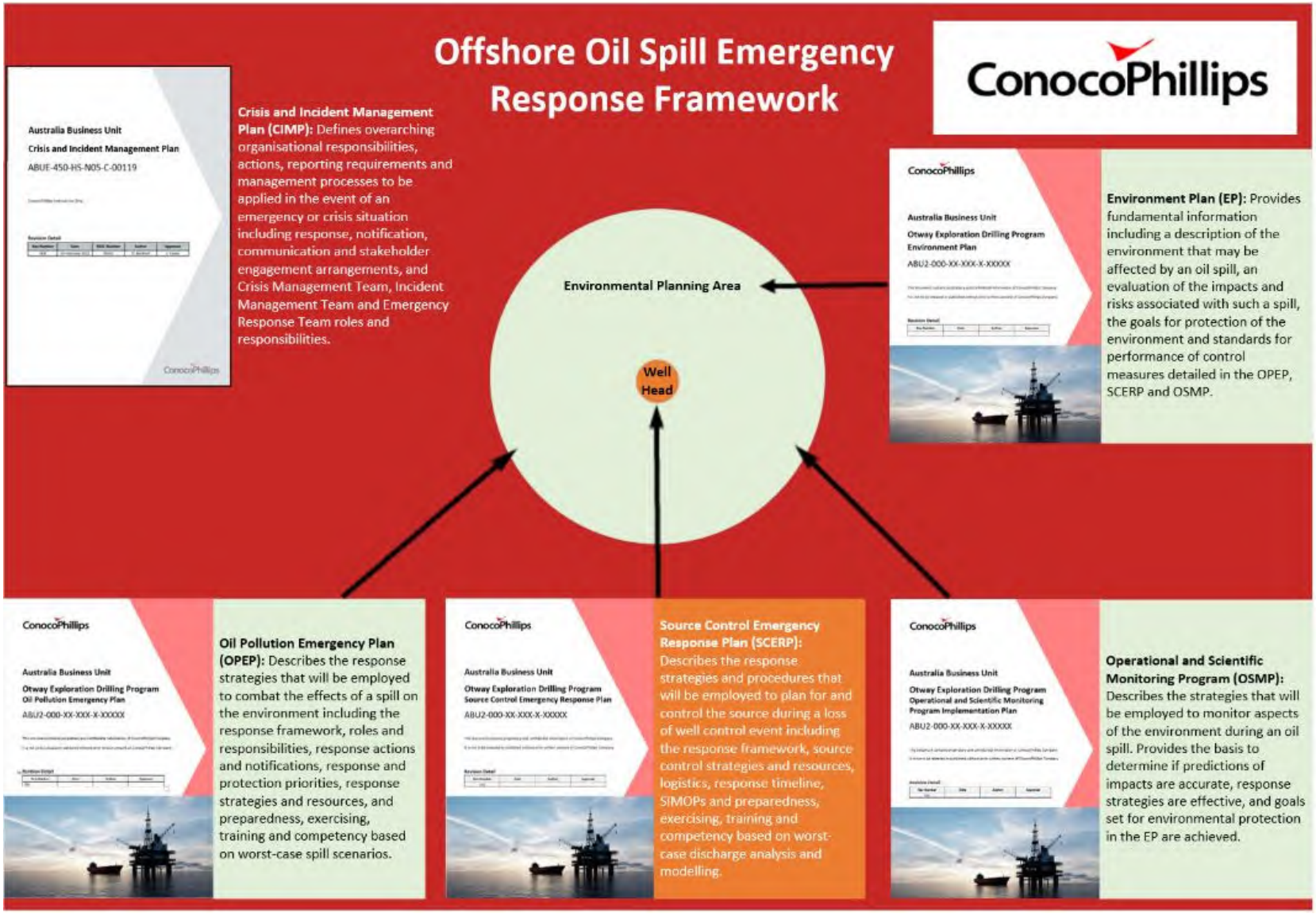


Figure 1-1: ConocoPhillips Australia offshore oil spill emergency response framework

1.5. Review of OPEP

The OPEP will be reviewed and updated as required and no less than annually during the activity, to ensure that material information remains accurate. Updates should reflect outcomes of testing, assurance and continuous improvement activities, amended contractual arrangements and feedback from ongoing consultation. Timing for review will be consistent with the arrangements outlined in the EP, as per requirements of Regulation 22(8).

1.6. Training and Testing Arrangements

ConocoPhillips Australia is committed to ensuring staff with functional roles within the IMT and field operations teams are trained and skilled to complete the tasks required of them.

A training and competency matrix has been developed in line with the 2021 APPEA Guidance document: Incident Management Teams – Knowledge requirements for responding to marine oil spills. The competency pathway has considered the skills and expertise required to effectively respond to an incident with the knowledge of Incident Command System (ICS), technical spill response and application of these acquired skills in simulated exercises.

ConocoPhillips Australia utilises a blend of internationally recognised units of competency and subject matter/role specific training programs for the IMT training and assess its IMT function-specific oil spill knowledge requirements and competencies through spill awareness and spill response workshops.

A matrix outlining the IMT positions and the description, content and frequency of training for each function is provided in Appendix 1: Parts A-B.

In addition, the response arrangements outlined in this OPEP will be tested in accordance with the ConocoPhillips Australia Testing and Exercising Programme (Appendix 1: Part D).

The purpose of the programme is:

- To meet the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 Section 22, (12), (13) and (14);
- To demonstrate (via testing) that ConocoPhillips Australia's arrangements are fit for purpose against the worst credible scenario (LOWC), that they are effective, scalable and maintain response readiness;
- To evaluate areas of its emergency and oil pollution response programme that ConocoPhillips Australia can improve upon (demonstration of continuous improvement); and
- Instil a positive learning culture amongst ConocoPhillips Australia's staff, contractors, third parties and other critical response partners to practise their skills, knowledge and craft outside of 'real' emergency response scenarios.

Consideration across the CoP exercise program has also been driven by the programme objectives, timing/manner of exercises, evaluation/close out, and other methods as detailed in the *IPIECA Oil Spill Exercises, Good Practise Guide.*

Additional information on IMT capability, coverage, and testing and exercising requirements are detailed in Appendix 1: IMT Capability Assessment.

1.7. Health, Safety and Environment Policy

Oil spill response activities under the control of ConocoPhillips Australia shall be implemented in accordance with ConocoPhillips's Health, Safety and Environmental Policy, Standards, Practices and Guidelines, and consistent with the outcomes sought from the National Plan guidance paper *NP–GUI–026: Marine oil spill response health and safety*.

Prior to implementing spill response operations, for activities that are outside ConocoPhillips Australia's business as usual operations, activities will be risk assessed. Should new or heightened consequences be introduced, these shall be mitigated to As Low As Reasonably Practicable (ALARP). ConocoPhillips Australia will develop and implement a Spill Safety Plan which documents this process. Safety risk mitigation measures, including both process and personnel safety, will be established in accordance with the hierarchy of controls, as shown in Figure 1-2 below.

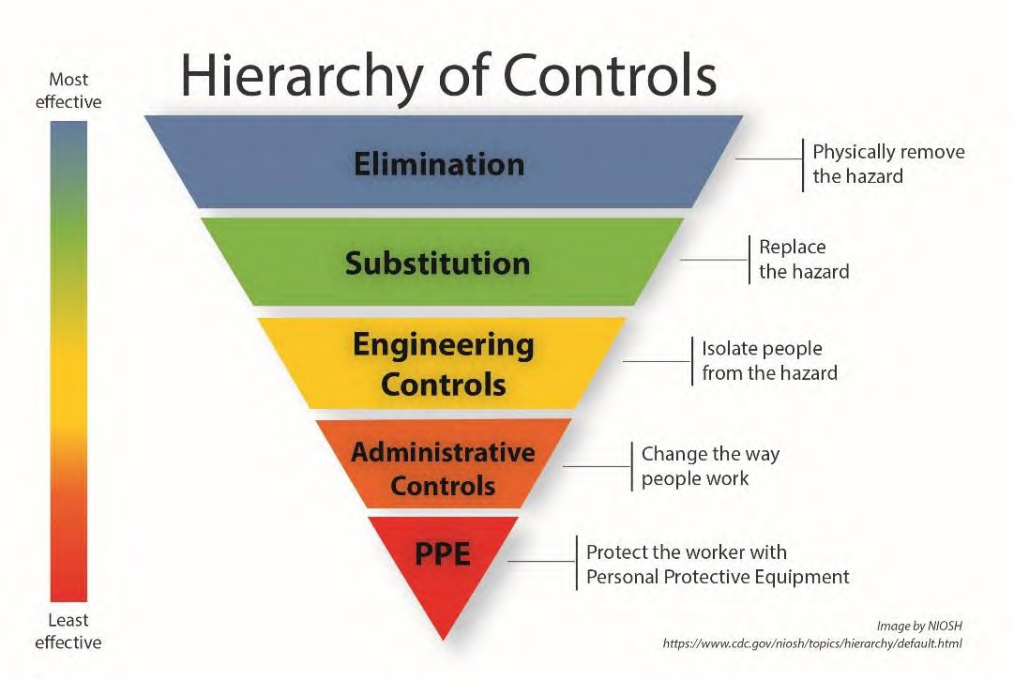


Figure 1-2: Hierarchy of controls

1.8. Spill Response Implementation and Environmental Performance

Environmental performance outcomes (EPOs) are measurable levels of performance required for the management of the Otway Exploration Drilling Program. EPOs ensure that the impacts and risks associated with the activities, including the risk of an oil pollution incident and consequential response activities, will be managed to an acceptable level.

Control Measures (CMs), being a system, an item of equipment, a person or procedure that are used as the basis for managing environmental impacts and risks associated with an oil spill response, have been identified to support achievement of the EPOs for this OPEP. Environmental performance standards (EPS) have been defined to provide a statement of the performance required of each of the identified CMs, and Measurement Criteria (MCs) have been developed to demonstrate how performance will be measured in an objective way.

Detailed EPOs, CMs, EPS' and MCs have been developed for response strategies identified in this OPEP and are collated in Section 6 to support implementation and ongoing monitoring and audit efforts.

2. Quick Reference OPEP Information

2.1. Location

This OPEP applies to spills from activities associated with the ConocoPhillips Australia Otway Exploration Drilling Program within the defined operational areas for petroleum titles (permit areas) VIC/P79 and T/49P, as shown in Figure 2-1.

2.1.1. Operational Areas

Operational areas represent the broadest area within which all petroleum activities, namely seabed surveys and exploration drilling, can occur. Operational areas are located within and adjacent to the relevant permit areas (VIC/P79 and T/49P) as shown in Figure 1-1. Water depths in the operational areas ranges from 53 m to 200 m. Exact drilling locations will be confirmed prior to the commencement of drilling activities.

Survey and drilling support vessels will traverse from coastal departure locations to the operational areas and may reside outside of operational areas from time to time. Vessels moving to or residing outside of operational areas are not considered part of the activity until such time that they enter an operational area.

2.1.2. Safe Navigation Area (SNA)

A 500 m radius Safe Navigation Area (SNA) will be established around seabed survey vessels and any towed equipment when conducting seabed clearance activities. SNAs will be located entirely within the broader operational areas. Seabed surveys are expected to be conducted within 6 months prior to drilling.

2.1.3. Drilling Area

Exploration drilling will be undertaken at up to six locations within the operational areas. Drilling areas will be established around each exploration well, and will be located entirely within the broader operational areas. Each drilling area will be represented by a 2 km radius cautionary zone around the well site, also encompassing the 500 m Petroleum Safety Zone (PSZ), while the drilling rig is in location.

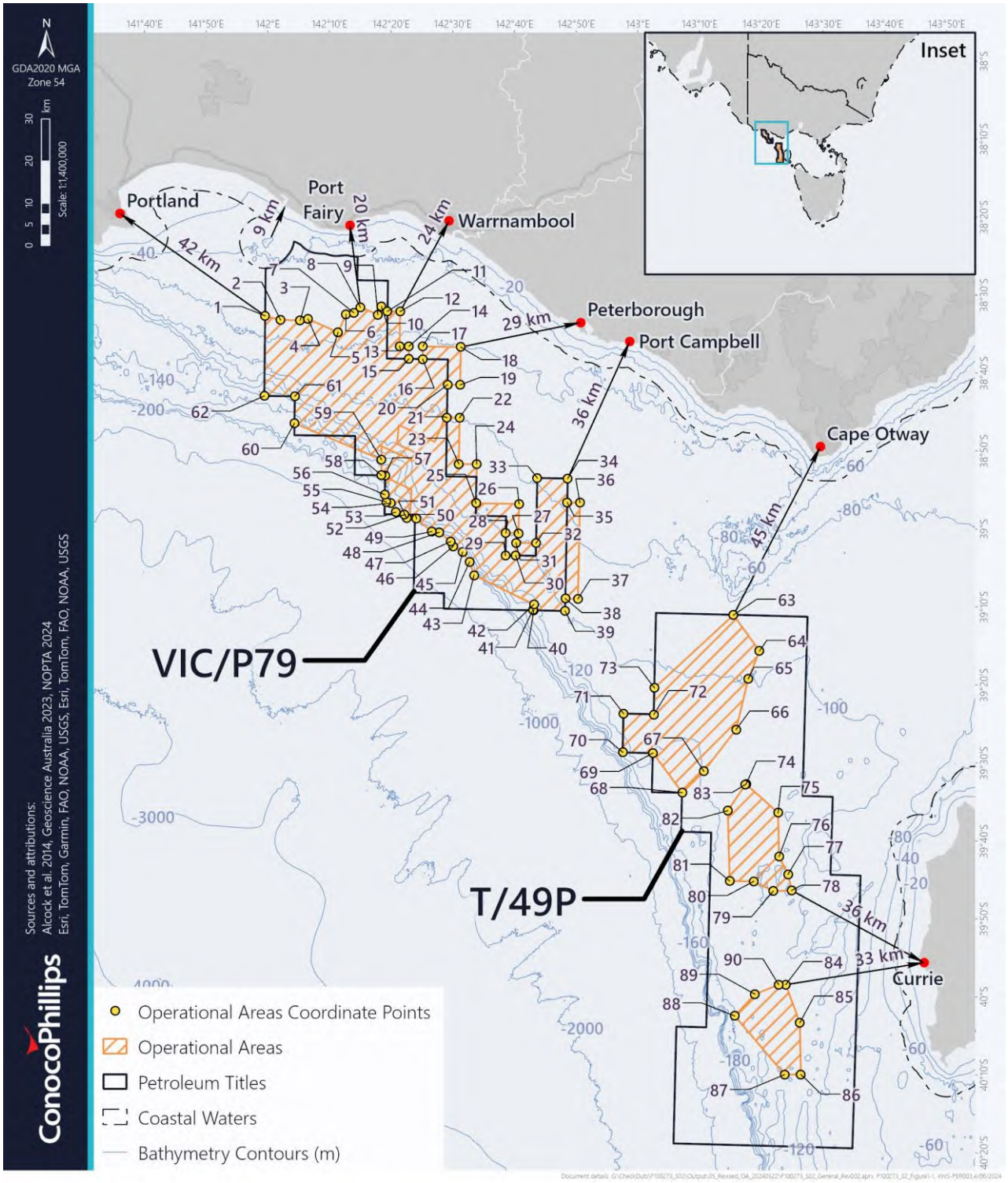


Figure 2-1: Operational areas within permits VIC/P79 and T/49P

Coordinates

Label	Lat (GDA2020)	Long (GDA 2020)
1	38° 34.63470790' S	142° 00.08237763' E
2	38° 35.13323442' S	142° 02.60483367' E
3	38° 35.16042451' S	142° 05.82135407' E
4	38° 34.96510913' S	142° 07.09213638' E
5	38° 36.63802367' S	142° 12.03951699' E
6	38° 34.29930985' S	142° 13.30572193' E
7	38° 34.08053289' S	142° 14.55719778' E
8	38° 33.36773238' S	142° 15.62998057' E
9	38° 34.29627903' S	142° 18.49783224' E
10	38° 33.23264674' S	142° 19.06796372' E
11	38° 33.85572058' S	142° 20.08197398' E
12	38° 33.85662017' S	142° 22.14772897' E
13	38° 38.28887895' S	142° 22.15000628' E
14	38° 38.28884730' S	142° 23.67480464' E
15	38° 39.91070171' S	142° 23.68698890' E
16	38° 39.91069772' S	142° 25.94600259' E
17	38° 38.28886685' S	142° 25.94527569' E
18	38° 38.28845341' S	142° 32.14972173' E
19	38° 43.15112810' S	142° 32.15219136' E
20	38° 43.15095111' S	142° 30.08207213' E
21	38° 47.37615453' S	142° 30.08219358' E
22	38° 47.37397909' S	142° 32.15434422' E
23	38° 53.28908153' S	142° 32.15739734' E
24	38° 53.28905819' S	142° 35.08091853' E
25	38° 58.30408139' S	142° 35.08204359' E
26	38° 58.28872074' S	142° 42.15969333' E
27	39° 02.06228105' S	142° 42.16163813' E
28	39° 02.06757251' S	142° 40.08245676' E
29	39° 04.91080943' S	142° 40.08254033' E
30	39° 04.91078860' S	142° 41.78361477' E
31	39° 03.29106620' S	142° 41.77655592' E
32	39° 03.28154381' S	142° 45.08238924' E
33	38° 54.91060091' S	142° 45.08212348' E
34	38° 54.91052009' S	142° 50.08202055' E
35	38° 57.97907059' S	142° 50.08210010' E
36	38° 57.97085584' S	142° 52.15917239' E
37	39° 10.31473868' S	142° 52.16565005' E
38	39° 10.32310030' S	142° 50.08253579' E
39	39° 11.91076725' S	142° 50.08259080' E
40	39° 11.91162320' S	142° 44.92820547' E
41	39° 11.85354681' S	142° 44.78268323' E
42	39° 11.15560504' S	142° 44.94032293' E
43	39° 07.54226411' S	142° 34.96375033' E
44	39° 05.82212963' S	142° 34.21374745' E
45	39° 04.60703458' S	142° 33.01374284' E
46	39° 03.87197710' S	142° 31.47623694' E
47	39° 03.27193018' S	142° 31.02282611' E
48	39° 02.11799379' S	142° 29.11372787' E
49	39° 02.03183320' S	142° 27.91372326' E
50	39° 00.42170730' S	142° 25.33371335' E
51	39° 00.34670144' S	142° 23.71370713' E
52	38° 59.91198412' S	142° 23.36431463' E
53	38° 59.60987911' S	142° 21.91370022' E
54	38° 58.47155480' S	142° 21.05119691' E
55	38° 58.32154307' S	142° 20.33869415' E
56	38° 57.39531042' S	142° 20.08229983' E
57	38° 54.91097211' S	142° 20.08262718' E
58	38° 54.91126034' S	142° 19.49311296' E
59	38° 52.89558406' S	142° 19.44936120' E
60	38° 48.37703382' S	142° 05.08240983' E
61	38° 44.91103279' S	142° 05.08257650' E
62	38° 44.91108501' S	142° 00.08263425' E
63	39° 11.94286807' S	143° 17.87027599' E
64	39° 16.47528270' S	143° 22.30949311' E
65	39° 20.06092597' S	143° 20.57419216' E
66	39° 26.62020368' S	143° 18.77559026' E
67	39° 32.07392342' S	143° 13.60836124' E
68	39° 34.88845915' S	143° 10.12976544' E
69	39° 29.88735579' S	143° 05.13151569' E
70	39° 29.89124228' S	143° 00.13061763' E
71	39° 24.94819321' S	143° 00.12446247' E
72	39° 24.94730466' S	143° 05.11972184' E
73	39° 21.53163278' S	143° 05.12246725' E
74	39° 33.59032489' S	143° 20.66339796' E
75	39° 37.15733857' S	143° 26.09439736' E
76	39° 42.74867396' S	143° 26.46098230' E
77	39° 45.00488668' S	143° 28.01933215' E
78	39° 47.06850571' S	143° 28.69981873' E
79	39° 47.21666243' S	143° 25.65092224' E
80	39° 46.03421957' S	143° 22.35879387' E
81	39° 46.07807668' S	143° 18.35538561' E
82	39° 37.04806931' S	143° 17.75687763' E
83	39° 33.63485063' S	143° 20.56599222' E
84	39° 59.17255805' S	143° 28.15411245' E
85	40° 04.01289861' S	143° 30.68658954' E
86	40° 10.63228586' S	143° 31.10065900' E
87	40° 10.70928975' S	143° 28.39518916' E
88	40° 03.36322311' S	143° 19.78864024' E
89	40° 00.49942886' S	143° 23.06683746' E
90	39° 59.19751598' S	143° 26.97859645' E

2.2. Potential Hydrocarbon Types

There are two types of hydrocarbons covered in this plan that are associated with the Otway exploration program:

- Marine Diesel Oil (MDO), and
- Gas Condensate.

2.2.1. Marine Diesel Oil

MDO is generally considered to be a low viscosity and non-persistent oil that readily degrades by naturally occurring microbes. MDO will spread quickly when released and forms a thin film on the sea surface, increasing the rate of evaporation. However, some heavy components will have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (i.e. >12 knots) and breaking waves but can re-float to the surface if these energies abate. Generally, about 6.0% of the MDO mass is predicted to evaporate within the first 12 hours (Boiling point (BP) < 180°C); with a further 34.6% evaporating within the first 24 hours (180°C < BP < 265°C); and an additional 54.4% evaporating over several days (265°C < BP < 380°C). Approximately 5% (by mass) of MDO will not evaporate, though will decay slowly over time. Characteristics of MDO are detailed in Table 2-1 and Table 2-2.

Table 2-1: Physical characteristics of MDO

Parameter	Characteristics
Density (kg/m3)	829 at 15°C
API	37.6
Dynamic viscosity (cP)	4.0 at 25°C
Oil category	Group II
Oil persistence classification	Light-persistent oil

Table 2-2: Boiling point ranges for MDO

Characteristic	Non-Persistent			Persistent
	Volatiles (%)	Semi-volatiles (%)	Low volatiles (%)	Residual (%)
Boiling point (°C)	<180	180 – 265	265 – 380	>380
Marine Diesel Oil	6.0	34.6	54.4	5

2.2.2. Gas Condensate

Reservoirs within the Otway Basin are expected to be gas condensate. As a result, no Group III-IV oils will be present during drilling activities. The characteristics for Thylacine condensate have been used as a proxy for LOWC, given that ConocoPhillips Australia do not have operational wells within the Otway Basin.

Thylacine condensate has an API of 44.3, a density of 805 kg/m3 (at 15ºC) and a low viscosity value of 0.875 cP. The volatile to semi-volatile components (boiling point (BP) < 265 ^{o}C), which represent approximately 83 % of the condensate is predicted to evaporate over the first day if exposed to the atmosphere at local temperatures, leaving the less volatile portion (16%) to progressively evaporate more slowly. Only 1% of the condensate is considered persistent. The heavier components (i.e. low volatile portion) of the condensate will tend to entrain in the upper water column during the presence of moderate winds (> 10 knots) and can potentially remain entrained for as long as the winds persist. It can subsequently resurface when the winds ease, and waves abate. Characteristics of Thylacine condensate are detailed in Table 2-3 and Table 2-4.

Table 2-3: Physical characteristics of Thylacine condensate

Parameter	Characteristics
Density (kg/m3)	805 at 15°C
API	44.3
Dynamic viscosity (cP)	9.95 at 50°C
Oil category	Group I
Oil persistence classification	Non-persistent oil

Table 2-4: Boiling point ranges for Thylacine condensate

Characteristic	Non-Persistent			Persistent
	Volatiles (%)	Semi-volatiles (%)	Low volatiles (%)	Residual (%)
Boiling point (°C)	<180	180 – 265	265 – 380	>380
Thylacine condensate	64.0	19.0	16.0	1.0

2.3. Risk/Credible Scenarios

The potential worst-case hydrocarbon spill scenarios relating to offshore petroleum activities are summarised in Table 2-5 and outlined below:

For seabed surveys, drilling rig and support vessel operations: a release of MDO from a vessel within the operational area.

- A vessel collision within the operational area resulting in a 350 m^3 surface release of MDO over 6 hours was identified as the worst-case credible spill scenario based on the AMSA Technical guidelines for preparing contingency plans for marine and coastal facilities (AMSA 2015). Calculation of discharge volume and timing align with the methodology recommended therein.

For drilling operations: an open-hole and unrestricted well release based on Worst Case Discharge (WCD) calculations.

- WCD calculations were completed in line with the ConocoPhillips Corporate Practice (Calculation and Documentation of Worst-Case Discharge, 2018) for a hypothetical Loss of Well Control (LOWC) scenario during exploration drilling. The WCD highest daily flow rate of hydrocarbons resulted in a predicted total spill volume of 139,400 m^3 over a 90-day duration.

Table 2-5: Summary of risk/credible scenarios for this OPEP

Spill Risk	Hydrocarbon Type	Worst-Case Volume	Spill Level	Location of spill	VIC/P79	T/49P
Vessel Collision	MDO	350 m^3 surface release over 6 hours	Level 1 or 2	Commonwealth	✓	✓
LOWC	Gas Condensate	139,400 m^3 over a 90-day duration.	Level 2 or 3	Commonwealth	✓	✓

Note. Further details regarding volumes, locations, potential release durations and environmental impacts are detailed within the Otway Exploration Drilling Program EP.

2.4. Response Planning Areas

Predictive modelling was used to identify areas that may be exposed to hydrocarbons from hypothetical worst-case spill scenarios. As per NOPSEMA's Oil Spill Modelling Guidance (NOSEMA 2019) the following 'Moderate' oil exposure thresholds listed in Table 2-6 were used to identify the primary response planning areas.

Table 2-6: Exposure value thresholds

Floating Surface Oil		
Moderate	10 g/m^2 (~10,000 litres/km^2)	Approximate lower limit for harmful exposures to birds and marine mammals.
Note. 50 g/m^2 (~50,000 litres/km^2) represents the lower limit for consideration of response planning for surface oil.		
Shoreline Oil		
Moderate	100 g/m^2	Represents the minimum thickness that does not inhibit the potential for recovery and is best remediated by natural coastal processes.

Given that specific drilling locations have not yet been identified, modelling was conducted for a range of locations to represent the full extent of possible drilling locations across both operational areas. The details of the modelled locations are provided in Table 2-7.

Table 2-7: VIC/P79 MDO and LOWC modelling release locations

VIC/P79	Latitude	Longitude	Water depth (m)
Location 1	39° 5' 17.4" S	142° 48' 23.1" E	93
Location 2	38° 43' 20.6" S	142° 26' 35.3" E	74
Location 3	38° 5' 8.9" S	142° 5' 8.9" E	66
Location 4	38° 30' 6.4" S	142° 7' 55.5" E	45
T/49P	**Latitude**	**Longitude**	**Water depth (m)**
Location 1	39° 15' 46.6" S	143° 20' 26.4" E	93
Location 2	39° 47' 49.7" S	143° 30' 46.3" E	100
Location 3	40° 13' 5.3" S	143° 29' 10.9" E	114

2.4.1. Onshore Priority Planning Areas

Based on the modelling outputs, priority shoreline planning areas have been identified for each permit area. For planning purposes, the scenarios presented in Tables 2-8 and 2-9, and shown in Figures 2-2 and 2-3, represent the worst-case modelling outputs for shoreline loading for each permit area.

Table 2-8: T/49P (LOWC) – Location 2

Location 2 (Stochastic - 100 runs/season)	139,400 m^3 released over 90 days	
Total Volume Ashore	196 m^3 in Winter, 71 m^3 in summer	
Impacted LGA's (>10% Probability)	**Volume (m^3)**	**Probability of shoreline contact (%) > 100gm/m^2**
Summer		
Circular Head	0.5	0%
King Island	71.6	96%
Reid Rock	<0.1	0%
Winter		
Anser Island	<0.1	0%
Circular Head	1.4	2%
Glennie Group	0.2	0%
Hunter Island	0.3	0%
Kanowna Island	0.2	0%
Kent Island Group	1.7	5%
King Island	196.3	100%
Norman Island	1.3	1%
Reid Rock	<0.1	0%
Skull Rock	0.2	0%
South Gippsland	3.5	1%
West Coast	0.5	0%
Wilsons Promontory West	3	1%
Location 2, (Deterministic) Worst Shoreline Accumulation (Winter)		
Total volume ashore	200 m^3	

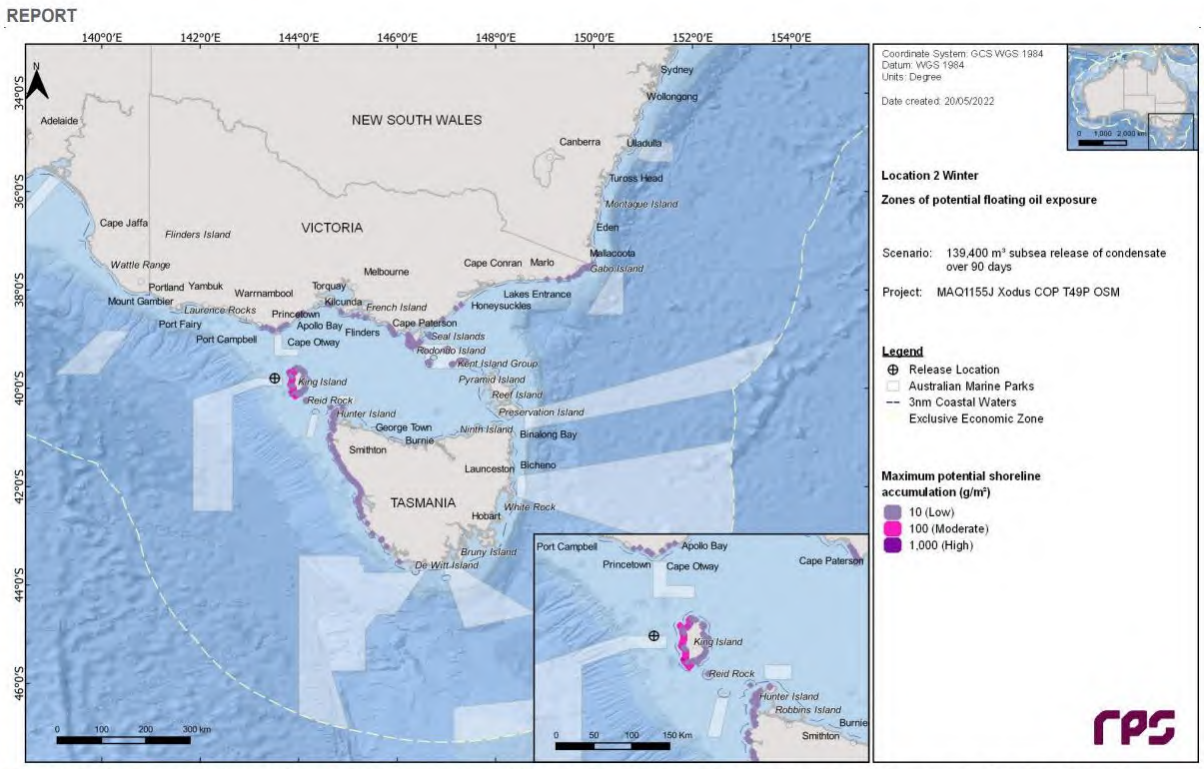


Figure 14.5 Maximum potential shoreline loading from a subsea LOWC at Location 2 during winter conditions. The results were calculated from 100 spill simulations.

Figure 2-2: T/49P Potential shoreline loading from a LOWC at Location 2, winter conditions.

Table 2-9: VIC/P79 (LOWC) – Location 4

Location 4 (Stochastic - 100 runs/season)	139,400 m^3 released over 90 days	
Total Volume Ashore	318.9 m^3 in Winter, 236.6 m^3 in summer	
Impacted LGA's (>10% Probability)	**Volume (m^3)**	**Probability of shoreline contact (%) > 100gm/m^2**
Summer		
Colac Otway	22.1	14%
Corangamite	36.3	79%
Glenelg	94.5	65%
Lady Julia Percy Islands	16.1	67%
Laurence Rocks	9.4	47%
Moyne	108.6	95%
Warrnambool	121.9	74%
Winter		
Anser Island	0.6	0%
Bass Coast	3.5	1%
Colac Otway	42.8	66%
Corangamite	96.2	96%
Glenelg	63.8	23%
Glennie Group	1.7	0%
Kanowna Island	0.7	0%
Lady Julia Percy Islands	19.5	50%
Laurence Rocks	6	13%
Mornington Peninsula	2	0%
Moyne	176.9	100%

Norman Island	5.2	6%
Phillip Island	1.3	0%
Rodondo Island	0.4	0%
Shellback Island	0.7	0%
Skull Rock	0.6	0%
South Gippsland	17.6	12%
Surf Coast	1.4	0%
Warrnambool	125.3	88%
Location 4, (Deterministic) Worst Shoreline Accumulation (Winter)		
Total volume ashore	250 m^3	

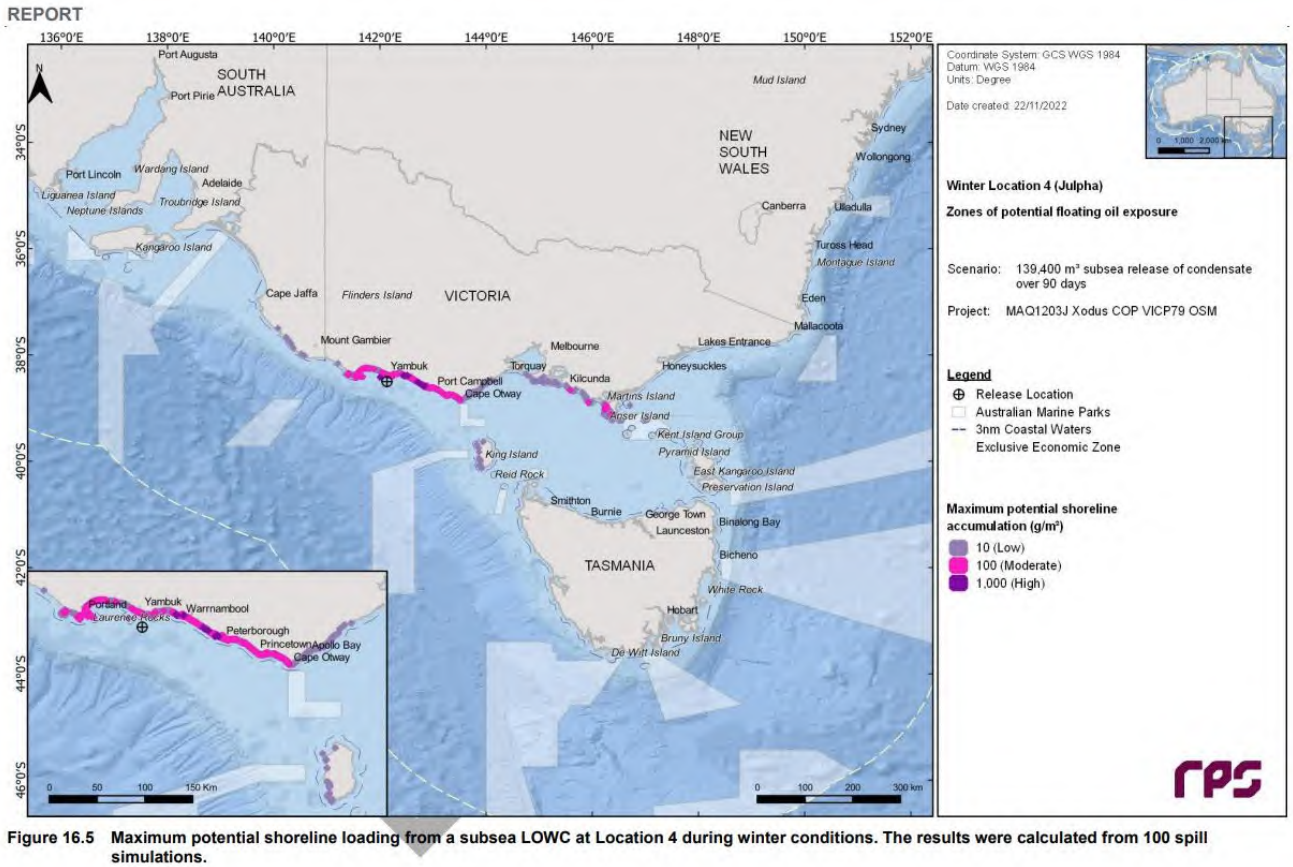


Figure 16.5 Maximum potential shoreline loading from a subsea LOWC at Location 4 during winter conditions. The results were calculated from 100 spill simulations.

Figure 2-3: VIC/P79 Potential shoreline loading from a LOWC at Location 4, winter conditions.

A timely and appropriate response for the identified areas for priority protection have been planned for in Section 5.3 – Shoreline Protection and Deflection and Section 5.4 – Shoreline Clean-up, of this OPEP. A series of Tactical Response Plans (TRPs) have been developed to assist in implementing a rapid response, details for implementation are outlined in the Shoreline Plan (Appendix 2).

2.5. Bass Strait – Environmental Conditions

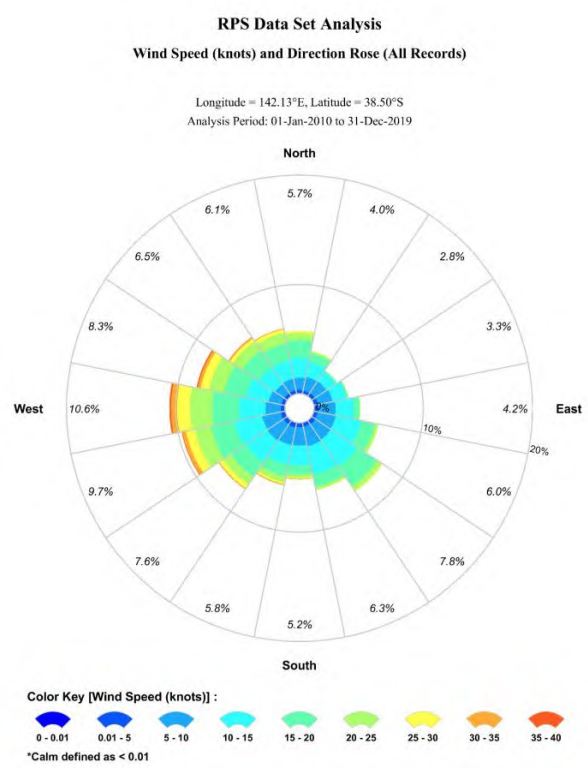
The Otway Basin lies within the western portion of the Bass Strait, a sea strait separating Tasmania from the southern Australian mainland. The strait is a relatively shallow area of the continental shelf, connecting the southeast Indian Ocean with the Tasman Sea. This region is characterised by high winds and strong tidal currents. The following information has been drawn from the prediction modelling report (MAQ115J) generated by RPS for ConocoPhillips Australia's proposed exploration activities.

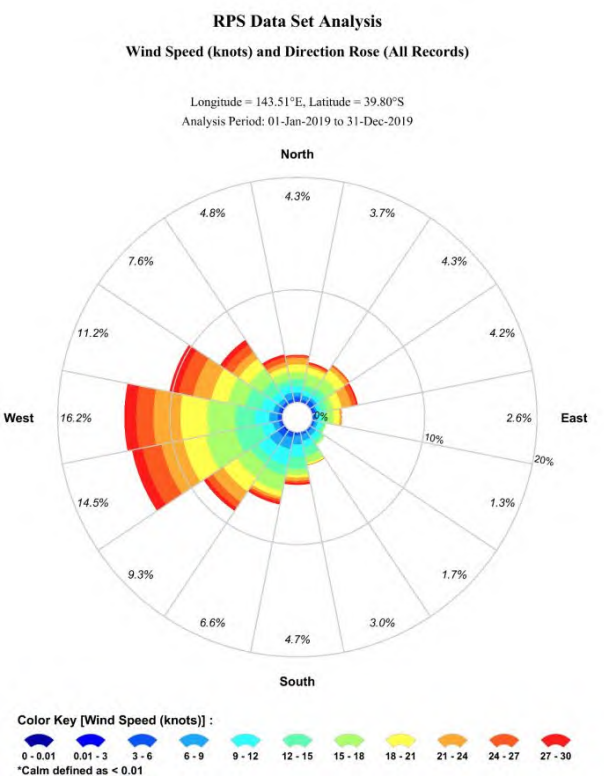
2.5.1. Temperature and Salinity

Monthly average sea surface temperatures range between 12.8°C (September, release location 3) and 18.4°C (March, release location 2). The monthly average salinity values remain relatively consistent ranging between 35.1 psu and 35.6 psu.

2.5.2. Wind

Wind speeds are predominantly 5-10 m/s year-round with stronger winds through the winter months. As per Section 2.4.1, the modelling outputs for VIC/P79 (LOWC) – Location 4 and T/49P (LOWC) – Location 2 indicated the greatest shoreline leading potential. Figure 2-4 provides the wind speed and direction roses for these locations.





VIC/P79 Potential shoreline loading from a LOWC at Location 4.

T/49P Potential shoreline loading from a LOWC at Location 2.

Figure 2-4: Wind speed and direction roses for representative locations

2.5.3. Current

Currents are primarily driven by tides, winds and density driven flows as follows:

- **Winter** - the South Australian current moves dense, salty water eastward from the Great Australian Bight into the western margin of the Bass Strait. During winter there is a strong eastward water flow due to the strengthening of the South Australian Current (fed by the Leeuwin Current in the Northwest Shelf), which bifurcates with one extension moving though the Bass Strait, and another forming the Zeehan Current off western Tasmania.
- **Summer** - water flow reverses off Tasmania, King Island and the Otway Basin travelling eastward, as the coastal current develops due to south-easterly winds.

2.6. Selection of Response Strategies – Net Environmental Benefit Analysis

An analysis of the feasibility and effectiveness of available response strategies has been completed. Section 7.8 of the EP provides detailed justification statements, particularly where strategies have been considered not feasible and/or not effective.

Table 2-10 summarises the response strategies that are considered to be feasible in response to an MDO spill and gas condensate release associated with the proposed exploration activities.

Table 2-10: Response strategy feasibility and implementation by hydrocarbon type

Response Strategy	Hydrocarbon Type		Feasible	Implementation
	Gas Condensate	Marine Diesel Oil		
Source Control	ü	ü	Yes	Yes
Surveillance, Modelling & Visualisation (SMV)	ü	ü	Yes	Yes
Natural Dispersion	ü	ü	Yes	Yes
In-situ Burning (ISB)	x	x	No	No
Surface Dispersant	x	x	No	No
Containment & Recovery (At-sea C&R)	x	x	No	No
Shoreline Protection & Deflection (P&D)	ü	ü	Yes	Yes
Shoreline Clean-up	ü	ü	Yes	Yes
Oiled Wildlife Response (OWR)	ü	ü	Yes	Yes
Waste Management	ü	ü	Yes	Yes
Operational & Scientific Monitoring (OSM)	ü	ü	Yes	Yes

2.6.1. Strategic (Pre-spill) NEBA

The following information reflects good practice as outlined in the IPIECA-IOGP Guideline: Response strategy development using net environmental benefit analysis (NEBA), 2016.

NEBA is a response tool used to select spill response strategies that are feasible to use safely in particular conditions, and will minimise the impact of the spill on the environment. The aim of its use is to support the selection of an agreed strategy for oil spill response, which has been informed by a systematic assessment and evaluation of multiple factors, with input from a number of stakeholders.

The NEBA process has been undertaken at a strategic level (pre-spill) to identify pre-determined recommended response strategies. An Operational NEBA will be undertaken routinely during a response to ensure that evolving conditions are understood, and response strategies are adjusted/optimised as necessary to meet the conditions at the time and specific end points.

The NEBA process comprises four stages:

1) *Compile and evaluate data* to identify an exposure scenario and potential response options, and to understand the potential impacts of that spill scenario.
2) *Predict the outcomes* for the given scenario, to determine which techniques are effective and feasible.
3) *Balance trade-offs* by weighing a range of ecological, social and economic benefits and drawbacks resulting from each feasible response option.
4) *Select the best response options* for the given scenario, based on which combination of tools and techniques will minimise impacts.

Multiple stakeholders are involved in the NEBA process, which relies on cooperation among governments, industry and communities to ensure that informed response decisions can be made which take all perspectives and viewpoints into account. During a spill, an Operational NEBA or Spill Impact Mitigation Assessment (SIMA) is to be completed to allow for strategy validation and adjustment as conditions evolve.

Pre-spill Strategic NEBA's are presented in Table 2-11 (MDO) and Table 2-12 (Gas Condensate), with the criteria used to determine receptor sensitivity ranking included in Table 2-13. These NEBA's are to be used to identify and agree on response strategies for each identified hydrocarbon type/scenario.

Table 2-11: Strategic NEBA – Marine Diesel

Category	Sensitivity	Ranking (H/M/L)	Surveillance, Modelling & Visualisation	Natural Dispersion	In-situ Burn	Dispersant	Contain & Recover	Protect & Deflect	Shoreline Clean-up	Oiled Wildlife Response	Waste Management	Operational & Scientific Monitoring
Ecological	Water Surface	Medium	P	P	NP	NP	NR	NP	NP	V	NP	P
	Upper Water Column	Medium	P	P	NP	NP	NR	NP	NP	V	NP	P
	Lower Water Column	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Benthos/Seabed	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Sandy Beaches	Low	P	P	NP	NP	NR	P	P	V	P	P
	Rocky Shores	Low	P	P	NP	NP	NR	NP	NP	V	NP	P
	Coastal TECs – Subtropical and Temperate Coastal Saltmarsh and Giant Kelp Marine Forests of Southeast Australia	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Wetlands – RAMSAR and Nationally	Medium	P	P	NP	NP	NR	P	NR	V	NP	P
	King Island Important Bird Area (IBA)	Medium	P	P	NP	NP	NR	P	NR	P	NR	P
	Victorian Coastal Reserves (Onshore Parks)	Low	P	P	NP	NP	NR	P	NR	V	NR	P
	Tasmanian Protected Areas (Onshore)	Low	P	P	NP	NP	NR	P	NP	V	NP	P
	Australian Marine Parks	Medium-High	P	P	NP	NP	NR	NP	NP	V	NP	P
	State Marine Parks	Medium	P	P	NP	NP	NR	NP	NP	V	NP	P
	West Tasmanian Canyons	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Bonney Coastal Upwelling	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Big Horseshoe Canyon	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Upwelling East of Eden	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Canyons of the Eastern Continental Shelf	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Benthic Assemblages and Marine Flora	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Plankton	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Invertebrates	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Fish (including sharks)	Low	P	P	NP	NP	NR	NP	NP	P	NP	P
	Marine Mammals (Cetaceans and Pinnipeds)	Medium-High	P	P	NP	NP	NR	NP	NP	P	NP	P
	Marine Reptiles (Turtles)	Medium	P	P	NP	NP	NR	NP	NP	P	NP	P

Category	Sensitivity	Ranking (H/M/L)	Surveillance, Modelling & Visualisation	Natural Dispersion	In-situ Burn	Dispersant	Contain & Recover	Protect & Deflect	Shoreline Clean-up	Oiled Wildlife Response	Waste Management	Operational & Scientific Monitoring
	Seabirds, Shorebirds, Migratory Birds and Aquatic Birds	Medium	P	P	NP	NP	NR	NP	NP	P	NP	P
Social	Shipwrecks	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Victorian Cultural Heritage Sites	Medium	P	P	NP	NP	NR	P	NR	NP	NR	P
	Tasmanian Cultural Heritage Sites (inc. King Island)	Medium	P	P	NP	NP	NR	P	NR	NP	NR	P
Economic	Commonwealth Managed Fisheries	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Victorian Managed Fisheries	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Tasmanian Managed Fisheries	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Shipping Traffic	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Defence Activities	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Offshore Infrastructure (other titleholders)	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Coastal Settlements (ports, marinas)	Medium-High	P	P	NP	NP	NR	P	NR	NP	NR	P
	King Island Industry	Medium	P	P	NP	NP	NR	P	NR	NP	NR	P
	Vic/Tas Coastal Aquaculture Intakes (Subsea)	Low	P	P	NP	NP	NR	NR	NR	NP	NR	P
	Victorian Desalination Plant Intake (Subsea)	Low	P	P	NP	NP	NR	NR	NR	NP	NP	P

Key		
P	Proposed	The Strategy will be deployed where safe to do so and where the NEBA indicates the strategy will result in net environmental benefit, and if the response or the spill is likely to impact State waters, the response will be approved by the State Jurisdictional Authority.
V	Viable	The Strategy will be considered as a viable option, but deployment may not be warranted because of the size of spill, conditions, and other factors at the time of the spill.
NR	Not Recommended	The Strategy may be viable but is not recommended either due to safety considerations or impacts of the strategy itself.
NV	Not Viable	The potential to deploy the Strategy effectively is limited.
NP	Not Practical	The Strategy cannot be implemented for the resource type, e.g., resource type is inaccessible and/or the resource type does not warrant this response.

Table 2-12: Strategic NEBA – Gas Condensate

Category	Sensitivity	Ranking (H/M/L)	Surveillance, Modelling & Visualisation	Natural Dispersion	In-situ Burn	Dispersant	Contain & Recover	Protect & Deflect	Shoreline Clean-up	Oiled Wildlife Response	Waste Management	Operational & Scientific Monitoring
Ecological	Water Surface	Medium	P	P	NP	NP	NR	NP	NP	V	NP	P
	Upper Water Column	Medium	P	P	NP	NP	NR	NP	NP	V	NP	P
	Lower Water Column	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Benthos/Seabed	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Sandy Beaches	Low	P	P	NP	NP	NR	P	P	V	P	P
	Rocky Shores	Low	P	P	NP	NP	NR	NP	NP	V	NP	P
	Coastal TECs – Subtropical and Temperate Coastal Saltmarsh and Giant Kelp Marine Forests of Southeast Australia	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Wetlands – RAMSAR and Nationally	Medium	P	P	NP	NP	NR	P	NR	V	NP	P
	King Island Important Bird Area (IBA)	Medium	P	P	NP	NP	NR	P	NR	P	NR	P
	Victorian Coastal Reserves/Onshore Parks	Low	P	P	NP	NP	NR	P	NR	V	NR	P
	Tasmanian Protected Areas (Onshore)	Low	P	P	NP	NP	NR	P	NP	V	NP	P
	Australian Marine Parks, Key Ecological Features	Medium-High	P	P	NP	NP	NR	NP	NP	V	NP	P
	State Marine Parks	Medium	P	P	NP	NP	NR	NP	NP	V	NP	P
	West Tasmanian Canyons	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Bonney Coastal Upwelling	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Big Horseshoe Canyon	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Upwelling East of Eden	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Canyons of the Eastern Continental Shelf	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Benthic Assemblages and Marine Flora	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Plankton	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Invertebrates	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Fish (including sharks)	Low	P	P	NP	NP	NR	NP	NP	P	NP	P
	Marine Mammals (Cetaceans and Pinnipeds)	Medium-High	P	P	NP	NP	NR	NP	NP	P	NP	P
	Marine Reptiles (Turtles)	Medium	P	P	NP	NP	NR	NP	NP	P	NP	P

Category	Sensitivity	Ranking (H/M/L)	Surveillance, Modelling & Visualisation	Natural Dispersion	In-situ Burn	Dispersant	Contain & Recover	Protect & Deflect	Shoreline Clean-up	Oiled Wildlife Response	Waste Management	Operational & Scientific Monitoring
	Seabirds, Shorebirds, Migratory Birds and Aquatic Birds	Medium	P	P	NP	NP	NR	NP	NP	P	NP	P
Social	Shipwrecks	Low	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Victorian Cultural Heritage Sites	Medium	P	P	NP	NP	NR	P	NR	NP	NR	P
	Tasmanian Cultural Heritage Sites (inc. King Island)	Medium	P	P	NP	NP	NR	P	NR	NP	NR	P
Economic	Commonwealth Managed Fisheries	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Victorian Managed Fisheries	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Tasmanian Managed Fisheries	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Shipping Traffic	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Defence Activities	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Offshore Infrastructure (other titleholders)	Medium	P	P	NP	NP	NR	NP	NP	NP	NP	P
	Coastal Settlements (ports, marinas)	Medium	P	P	NP	NP	NR	P	NR	NP	NR	P
	King Island Industry	Medium	P	P	NP	NP	NR	P	NR	NP	NR	P
	Vic/Tas Coastal Aquaculture Intakes (Subsea)	Low	P	P	NP	NP	NR	NR	NR	NP	NR	P
	Victorian Desalination Plant Intake	Low	P	P	NP	NP	NR	NR	NR	NP	NP	P

Key		
P	Proposed	The Strategy will be deployed where safe to do so and where the NEBA indicates the strategy will result in net environmental benefit, and if the response or the spill is likely to impact State waters, the response will be approved by the State Jurisdictional Authority.
V	Viable	The Strategy will be considered as a viable option, but deployment may not be warranted because of the size of spill, conditions, and other factors at the time of the spill.
NR	Not Recommended	The Strategy may be viable but is not recommended either due to safety considerations or impacts of the strategy itself.
NV	Not Viable	The potential to deploy the Strategy effectively is limited.
NP	Not Practical	The Strategy cannot be implemented for the resource type, e.g., resource type is inaccessible and/or the resource type does not warrant this response.

Table 2-13: Criteria used to determine receptor sensitivity ranking (H/M/L) in the NEBA

Sensitivity*	Protected areas	Species status	BIA	Coastal habitat sensitivity	Receptors in the EMBA
Low	No State marine protected areas. Commonwealth multiple use zones are the dominant component of protected areas.	Species is EPBC Listed, and impact expected to be limited to individuals with no population level impact. Present in the EMBA only occasionally or as vagrants, with no biologically important behaviours occurring. Populations known to recover rapidly from disturbance.	No BIA (or limited to only a few species of a particular faunal grouping).	Low sensitivity habitat, such as sandy beaches and exposed rocky shores, with rapid recovery from oiling (approximately 1 year or less). Public recreation beaches are not present or not widely used. No harbours or marinas.	• Benthic assemblages • Plankton • Invertebrates • Fish, including eels • Sandy beaches • Rocky shores • Non-indigenous heritage
Medium	No State marine protected areas. Little to no Commonwealth special purpose zonation.	Species may be EPBC Listed threatened or vulnerable and impact expected to be limited to individuals with no population level impact. Species may or may not be present at time of activity, however not undertaking biologically important behaviours. Some susceptibility to oiling. Populations may take a moderate time to recover from oiling.	Intersection with one or more BIAs, generally for distribution or foraging rather than breeding.	Moderately sensitive habitat present, such as sheltered rocky rubble coasts, exposed tidal flats, gravel beaches, mixed sand and gravel beaches, with a medium recovery period from oiling (approximately 2–5 years). Public recreation beaches present but not often used. No harbours or marinas.	• Marine reptiles • Seabirds • Coastal habitats and communities • Some cetaceans • Commercial fisheries • Other marine and coastal users • Energy exploration and production • First Nations heritage
High	State marine protected areas present. Commonwealth special purposes zones are the dominant component of the protected area.	Species are EPBC Listed Endangered or Critically Endangered Species known to be present at time of activity, undertaking biologically important behaviours. Known to be susceptible to oiling. Populations may take a long time to recover from oiling.	Significant intersection with one or more BIAs Notable overlap with spatially restricted BIA (e.g. breeding, nesting, migration)	Sensitive habitat present, such as mangrove, salt marshes, and sheltered tidal flats, with long recovery periods from oiling (> 5 years). Public recreation beaches present that are widely used. Busy harbours or marinas.	• Some cetaceans • Pinnipeds • Shorebirds • Aquatic birds • State Marine Protected Areas

* Not to be confused with ‘risk rating’ which is based on the ConocoPhillips Risk Matrix

2.7. Statutory and Control Agencies

In any instance of a spill from ConocoPhillips Australia's petroleum activities, response activities should be considered to be regulated by NOPSEMA and directed by this OPEP, until such time as another control agency verifies its intention to stand up and assert control. As a response grows in size and complexity, a range of other parties and agencies may become involved, either to acquit a legislative obligation, or to provide support to a control agency as defined in Table 2-14.

Table 2-14: Oil spill response arrangements

Location	Spill Source	Jurisdictional Authority	Control Agency	
			Level 1	Level 2/3
Commonwealth waters (>3 NM from shorelines)	Petroleum Activity	NOPSEMA	ConocoPhillips	ConocoPhillips
	Vessel	AMSA	Vessel Owner/ Operator	AMSA
State waters (<3 NM of coastline)	Petroleum Activity	VIC DTP TasEPA	ConocoPhillips	VIC DTP/ TasEPA
	Vessel	VIC DTP TasEPA	Vessel Owner/ Operator	VIC DTP/ TasEPA or Relevant Port Authority

NOPSEMA – National Offshore Petroleum Safety and Environmental Management Authority; AMSA – Australian Maritime Safety Authority; VIC DTP – Victorian Department of Transport and Planning; TasEPA – Tasmanian Environment Protection Authority.

In all cases, for spills originating from ConocoPhillips Australia's assets and activities, ConocoPhillips Australia will facilitate the provision of resources to the control agency for their use in mitigating the consequences of the spill.

2.7.1. Control Agency Arrangements

The control agencies for the spill scenarios within the scope of this OPEP are detailed in Table 2-15.

Table 2-15: Control agency and jurisdiction

Activity	Control Agency and Jurisdiction
Vessels beyond 3 nm of the coast	**AMSA** Under the National Plan arrangements, AMSA may request that the state take control if: • The spill is likely to impact on the Victorian or Tasmanian shoreline • AMSA personnel are in-transit to the location of the incident and/or • It is more practical to have the state respond on behalf of AMSA.
Offshore petroleum activity beyond 3 nm of the coast	**ConocoPhillips Australia** Note: The state agency may provide a liaison officer within the IMT. The state agency will assume incident control for any portion of the spill that enters state waters, with ongoing support from ConocoPhillips Australia as Titleholder.

2.7.2. Commonwealth Arrangements

The Australian Maritime Safety Authority (AMSA) is the control agency for oil spills from vessels within Commonwealth waters. Upon notification of an incident involving a ship, AMSA will assume control of the incident and response in accordance with the National Plan for Maritime Environmental Emergencies. ConocoPhillips Australia will provide all available resources to AMSA to assist with the spill response, via the ConocoPhillips Australia Liaison Officer.

A Maritime Emergency Strategic Coordination Committee (MESCC) may be formed in the event of a significant maritime environmental emergency involving a ship within Commonwealth waters, or where the

Australian Government is supporting a state under the National Plan arrangements. The MESCC is led by AMSA.

An Offshore Petroleum Incident Coordination Committee (OPICC) may be formed in the event of a significant offshore petroleum incident in Commonwealth waters. The OPICC is led by the Commonwealth Department of Industry, Science, and Resources (DISR).

2.7.3. Victorian State Arrangements

In Victoria, the Department of Transport and Planning (DTP) will assume control of response activities within 3 NM of the shoreline. ConocoPhillips Australia will maintain control of response operations for petroleum activity-related spills in Commonwealth waters and will provide available resources to the DTP to assist with the spill response, via the ConocoPhillips Australia Liaison Officer. This includes trained oil spill responders, shoreline equipment, shoreline tactical response and waste management plans and strategies. ConocoPhillips Australia will also mobilise resources as needed through the Australian Marine Oil Spill Centre (AMOSC) and the National Plan.

2.7.4. Tasmanian State Arrangements

In Tasmania, the Environment Protection Authority (EPA) is the control agency (and Hazard Management Agency) for spills within 3 NM of the shoreline. ConocoPhillips Australia will maintain control of response operations for petroleum activity-related spills in Commonwealth waters and will provide available resources to TasEPA to assist with the spill response, via the ConocoPhillips Australia Liaison Officer. This includes trained oil spill responders, shoreline equipment, shoreline tactical response and waste management plans and strategies. ConocoPhillips Australia will also mobilise resources as needed through the Australian Marine Oil Spill Centre (AMOSC) and the National Plan.

2.7.5. Cross Jurisdictional Arrangements

To facilitate the overarching coordination between two or more controlling agencies and their respective IMT's, a Joint Strategic Coordination Committee (JSCC) will be established similar to Figure 2-5. The JSCC will be chaired by the State Marine Pollution Controller (SMPC) and ConocoPhillips Australia's Crisis Management Team (CMT) leader. Attendees will be as deemed necessary by the chairs to ensure an effective coordinated response across jurisdictions. The role of the JSCC is to facilitate effective coordination between ConocoPhillips Australia and the State Control Agency IMTs.

In a cross-jurisdictional marine pollution incident, ConocoPhillips Australia and each State Control Agency shall each deploy a Liaison Officer to corresponding IMTs for effective communication between IMTs. Allowance has been made for multiple liaison officers as shown in Appendix 1: IMT Capability Assessment, Part C: IMT Resourcing. The role of the Liaison Officers includes, but is not limited to:

- Represent their department/company and provide the primary contact for company, inter-agency and/or inter-State coordination.
- Facilitate effective communications between Incident Controllers and ConocoPhillips Australia's CMT / Incident Commander.
- Provide enhanced situational awareness of the incident and the potential impact on State waters.
- Facilitate the delivery of technical advice from the state control agencies to the ConocoPhillips Australia Incident Commander as required.

ConocoPhillips Australia Liaison Officer/s will work under the direction of the state Control Agency/ies and will be responsible for supplying additional resources to the Control Agency as required. This would be via internal ConocoPhillips Australia's resources, AMSA, and/or AMOSC service contract.

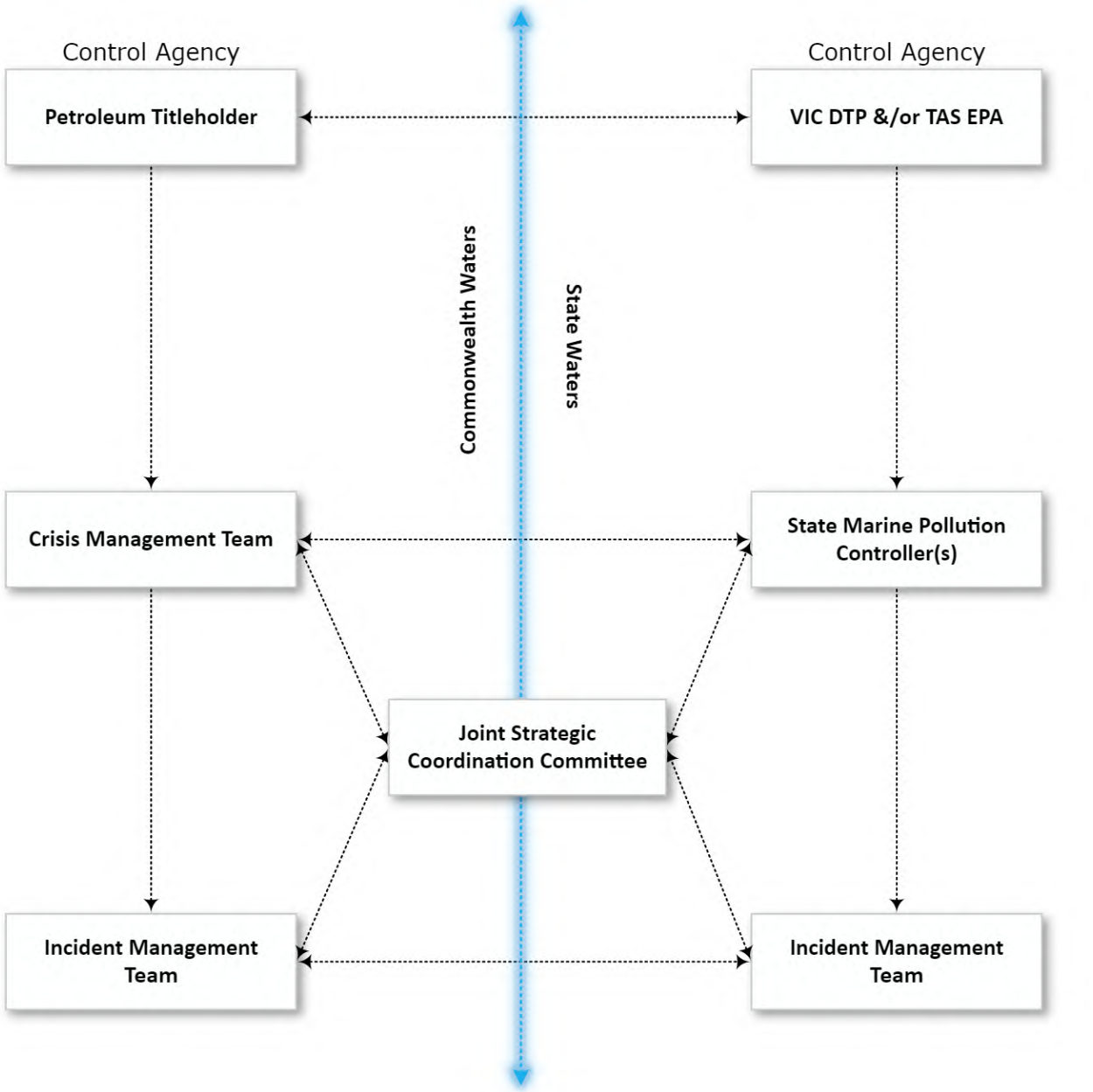


Figure 2-5: Proposed cross jurisdictional control and coordination structure.

Figure 2-5 is adapted from the Offshore Petroleum Industry Guidance Note – Marine Oil Pollution: Response and Consultation Arrangements, 2020.

2.7.6. Coordination

ConocoPhillips Australia will stand-up the in person IMT in Brisbane, Queensland where an Emergency Command Centre is in place. Coordination with offsite ConocoPhillips Personnel can occur through the existing systems established for remote access via virtual IAP software and Microsoft Teams.

A Forward Operating Base will be established, initially at AMOSC offices in Geelong following a level 2/3 incident, to coordinate the regional response activities for the duration. Additional/ alternative FOBs will be established in consultation with the State Control Agencies and should drilling be conducted within T/49P adjacent to King Island, additional resources will be stage on the island prior to the commencement of drilling, to enhance response timeframes (Org ID: 33 Environmental Protection Authority (EPA) Tasmania, Event ID: 1657, FB ID: 1277).

3. Response Activation

The following section details the actions that ConocoPhillips Australia will undertake in the event of hydrocarbon spill resulting from the Otway Exploration Drilling Program. Figure 3-1 provides a spill response incident flowchart to guide response personnel.

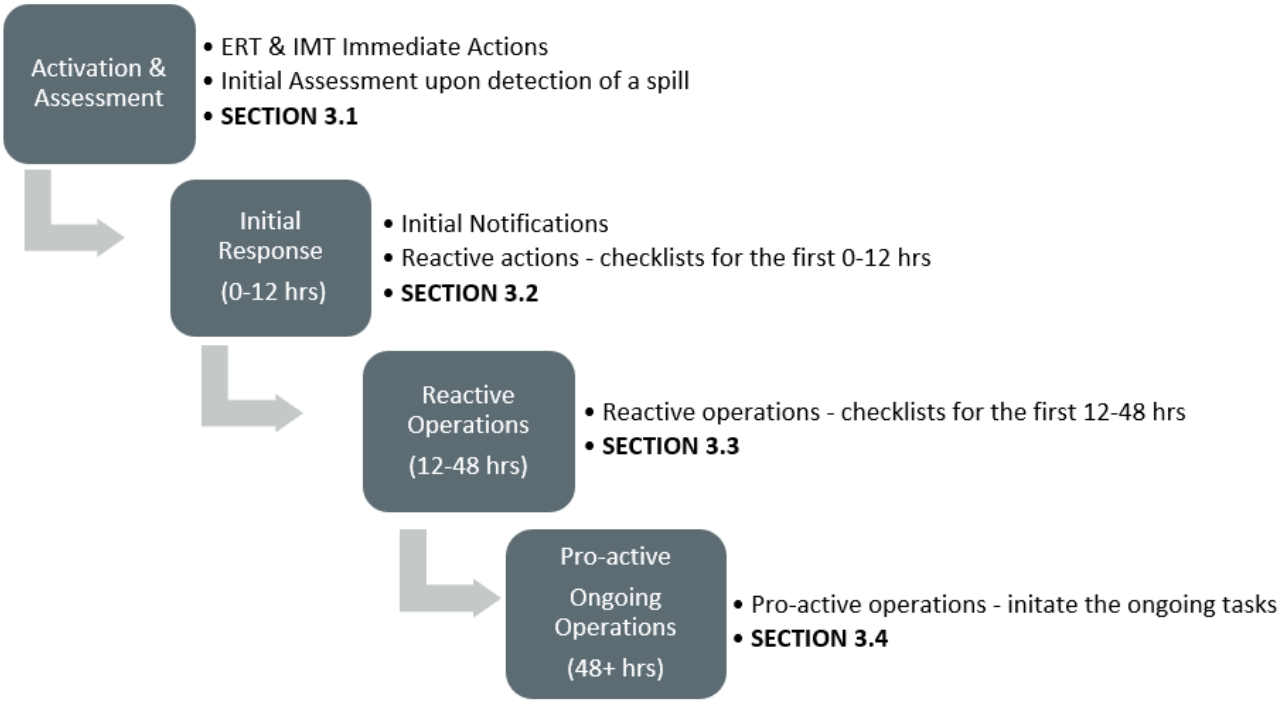


Figure 3-1: Spill response incident flowchart

Once initiated, spill response operations should continue until termination end points and environmental performance objectives are reached for each response strategy.

3.1. Activation and Assessment

3.1.1. Activation – Emergency Response and Incident Management Teams

Upon detection of a spill, the Offshore Installation Manager (OIM) or the Vessel Master (VM) will undertake the following actions:

- Begin a risk assessment in order to determine (and then execute) safety mitigations
- Determine the size, bearing/trajectory and fate (weathering) of the spill
- Judge the potential environmental impacts and the appropriate actions necessary to reduce those impacts
- Execute any available source control options/first-strike response actions, and
- Notify the ConocoPhillips Australia (Brisbane-based) duty Incident Commander (IC) of the incident await further instructions as to the appropriate actions to take.

The following checklist (Table 3-1) outlines the immediate actions to be completed.

Table 3-1: OIM/VM immediate actions

Who	What	Minimum time to implement	✓/x
Observer of Spill	Report the spill to the Offshore Installation Manager (OIM) or Vessel Master (VM).	ASAP	☐
OIM/VM	Secure operations, assess and report damage. Isolate spill source if it is safe to do so.	ASAP	☐
OIM/VM	Ensure that all personnel are accounted for.	ASAP	☐
OIM/VM	Conduct a hazard assessment to determine the potential for fire, explosion, and hazardous/toxic vapours as well as to define the personal protective equipment (PPE) needed by responders.	ASAP	☐
OIM/VM	Implement spill mitigation measures to prevent further oil from entering the water, providing it is safe to do so. Activate the Emergency Response Team (ERT) as required.	ASAP	☐
OIM/VM	OIM/VM to initiate upward internal communications to the Duty Incident Commander. Observe and include the following information in the brief: • Number of injuries. • Note ongoing immediate hazards to life (such as risk of • fire or explosion). • Description of incident. • Location of the incident. • Status of source. • Time of incident. • People and assets involved in the incident. • Current field objectives/actions. • Details of support required from COP IMT.	ASAP	☐
OIM/VM	Observe and report on weather and sea states, including: • Current/tide-stream speed, direction and period • Wind speed, direction and period • Wave height and direction • Swell height and direction.	ASAP	☐
OIM/VM	Observe and determine the spill trajectory (manual plotting), noting the speed and direction of the spill.	ASAP	☐
OIM/VM	Observe and determine the likely spill type and volume: Is the source contained, ongoing, isolated or stopped? Provide a visual description of the slick (e.g. is it breaking up, floating, sinking, etc.) What type of spill is it (MDO, Gas Condensate)? Calculate/estimate the spill volume (refer to OSMP O1 – Oil Spill Surveillance).	ASAP	☐
OIM/VM	Observe and note any immediate sensitivities in the area at risk from the spill. Note the presence of people, environmental sensitives (e.g. fauna, reef, etc.).	ASAP	☐
OIM/VM	Request helicopter overflight and commence regular surveillance of the spill. Evaluate spill weathering.	ASAP	☐
OIM/VM	Remain available to update the Offshore Incident Management Team.	Ongoing	☐
OIM/VM	Evaluate the incident and determine the incident classification/level based on the below national plan levels (Section 3.2.1). Confirm this level with the on-call/duty Incident Commander.	ASAP	☐
OIM/VM	Report the incident to NOPSEMA (as per Section 3.2.1).	ASAP and within 2hrs	☐

Once the Duty IC has been notified of the spill, go to Table 3-2: IMT Immediate Actions

Table 3-2: Incident Management Team (IMT) immediate actions

Who	What	Minimum time to implement	✓/x
IC	Establish communications with the Offshore Installation Manager (OIM) or Vessel Master (VM) to obtain situational awareness briefing and determine the next steps. Confirm the following details with the field-based team: • Incident details – what happened? • What are the current field operations? • What are the immediate incident objectives and priorities? • What support is required from the COP IMT in order to execute the immediate objectives?	ASAP	☐
IC	Activate the COP IMT and then: • Provide an initial incident briefing to the IMT. • Commence the incident action-planning process. • Commence the size-up of the incident. • Establish incident response aim and objectives and offer support to the affected facility. • Begin working to meet incident and oil spill response objectives.	< 60 mins	☐
IC	Notify the Crisis Manager of the incident and request Crisis Management Team (CMT) support as required.	ASAP	☐
IC	Notify Health, Safety and Environment (HSE), Governance and External Affairs (GEA) and Security of the incident.	ASAP	☐
IC	In conjunction with the Planning Section Chief (PSC), Environmental Unit Lead (EUL) and the HSE and Security team, determine and confirm the appropriate response level. Use the *Response Level Assessment Table 3-3* below to drive this process.	4 hours	☐
IC, PSC and OSC	In conjunction with the PCS and Operations Section Chief (OSC) determine the response required of COP: • Stand down – no spill/no oil left. • Level One – monitoring of site-based response until completion. • Level Two or Three – significant field and IMT escalation with significant additional resources required.	5 hours	☐
Once Activation and Initial Actions are completed, move on to Section 3.2.1.			

3.1.2. Spill Classification - Response Level Assessment

Under the NatPlan (AMSA, 2020), marine hydrocarbon spills and their response requirements are categorised into three levels, based on a combination of factors:

- The known or inferred spill size, scale and complexity
- The likely fate of the spill
- Environmental, socio-economic and cultural values likely to be impacted, and
- The available resourcing levels as needed to mitigate consequences, and level of support/escalation required.

The NatPlan identifies three levels of incidents as follows:

- **Level 1** – Incidents are generally able to be resolved through the application of local or initial resources only (e.g. first-strike capacity)
- **Level 2** – Incidents are more complex in size, duration, resource management and risk and may require deployment of jurisdiction resources beyond the initial response, and

- **Level 3** – Incidents are generally characterised by a degree of complexity that requires the Incident Controller to delegate all incident management functions to focus on strategic leadership and response coordination and may be supported by national and international resources.

In the event of a spill occurring where effective response is considered beyond the immediate response capabilities (i.e. a spill above Level 1), the response will be escalated immediately to the next level.

Table 3-3 summarises the hydrocarbon spill level response models adopted for this OPEP, as per NatPlan Guidance. On the basis of the information gathered by the ERT/IMT, a spill level is to be determined using the following indicators defined in Table 3-3.

Table 3-3: Response level assessment

Criteria	Level One Indicator	Level Two Indicator	Level Three Indicator
Location	Incident area only	One or two incident areas	Multiple incident areas
Complexity	Response is managed by control agency IMT	Medium	High
Duration	Less than or a single shift	Multiple shifts	Protracted response
Spill status	Little or no potential for escalation	Escalation required	Declared state of emergency/disaster
Impact	Little or no impact	Medium impact	Major impact
Resources	Single or limited multi-agency response Locally sourced resources	Multi-agency response Local and State sourced resources	Multi-agency response Local, State and Nationally sourced resources

3.2. Initial Response (0-12hrs)

3.2.1. Notifications

Once a spill has occurred, internal and regulatory notifications are to be made in accordance with the following requirements outlined in Table 3-4 for vessel spills (MDO) and Table 3-5 for a LOWC event.

Table 3-4: Notification requirements for a vessel spill (MDO)

MDO Spill – Vessel Operations				
From	**To**	**Timing**	**Complete**	**Notes**
Vessel Master/ Client Rep	COP Duty Manager Ph: As per IMT Duty Roster	ASAP	☐	
Vessel Master	AMSA • Verbally via phone Ph: +61 02 6230 6811 or 1800 641 792 • Written Web: https://amsa-forms.nogginoca.com/public/	• Verbally: Immediately • Written POLREP: ASAP (Appendix 8) • SITREPs (Appendix 7): As Requested	☐	
Vessel Master	State and Port Authorities (if in or threatening state waters) **VICTORIA** • Port of Portland (SA Border to Cape Otway) Ph: +61 3 5525 2450 • Ports Victoria (Cape Otway to Southeast Point of Wilsons Promontory) Ph: +61 3 9644 9745 • Gippsland Ports (Southeast Point of Wilsons Promontory to NSW Border) Ph: +61 408 185 591 • Port of Hastings Duty Officer Ph: +61 437 645 026 • Level 2/3 Incidents to Vic DoT State Duty Officer Ph: +61 409 858 715 **TASMANIA** • Tasmania EPA (TasEPA) Ph: 1800 005 171	ASAP	☐	
COP Duty Officer	COP IMT and CMT via the Emergency Call Centre Ph: +61 8 6324 0341	If required	☐	
IMT IC or Delegate	AMOSC Duty Officer Ph: +61 438 379 892	As soon as Practical	☐	Provide initial SITREP and resources required (App. 8). Note: CAA must confirm activation of AMOSC and execute a response Contract Note.
IMT IC or Delegate	NOPSEMA Ph: 1300 674 472 Email: submissions@nopsema.gov.au	• < 2hrs verbally • Form FM0831 within 3 days	☐	Form available at https://nopsema.gov.au/offshore-industry/report-incident
IMT IC or Delegate	AMOSC Duty Officer	If required	☐	Activation of Oil Spill Trajectory Modelling (OSTM)
IMT IC or Delegate	AMOSC Duty Officer	If required	☐	Activation of Satellite Imagery
IMT IC or Delegate	The DNP – where a spill occurs within an Australian Marine Park (AMP), or is likely to affect any AMP.	Director of National Parks – 0419 293 465 (24hr Duty Officer)	☐	Notification to include: titleholder details; time and location of incident; proposed response arrangements and locations; contact details for response.

Table 3-5: Notification requirements for a LOWC event

Gas Condensate (LOWC) Spill – Offshore Drilling Activity				
From	**To**	**Timing**	**Complete**	**Notes**
OIM/Client Rep	COP Duty Officer Ph: As per IMT Duty Roster	ASAP	☐	
COP Duty Officer	COP IMT and CMT via the Emergency Call Centre Ph: +61 8 6324 0341	ASAP	☐	Activation of IMT and CMT to support LOWC
IMT IC or Delegate	AMOSC Duty Officer Ph: +61 438 379 892	As soon as Practical	☐	Activation of AMOSC to support CoP operations • Moblisation of SMV options (Aerial Observation, Tracking Buoys, OSTM) • Mobilisation of spill response equipment (Shoreline Protection & Deflection, Shoreline Clean-up & Oiled Wildlife Response). • Moblisation of advisors into the IMT
IMT IC or Delegate	NOPSEMA Ph: 1300 674 472 Email: submissions@nopsema.gov.au	• < 2hrs verbally • Form FM0831 within 3 days	☐	Form available at https://nopsema.gov.au/offshore-industry/report-incident
IMT IC or Delegate	State and Port Authorities (if in or threatening state waters) **VICTORIA** • Vic DTP State Duty Officer Ph: +61 409 858 715 **TASMAINIA** • Tasmania EPA (TasEPA) Ph: 1800 005 171	As soon as Identified	☐	If threatening Port Waters, contact relevant Port Authorities • Port of Portland (SA Border to Cape Otway) Ph: +61 3 5525 2450 • Ports Victoria (Cape Otway to Southeast Point of Wilsons Promontory) Ph: +61 3 9644 9745 • Gippsland Ports (Southeast Point of Wilsons Promontory to NSW Border) Ph: +61 408 185 591
IMT IC or Delegate	Adjacent Titleholders	As soon as practicable	☐	
Planning Section Chief	Australian Hydrographic Service Ph: +61 2 4223 6500 Email: datacentre@hydro.gov.au	As soon as practicable	☐	Advise of affected areas for safety of navigation for mariners.
IMT IC or Delegate	AMSA Ph: +61 02 6230 6811	• Verbally: <2hrs	☐	AMSA notified of marine pollution incident and if NatPlan resources are required by titleholder.
Planning Section Chief	Victorian Department of Energy, Environment and Climate Action (DEECA) Wildlife Emergencies State Duty Officer Ph: 1300 114 828 Email: Sccvic.sdo.delwpwildlife@scc.vic.gov.au	• As soon as wildlife impact predicted or identified or in VIC waters	☐	
Planning Section Chief	The DNP – where a spill occurs within an Australian Marine Park (AMP), or is likely to affect any AMP. The DNP may request daily/weekly Situation Reports, depending on the scale and severity of the incident.	• Director of National Parks – 0419 293 465 (24hr Duty Officer)	☐	Notification to include: titleholder details; time and location of incident; proposed response arrangements and locations; contact details for response.

3.2.2. Reactive Actions – Level 1 Checklists for 0-12 hrs

The reactive actions relevant to the first 12 hours of a Level 1 incident are provided in Table 3-6. The responsible IMT function is listed – see description below for functional role clarification.

Table 3-6: Reactive Actions: Level 1 - 0-12-hour actions

Who	What	Minimum time to implement	✓/x
IC	Ensure all necessary regulatory notifications have been made.	12 hours	☐
IC	Commence the planning cycle (the 'stem' of the planning 'P'): Establish incident aim and objectives Determine appropriate initial strategies and tactics to achieve objectives.	ASAP – <2 hours	☐
OPS	If the source is not controlled, establish a Source Control Branch to develop and implement the Source Control Plan.	ASAP	☐
OPS	Undertake aerial surveillance: • Deploy surveillance by contracted aircraft. • Initiate mobilisation of a trained aerial observer – COP or AMOSC. • Obtain photographs or video footage. • Obtain completed aerial observer's report and pass to the PSC/SITL.	ASAP, then 2x daily	☐
OPS	Deploy a regular watch of the affected asset(s)/vessel – confirm heading/changes to the situation.	ASAP then by reporting exception.	☐
LOG	Confirm the location of aerial and marine assets currently contracted to COP.	4 hours	☐
PLA	Initiate specific elements of OM01 of OSMP, including tasks below (Table 4-13)	ASAP	☐
PLA	Monitor and predict weather and sea states: Consult meteorology services to determine water current and wind speed data, either from http://www.bom.gov.au or http://www.marineweather.net.au	4 hours	☐
PLA	Conduct a manual forecast of the spill trajectory: Determine the direction of the spill. Determine if the spill is likely to cross into state waters, impact shorelines and/or impact other sensitivities.	4 hours	☐
PLA	Activate third-party trajectory modelling of the spill trajectory: Organise oil-spill trajectory modelling via AMOSC/RPS (if not already done – see Table 3-5)	4 hours	☐
SIT	Establish a common operating picture – Display overflight, OSTM/manual vectoring data, spill location, assets deployed to spill site	4 hours	☐
PLA	Prepare and disseminate SITREPs (Appendix 7) as more information becomes available. (Frequency to be dictated by IC)	Ongoing	☐
PLA	Identify potential exposed environmental sensitivities based on spill trajectory, consult the NEBA (Section 2.6.1), and develop an Incident Action Plan of spill response strategies, including a spill-specific NEBA.	12 hours	☐
Once these actions are complete, move to Section 3.3 of this plan.			

IC – Incident Commander; OPS- Operations Section; LOG – Logistics Section; PLA - Planning Section; SIT – Situation Unit

3.2.3. Reactive Actions – Level 2/3 Checklists for 0-12 hrs

The reactive actions relevant to the first 12 hours of a Level 2/3 incident are provided in Table 3-7. The responsible IMT function is listed – see description below for functional role clarification.

Table 3-7: Reactive Actions: Level 2/3 – 0-12 hours actions

Who	What	Minimum time to implement	✓/x
IC	Seek alignment on incident priorities from the CMT.	ASAP	☐
IC	Confirm all necessary regulatory notifications have been made.	<2 hours	☐
IC	Commence the planning cycle (the 'stem' of the planning 'P'): Establish the incident response aim and objectives. Determine appropriate strategies and tactics to achieve objectives.	ASAP – <6 hours	☐
IC	Establish full, Brisbane-based COP IMT.	<2 hours	☐
IC	Establish a line of communications with the State IMT and exchange Liaison Officers.	<2 hours	☐
IC	Establish a line of communication with AMSA, NOPSEMA and OPICC. Facilitate integration o of relevant liaison officers.	<2 hours	☐
IC	Initiate the activation of the ConocoPhillips GIMAT and virtual IMT platform.	<24 hours	☐
OPS	If the source is not controlled, establish a Source Control Branch to develop and implement the Source Control Emergency Response Plan (SCERP).	ASAP	☐
OPS	Undertake aerial surveillance: • Initiate aerial surveillance using contracted aircraft. • Initiate the mobilisation of a trained aerial observer – COP or AMOSC. • Obtain photographs and video footage of the incident. • Obtain a completed aerial observer's report and pass to the PSC/SITL.	ASAP, then twice daily	☐
OPS	Deploy a twice-daily vessel observation - confirm heading/changes to the situation.	ASAP then by reporting exceptions.	☐
OPS	On the advice of the Drilling Engineer/Source Control Branch, mobilise the Subsea First Response Toolkit (SFRT) via AMOSC.	4 hours	☐
LOG	Confirm the location of aerial and marine assets currently contracted to COP. Confirm the location and availability of vessels of opportunity in VIC/TAS.	<3 hours	☐
LOG	Request that 3 x AMOSC Technical Advisors come to the site (IMT) and that 3 x AMOSC Operations Officers are deployed to support field operations (Aviation/ Shoreline). Request that AMOSC undertake the call-out of CG resources. Request the mobilisation of additional satellite tracking buoys (if required). Discuss potential equipment and service needs (spill-type specific) with AMOSC to support shoreline response operations.	<3 hours	☐
LOG	Establish an initial Forward Operating Base (FOB) at AMOSC, Geelong and FOB/ staging areas for aviation and shoreline response in line with Shoreline Plan and Aviation Plan.	<6 hours	☐
LOG	Notify waste contractors to prepare for potential liquid, and solid wastes – specific amounts and types to be determined.	<12 hours	☐
PLA	Initiate specific elements of OM01 of OSMP, including the tasks below.		
PLA	Monitor and predict weather and sea states: Consult meteorology services to determine water current and wind speed data, either from http://www.bom.gov.au or http://www.marineweather.net.au	4 hours	☐
PLA	Conduct ADIOS2 forecasting of oil weathering and conduct manual vectoring of the spill trajectory, as follows: • Determine the direction of the spill. • Determine if the spill is likely to cross into state waters or shorelines or if it might impact other sensitivities.	4 hours	☐

Who	What	Minimum time to implement	✓/x
PLA	Activate third-party trajectory modelling of the spill trajectory: Organise oil-spill trajectory modelling via AMOSC/RPS (if not already done – see Table 3-5)	4 hours	☐
PLA	Establish a common operating picture – Display overflight, OSTM/manual vectoring data, spill location, assets deployed to spill site	4 hours	☐
PLA	Prepare and disseminate SITREPs (Appendix 7) as more information becomes available. (Frequency to be dictated by IC)	Ongoing	☐
PLA	Identify potential exposed environmental sensitivities based on spill trajectory, consult the NEBA (Section 2.6.1), and develop an Incident Action Plan of spill response strategies, including a spill-specific NEBA (ref OPEP 7.5).	ASAP	☐
EU	Activate OSMP modules OM01, OM02, OM03, OM04, OM05 and OM06, as relevant to the incident (Table 4-13).	ASAP	☐
EU	Liaise with the relevant state government Environment & Scientific Support Coordinator if it is anticipated that state waters or shorelines will be impacted.	6 hours	
EU	Assess the need for and coordinate the development of specific plans, including the following: • Wildlife Management Plan • SCAT Plan Monitor the environmental consequences of any actions. Participate in the development of plans for the next operational period.	12 hours	☐
Once these actions are complete, move to Section 3.3 of this plan.			

IC – Incident Commander; OPS- Operations Section; LOG – Logistics Section; PLA - Planning Section; EU – Environment Unit

3.3. Reactive Operations (12-48 hrs)

3.3.1. Emergency Management Structure

Following the immediate action and assessment process, ConocoPhillips Australia will establish an Emergency Management structure proportionate to the scale of the incident, in line with Figure 3-2 as per the ConocoPhillips Australia Business Unit (ABU) Crisis and Incident Management Plan (CIMP).

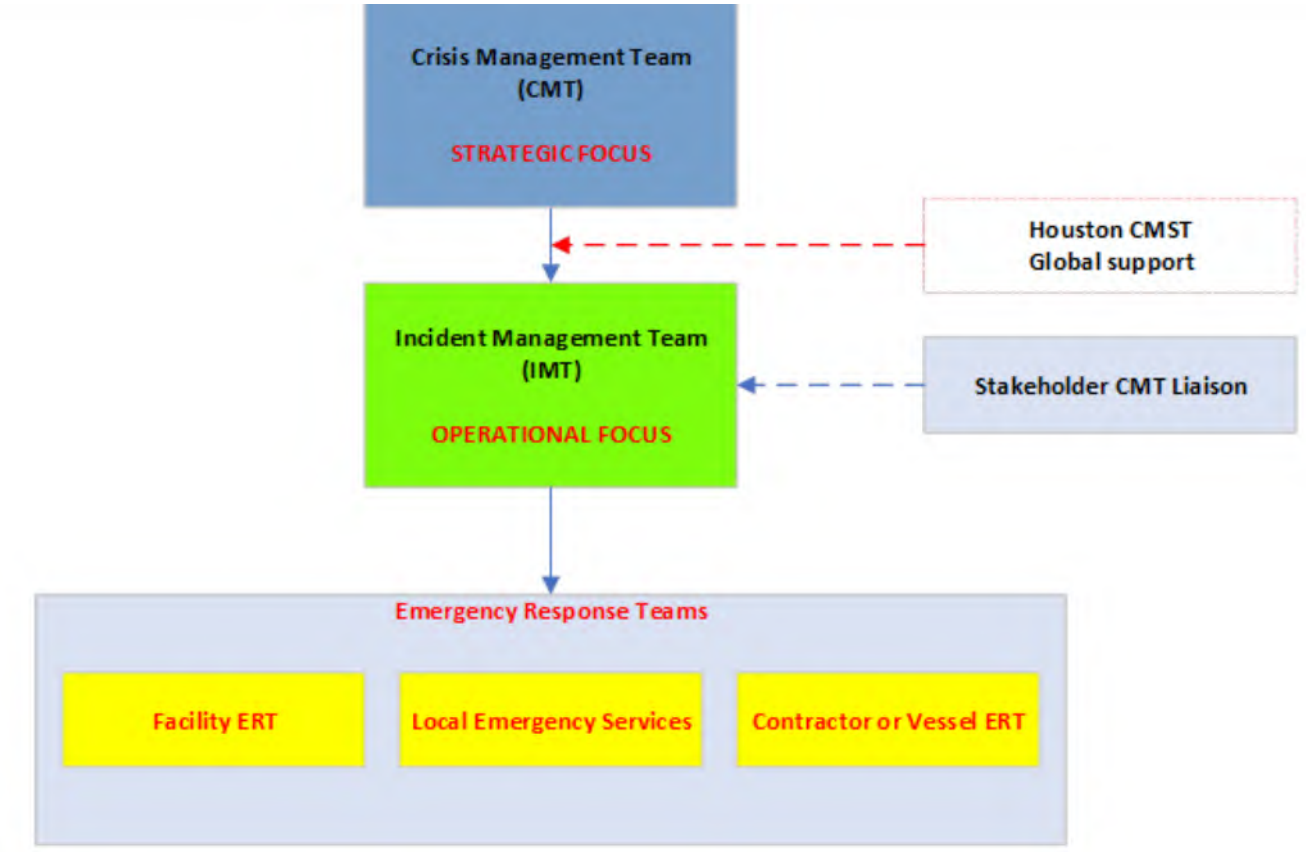


Figure 3-2: Crisis, incident and emergency management interface arrangements

The emergency management structure includes the Crisis Management Team (CMT), Incident Management Team (IMT) and Emergency Response Teams (ERT). Further details are provided below.

3.3.2. Crisis Management Team (CMT)

The CMT (Figure 3-6), under the leadership of the Crisis Manager, is responsible for managing the consequences of an incident for ConocoPhillips Australia at an enterprise level and involves the strategic, business interruption impacts, legal, reputation and the highest-level organisational liaison aspects of a crisis event.

This involves developing an integrated strategic management approach to manage the consequences of the incident for:

- Public Information and stakeholder relationships directly related to our operating Facilities
- Business continuity impacts, and
- Legal considerations.

ABU CMT primary objectives are to:

- Consider the business continuity, strategic, legal and public image consequences of the incident for the ABU
- Attend to public media issues relating to the operating facilities
- Develop a Crisis Management plan to coordinate all actions
- Communicate with internal and external stakeholders that relate directly to ABU operations
- Comply with applicable regulatory requirements, and
- Notify ConocoPhillips Australia Crisis Management and Emergency Response – Houston as appropriate.

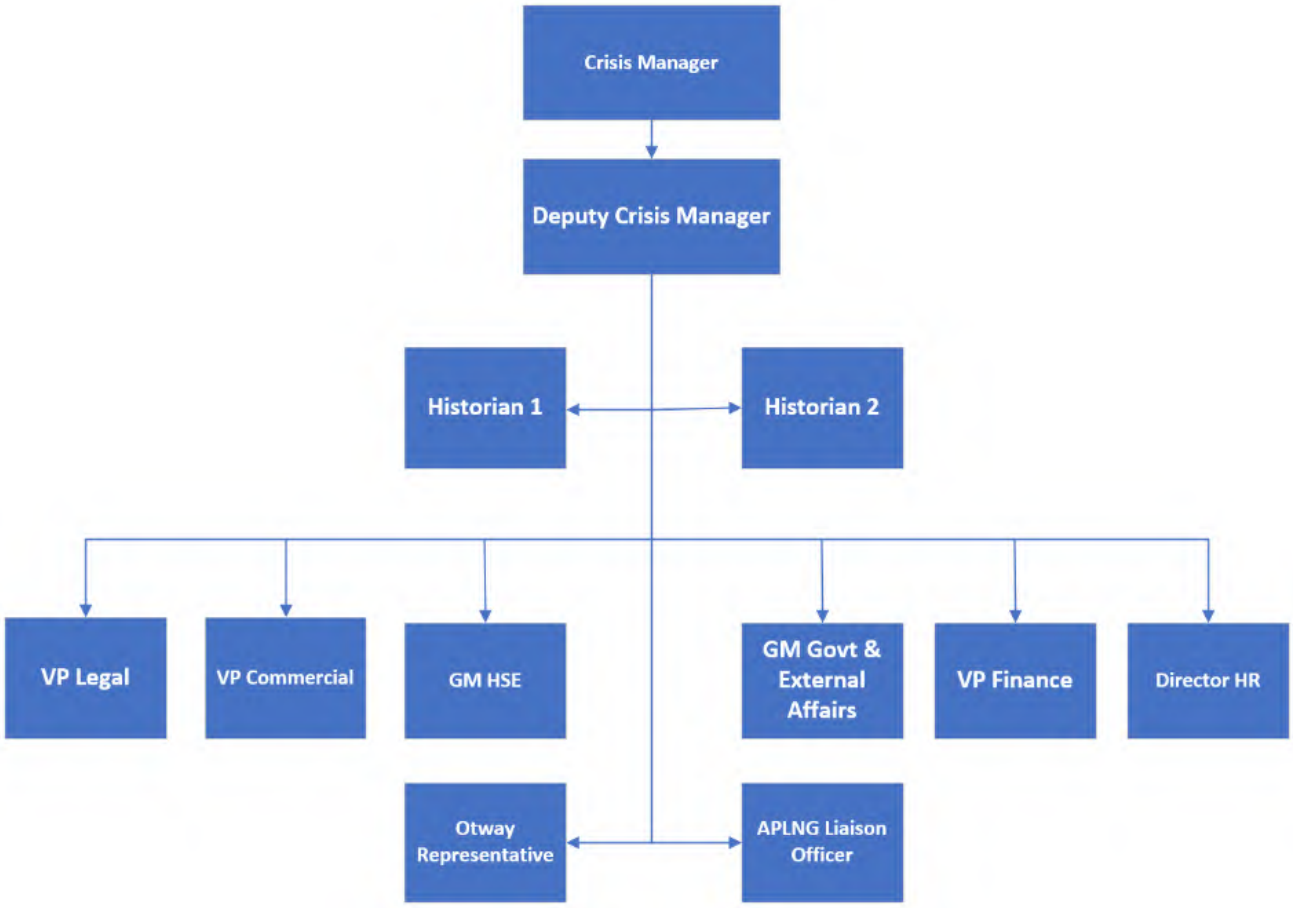


Figure 3-3: CMT structure

As per ConocoPhillips Australia Crisis and Incident Management Plan each member of the CMT must complete the following induction modules and training:

- Online IMT/CMT Induction Computer Based Training (CBT) module
- CMT drill to cover off role and CMT process and analysis tools

In addition to these items the CMT Historian must complete training that covers:

- IAP software to view ICS forms from IMT
- CMT Strategic analysis tool

The CMT are required to conduct a minimum of two drills per year, with exercising and drill scenarios having a strategic focus and are generally concerned with managing the consequences of an emergency event at enterprise level.

3.3.3. Incident Management Team (IMT)

ConocoPhillips Australia will mobilise the IMT, via the 24/7 on call duty roster, guided by Figure 3-4 and Figure 3-5 and Appendix 1: IMT Capability Assessment, Part C: IMT Resourcing. The IMT, under the leadership of the Incident Commander (IC) provides support via technical expertise, the development of operational strategies and plans, and provision of resourcing for these operations. This includes the implementation of the Source Control Emergency Response Plan (SCERP) specific to the well, via the Operations Section Chief and Source Control Branch.

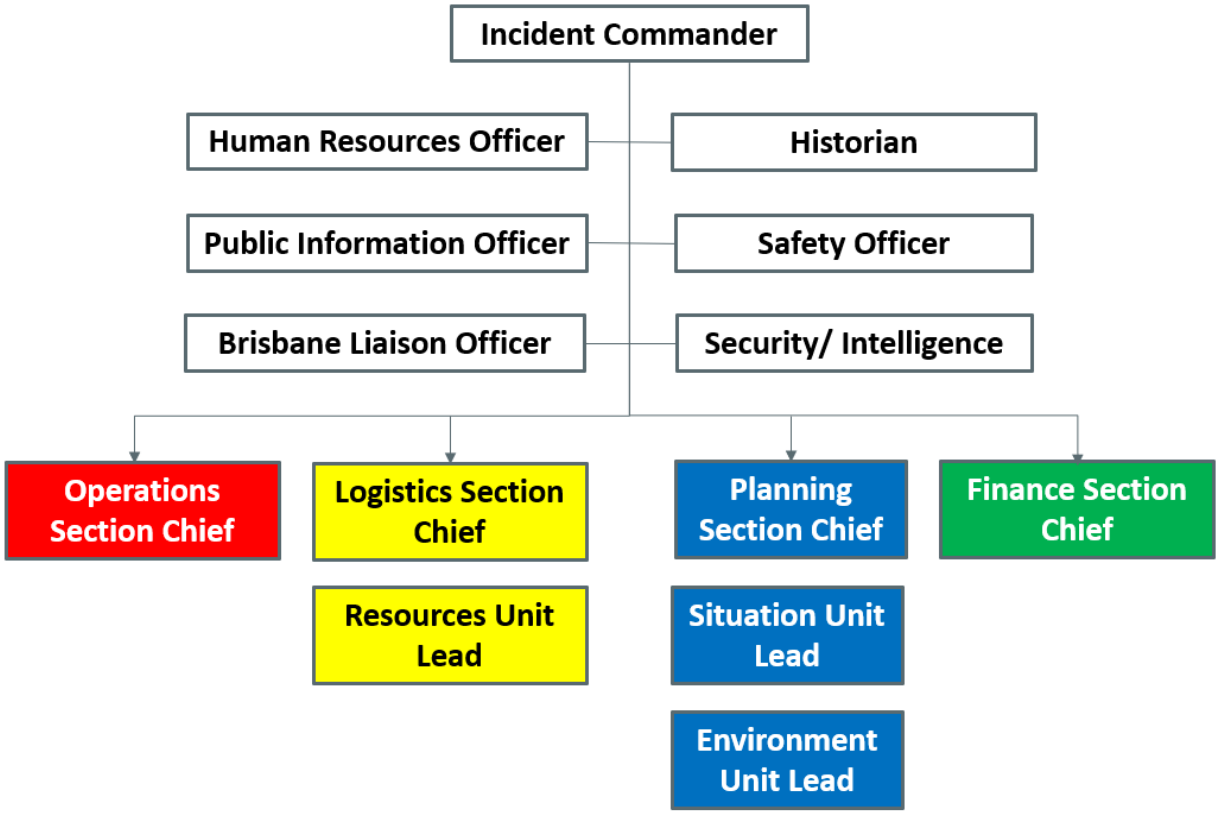


Figure 3-4: IMT structure – localised response activities.

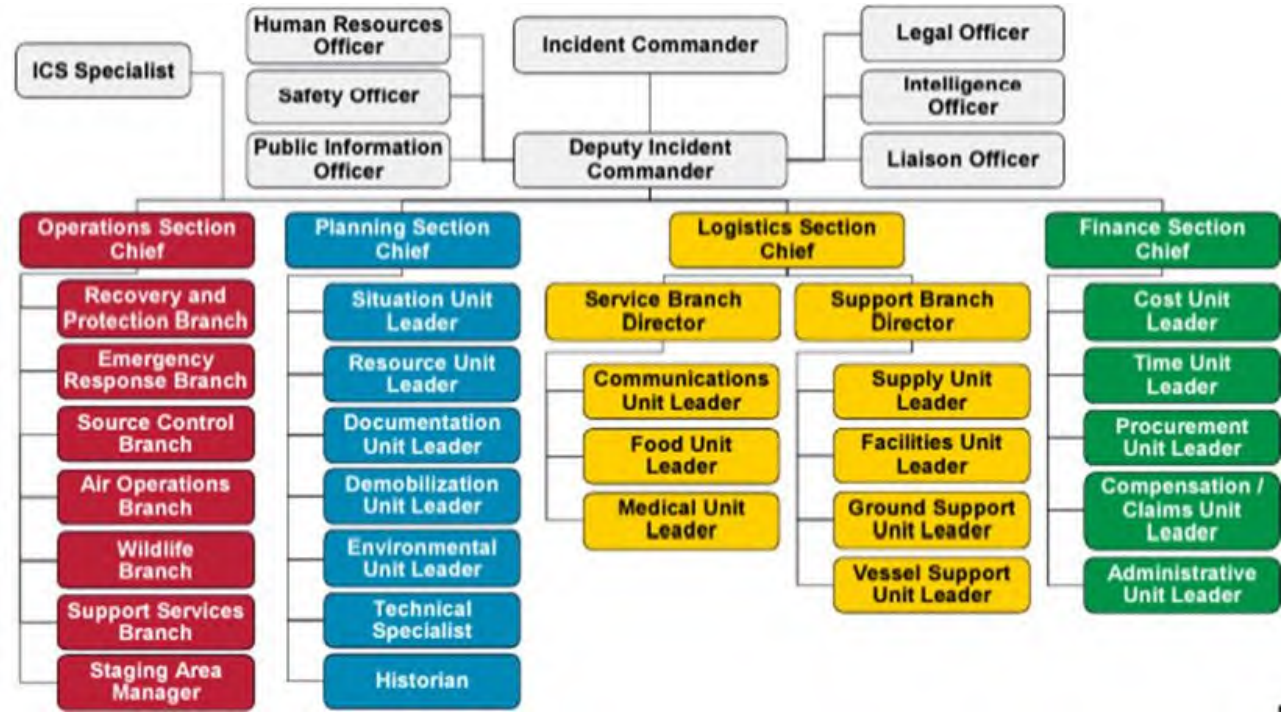


Figure 3-5: Expanded IMT structure

3.3.4. Additional Organisational Support

Further support for managing emergency events, the Crisis Manager can request assistance via:

- Crisis Management Support Team (CMST), and
- Global Incident Management Assist Team (GIMAT) - a specialist incident management team. Members are located globally and can be readily mobilised via virtual IMT platform (IAP software and Teams) to support a business unit IMT and FOB that has exceeded its capacity to manage effectively.

3.4. Roles and Responsibilities

ConocoPhillips Australia's IMT Functional Roles and overall outputs/outcomes are outlined in Table 3-8.

IMT personnel should use their relevant role checklists throughout a response. These are available in the ABU Crisis and Incident Management Plan (ABUE-450-HS-N05-C-00119) and ConocoPhillips Incident Management Handbook.

Table 3-8: IMT roles and responsibilities

Function	Sub/Function	Outputs	Outcomes
Incident Commander (IC)	**Control**	Safe and efficient response structure and organisation.	A response is put in place that meets the requirements of the OPEP. People and processes in place that meets the above.
	Safety	Draft the development of a plan that assesses and manages the safety risk of the response.	Safety risks assessed and mitigation plans/processes in place
	Liaison Officers	External/pubic/stakeholder affairs are managed.	Key stakeholders (government, regulatory and community) are informed of the incident and have their concerns acknowledged and addressed by the response organisation.
Planning (PLA)	**Planning**	Drive the planning process that develops the IAP. Tracking resources. Provide Intelligence/Enviro function.	Response planning and 'thinking' that fits best the scenario (oil type, weather, fates, locations, sensitivities), to most effectively cleans up oil.

Function	Sub/Function	Outputs	Outcomes
	Environmental Unit	Oil Spill Preparedness and Response (OSPR) strategies are tactically implemented consistent with good global practice, accounting for the net benefit of each strategy. Assessment of environmental risk.	Daily NEBA analysis. Analysis of the resources at risk. Deployment of OSPR SME and technical advice into the EMT.
	Situation Unit	Development and maintenance of the Common Operating Picture for the IMT (including trajectory/forecasting).	Maintaining the Common Operating Picture to maintain situational awareness. Maintenance and operation of GIS capability
Operations (OPS)		Run the operations in the field. Provide technical input to the production of the next operational period IAP. Draft the daily operational orders for each field team. Provide tech input to the safety plans. Implement the SCERP, as detailed in the SCERP and Well Operations Management Plan (WOMP)	Run the current operations in the field – the execution of the IAP for that operational period.
Logistics (LOG)		Acquire resources and materials that match the operations. Ensure resources are serviced and maintained to required specifications.	Fit for purpose resources are where they need to be at the right time.
Finance (FIN)		Tracks all costs and provides financial oversight consistent with the control agency requirements.	Financial and administrative management process in place for the response.

3.5. Reactive Operations

Once the IMT is established, Section 4 – Response Strategies should be used to assist each IMT functional area to execute tasks in support of the identified spill response strategies.

OPEP section references for each response strategy are outlined in Table 3-9.

Table 3-9: Response strategy – OPEP section reference

Response Strategy	Relevant Section
Source Control	Section 4.1
Surveillance, Modelling & Visualisation (SMV)	Section 4.2
Shoreline Protection & Deflection (P&D)	Section 4.3
Shoreline Clean-up	Section 4.4
Oiled Wildlife Response	Section 4.5
Waste Management	Section 4.6
Operational & Scientific Monitoring (OSM)	Section 4.7

The goal of the IMT is to implement reasonable and proportionate oil spill response strategies until such a time as the oil spill response may be terminated (Section 4.8).

This can be achieved by implementing the following response planning process (Figure 3-7):

1. **Reactive Phase: Activate OPEP:**

   Assessing the situation, making informed decisions based on the situation and the oil spill priorities (and strategies) outlined in this OPEP.

2. **Reactive → Pro-active Phase:**

Developing an Incident Action Plan (IAP) that outlines the objectives, strategies, tactics, tasks and supporting resources that will have the greatest chance of success to meet the overarching aim of the response.

3. **Pro-active Phase:**

   Implementing the IAP. Reviewing the chosen strategies for success, modification and/or continuance. The IAP should be considered the 'project plan' for the oil spill, which should be regularly reviewed and updated, consistent with the situation at the time.

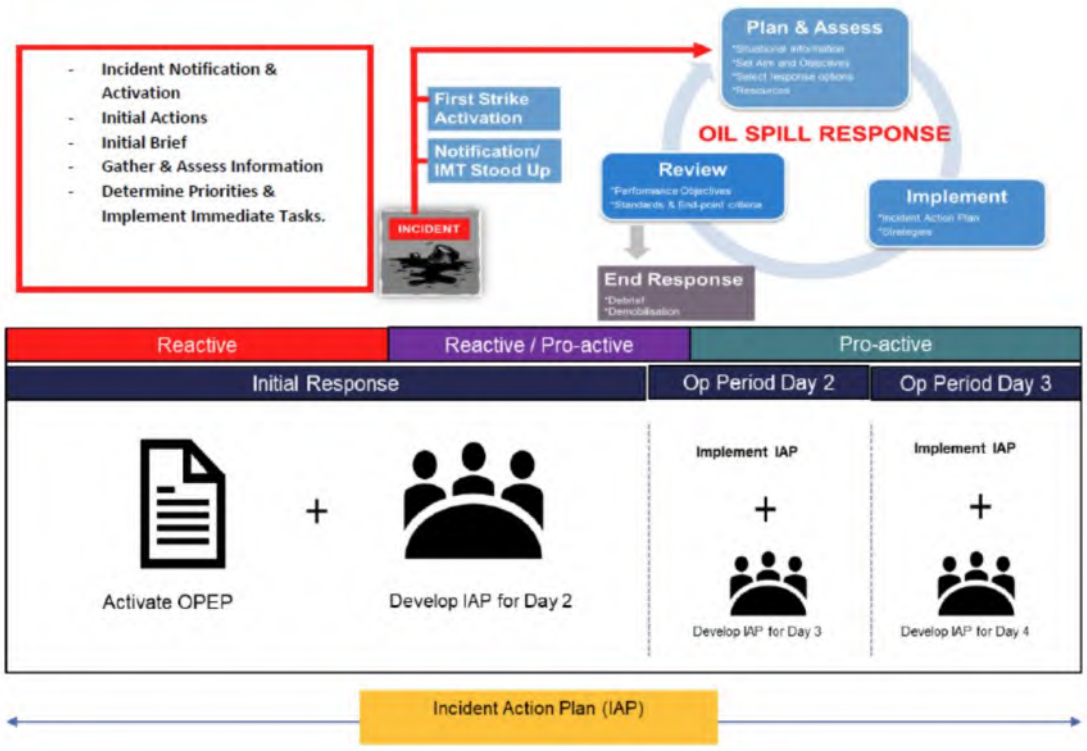


Figure 3-6: AMOSC guide: Action planning process

3.6. Pro-active Ongoing Actions (48+hrs)

3.6.1. Incident Management System (IMS)

ConocoPhillips Australia uses the Incident Control System (ICS) as its internal Incident Management System. ICS is compatible with the Australian Inter-agency Incident Management System (AIIMS) adopted by Australian Government agencies under the National Plan.

The ABU Crisis and Incident Management Plan (ABUE-450-HS-N05-C-00119) and ConocoPhillips Incident Management Handbook should be used in conjunction with this OPEP to implement the Incident Action Plan process.

3.6.2. ICS Operational Planning Cycle

The ICS Operational Planning Cycle should be used to develop and present a safe and effective Incident Action Plan (IAP) for each operational period of an incident.

The response phases of this OPEP are aligned with the phases mapped in Figure 3-8 below.

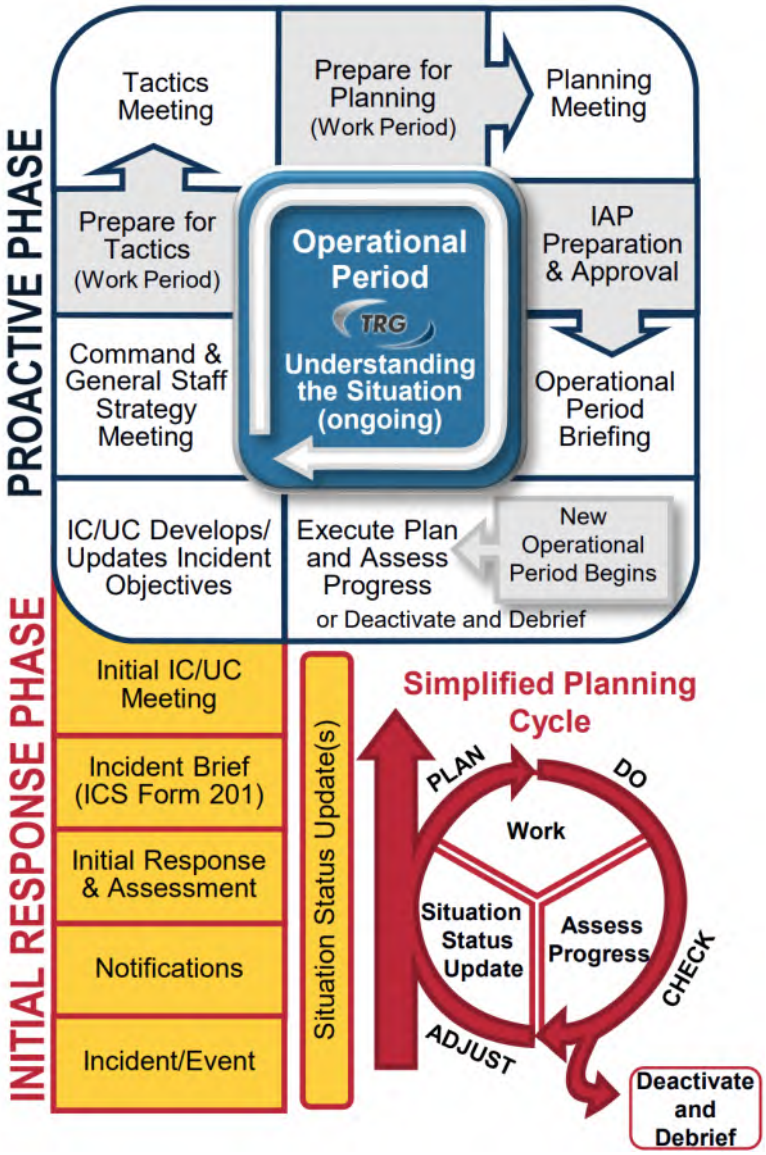


Figure 3-7: COP Incident Management Handbook – Response phases.

For each operational period, the IMT should progress through the pro-active phase of the planning cycle using the daily briefing and meeting schedule outlined in Figure 3-8.

MEETING / BRIEFING	APPROX TIME-FRAME	FACILITATOR	ATTENDEES
IC/UC Develops/ Updates Incident Objectives	30 Minutes	IC/UC or PSC (If available)	IC/UC, SOFR, OSC, PSC, DOCL, SITL and ICS Specialist (optional)
Command and General Staff/Strategy Meeting	45 Minutes	PSC	IC/UC, SOFR, LOFR, PIO, OSC, FSC, LSC, ISC, SITL, DOCL and ICS Specialist (as needed)
Tactics Meeting	1 Hour	PSC	OSC, LSC, FSC, RESL, SITL, ENVL, SOFR, COML, DOCL, ICS Specialist, and Technical Specialists (as needed)
Planning Meeting	45 Minutes	PSC	IC/UC, SOFR, LOFR, PIO, OSC, FSC, LSC, ISC, SITL, DOCL, RESL, ENVL, COML, THSP and ICS Specialist
Operations Period Briefing	30 Minutes	PSC or OPBD, DIVS, Task Force/Strike Team Leader	IC/UC, SOFR, LOFR, PIO, OSC, FSC, LSC, ISC, OPBD, SITL, DOCL, RESL, ENVL, COML, DIVS, STAM, THSP, Task Force/Strike Team Leaders, field personnel, ICS Specialist and others as appropriate
Execute Plan and Assess Progress	8+ Hours	Unified Command and Section Chiefs	IC/Unified Command, Command Staff, General Staff

Figure 3-8: COP Incident Management Handbook – Pro-active phase daily meeting schedule

3.6.3. Incident Action Plan (IAP)

An IAP will be developed for each operational period. It is derived by an assessment of the situation and outlines the preferred course of action.

The IAP provides;

- A summary of incident details and critical situational information
- Clear direction via the incident priorities, aim and objectives
- Includes a comprehensive listing of the strategies, tactics, tasks and resources, and
- Supporting documentation including safety, communication, waste, operational sub-plans.

The ICS planning process requires a suite of ICS forms to be completed as part of the IAP development. These are available via ConocoPhillips' Incident Action Plan software. Passwords for IAP access are provided to each IMT member.

PLA	The Planning Section Chief is responsible for coordinating the development of the IAP and the Incident Controller is required to approve the IAP prior to dissemination for implementation.

4. Spill Response Strategies

The following sections describe each of the spill response strategies that ConocoPhillips Australia will put in place where applicable to the incident.

4.1. Source Control

Well intervention, subsea infrastructure repairs and vessel salvage will be used as appropriate to the source of the spill to control and cease the uncontrolled flow of hydrocarbons into the environment.

4.1.1. Response Activities

Depending on the circumstances, the following options will be followed:

Vessel salvage: Vessel source control actions are those in accordance with the vessel's Shipboard Oil Pollution Emergency Plan (SOPEP) or Shipboard Marine Pollution Emergency Plan (SMPEP) relevant to vessel class, and dependent on the scenario type. It may include transfer of the fuel from the damaged tank to another vessel and repairing the tank. ConocoPhillips Australia will provide support to ensure appropriate salvage operations.

Wells/drilling: The proposed strategy for dealing with a source control event is (in order of activation and assuming failure of the previous action):

- Activate the emergency Blow Out Preventer (BOP)
- Activate an Independent Well Control Device (IWCD) if engineering proves feasible (ram that has an independent control system that can be installed within the BOP or between the wellhead and BOP)
- Undertake ROV intervention of the existing BOP if safe to do so
- Drill a relief well

All wells/drilling source control operations will be done in accordance with the Otway Exploration Drilling Program Source Control Emergency Response Plan (SCERP).

Emergency BOP activation involves delivering hydraulic fluid to the BOP stack using an ROV to mitigate any problems that may have arisen with the BOP control system in a loss of well control event.

Independent Well Control Device activation involves the remote activation of specialist pre-installed (prior to activity commencement) well control equipment which sits within or below the BOP ram and uses hydraulic pressure to seal off the well and stop the flow of hydrocarbons.

The drilling of a relief well provides an opportunity to permanently kill and secure the well. A relief well is drilled to intersect the compromised well bore above the blowout location. Weighted drill fluid is pumped down the relief well at high rates to kill the existing well. This requires the mobilisation of another suitable MODU, or safe relocation of the existing MODU, to the relief well location.

4.1.2. Response Resources

A detailed list of the resources required to support the source control strategy outlined above are provided in the SCERP.

4.1.3. Environmental Risk Assessment (Source Control)

An assessment of potential environmental impacts and risks associated with source control techniques is undertaken as part of the Otway Exploration Drilling Program EP Section 7.8.

4.2. Surveillance, Modelling and Visualisation (SMV)

Surveillance, Modelling and Visualisation (SMV) is a critical tool in the spill response hierarchy. It informs the understanding of the behaviour and trajectory of a hydrocarbon spill, improving the understanding of the potential for environmental harm, and therefore the response strategies that should be put in place. SMV involves:

Surveillance:
- Aerial Surveillance (Spill size estimation, quantification, See Appendices 10 and 11),
- Vessel/marine Surveillance,
- Satellite Tracking Drift Buoys (Spill movement and behaviour).
- Satellite photography

Modelling:
- Manual Vector Calculations (100% current, 3% wind)
- Oil Spill Trajectory Modelling (OSTM) (request form in Appendix 5)
- Oil Fate Prediction (ADIOS or GNOME).

Visualisation:
Refers to presenting the collated information on an electronic platform such as a GIS system (developing a Common Operating Picture), in such a way as to help the IMT and IC make informed decisions surrounding response strategies, daily taskings and resource requirements. Typical status boards are listed in Appendix 6.

4.2.1. Response Activities

Table 4-1 provides key information required to implement the SMV strategy during a response.

An Aviation Plan has been developed (refer Appendix 2) which provides guidance on response tasking, resources and logistics. The Aviation Plan includes a draft Aviation Sub-Plan (Section 6) to support Aviation operations identified in the IAP. The Aviation Sub-Plan will require validation based on situational information relevant to the incident.

Table 4-1: SMV implementation

Surveillance, Modelling and Visualisation (SMV)				
Response Objective	To gather information and validate planning assumptions to adjust response plans as appropriate to the scenario. To quantitatively assess the extent, severity, persistence, and recovery of environmental values and sensitivities affected by the spill.			
Response Tactics	1. Satellite tracking buoys will be deployed to monitor the leading edge of the slick; and deployed in 24-hour intervals to indicate swept pathways. 2. Twice daily aerial surveillance flights (with trained Aerial Observers) will be undertaken to monitor the spreading, location and weathering of the slick. 3. Daily oil spill trajectory modelling will be used to predict the weathering and direction that the oil will spread. 4. Twice daily vessel observation to confirm the extent and spreading of the spill. 5. Activate the OSMP.			
Initiation Criteria	Notification of a spill (MDO, Gas Condensate) to the environment.			
Implementation Plan/ Guidance Document	COP Aviation Plan – See pg. 4 Aerial Surveillance Response Flowchart. COP Aviation Plan – Section 8 IAP Aviation Sub-Plan Operational and Scientific Monitoring Program (OSMP)			
Critical Outputs	Tactic	Level 1	Level 2	Level 3
	Aerial Surveillance	✓	✓	✓
	Oil Spill Trajectory Monitoring (Vectoring + ADIOS)	✓	✓	✓
	Twice daily Oil Spill Trajectory Modelling		✓	✓

Surveillance, Modelling and Visualisation (SMV)				
	Continuous monitoring from Oil Spill Tracking Buoys		✓	✓
	Surveillance from: • Aircraft – 2 x daily overflights • Vessels – Opportunistic to sense check aerial observations		✓	✓
	Shoreline surveys (pre-emptive and post impact).		✓	✓
	Operational and Scientific Monitoring programmes		✓	✓
	Satellite imagery runs as requested by the SITU			✓
Resources	As per section 4.2.2 Response Resources (SMV)			
Termination Criteria	Termination occurs when the following criteria is fulfilled: • The spill has ceased, • The spill is no longer visible to human observers. Specifically, a silver/grey sheen as defined by the BAOAC is not observable and 24 hrs has elapsed since the last confirmed observation of surface hydrocarbons, • Modelling results (OM1) do not predict surface exposures at visible levels. Termination criteria to be agreed with relevant Control Agency in State Waters.			

4.2.2. Response Resources

Table 4-2 details the capability required to support am SMV response, including resources required and availability.

Table 4-2: Summary of SMV resources

Resource	Requirement		Availability	Description
Aerial/ Vessel Surveillance	1x Pilot/Aircraft		Aviation contract /Pre-qualification	Suitable aircraft suppliers listed in the Aviation Plan – Section 6.
	1x Trained Aerial Observer		Trained aerial observers via AMOSC	
	1x Vessel		Vessel contract /Pre-qualification	Vessel(s) of Opportunity
Manual Trajectory Calculation (Vectoring + ADIOS)	1x IMT Member	IMT Planning Officer (or equivalent)	Resource available within COP and/or via AMOSC.	
	Current & Wind Data		Bureau of Meteorology Tracking buoy data	Available online
	Fate & behaviour assessment	ADIOS or GNOME	Resource available within COP and/or via AMOSC.	
Oil Spill Trajectory Modelling (OSTM)	Access to RPS via contract to initiate callout on a 24/7 basis.		AMOSC contract with RPS	Access via AMOSC to activate RPS for OSTM within 60 mins. 1st report to be provided within 4 hrs.
Satellite Tracking Buoy	1x Satellite tracking buoy per operational vessel.		Available via AMOSC.	Satellite tracking buoys will be located offshore for the duration of the campaign.
Satellite Imagery	Access to KSAT Satellite Imagery via contract to initiate callout on a 24/7 basis.		AMOSC contract with Kongsberg Satellite Services.	Access via AMOSC to activate KSAT Imagery within 60 mins. Timeframes for imagery will be subject to satellite availability (Appendix 13).

4.2.3. Environmental Risk Assessment (SMV)

An assessment of possible environmental impact and risk associated with SMV techniques is undertaken as part of the Otway Exploration Drilling Program EP Section 7.8.

4.3. Shoreline Response: Protection and Deflection

Shoreline Protection and Deflection (P&D) involves using specialist equipment (e.g. nearshore booms and skimmers) to divert floating oil away from pre-identified sensitive receptors. Techniques vary depending on the location and type of sensitivity being protected.

4.3.1. Response Activities

Table 4-3 provides key information required to implement the Shoreline P&D strategy during a response.

A Shoreline Plan has been developed (refer Appendix 2) which provides guidance on response tasking, resources and logistics. This document should be used to assist in the development of a Shoreline Response Sub-Plan and used in conjunction with state response plans, e.g., the *Tasmania EPA (February 2023) First Strike Plan King Island*.

Table 4-3: Shoreline protection and deflection implementation

Shoreline Response: Protection and Deflection	
Response Objective	Protection of priority shorelines from contact from surface (floating) hydrocarbons and reduced hydrocarbon loading on shorelines.
Response Tactics	Identify sensitive areas that may benefit from protection and deflection. Deploy protection and deflection booms as per recommendations in the Primary or Secondary TRP's, prior to oil stranding. Daily surveillance of boom sets to ensure optimal protection.
Initiation Criteria	Notification of a spill (MDO, Gas Condensate) to the environment.
Implementation Plan/ Guidance Document	COP Shoreline Plan – See pg. 5 Shoreline Response Flowchart. ConocoPhillips Primary and Secondary Tactical Response Plans for Victoria and King Island. Tasmania EPA (February 2023) First Strike Plan King Island VIC State Maritime Emergencies Subplan Edition 2
Critical Outputs	Modelling predicts the shoreline loading over time. Where shoreline impact is predicted, a Tactical Response Plan (TRP) or Shoreline Treatment Recommendation (STR) will be implemented. TRPs consist of detailed response information and resources required including the equipment and personnel to carry out identified taskings related to the protection of specific sensitivities. Taskings within the TRPs include: • SCAT surveys • Pre-cleaning of shorelines • Protection & deflection booming • Containment and recovery Primary TRP Sites identify sensitivities permanently exposed which will require a definitive response. The TRP identifies specific tasks aimed at minimising environmental impact. Secondary TRP sites identify sites at which exposure is seasonal or irregular and require confirmation of a requirement prior to a response. The TRP identifies sensitivities, site information, likely response strategies and resources that would require validation based on the conditions at the time of the event. Secondary TRP sites that do not require a response would allow additional resources to be directed towards other response activities.
Resources	As per section 4.3.2 Response Resources (P&D)
Termination Criteria	Termination occurs when the following criteria is fulfilled: • The spill has ceased. • The spill is no longer observable to human observers and all oil has impacted shorelines and is unlikely to remobilise. • 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. Termination criteria is to be agreed with relevant Control Agency in State Waters.

4.3.2. Response Resources

Table 4-4 provides a summary of shoreline protection and deflection resources that will be required to support a response.

Table 4-4: Summary of shoreline protection and deflection resources

Resource	Requirement	Availability	Description
Trained oil spill response personnel	• Boom deployment personnel. • Skimmer and recovery operations personnel.	Available from AMOSC equipment stockpile, AMSA national plan equipment	Qualified operators are required to effectively setup and maintain boom deployments to effectively protect or deflect hydrocarbons away from sensitive shorelines.
Boom and ancillary equipment	• Shore sealing boom (Beach guardian boom) • Fence boom (Solid floatation boom) • Near shore boom (Zoom boom, GP boom) • Sorbent Boom	Available from AMOSC equipment stockpile, AMSA national plan equipment	Different types of booms will be required to effectively protect different shoreline types. By having access to all styles of boom, an effective protection and deflection strategy can be achieved.
Temporary dyke	• Sandbags • Shovels	Hardware stores, safety stores, SES	In certain areas, it is just as effective as booming, to close off the sensitive area to the incoming surface hydrocarbon. This can be achieved by building a temporary dyke out of sandbags.
Boom deployment vessel	• Shallow draft work vessel • Coxswain	CoP Vessel contractor, Vessels of opportunity, AMOSC Geelong equipment stockpile.	In order to effectively deploy protection and deflection booming systems, a shallow draft work vessel and competent coxswain are required to position and anchor booming sets in place.

4.3.3. Environmental Risk Assessment (Protection and Deflection)

An assessment of possible environmental impact and risk associated with Shoreline Protection & Deflection techniques is undertaken as part of the Otway Exploration Drilling Program EP Section 7.8.

4.4. Shoreline Response: Shoreline Clean-up

Appropriate efforts, as indicated by the NEBA, should be made to prevent an oil spill from reaching a shoreline to help reduce the environmental impact, the duration of the clean-up and the amount of waste generated. In the event that a shoreline is impacted with hydrocarbons, appropriate shoreline clean-up techniques will need to be employed to remove the pollutant.

Many factors influence what clean-up technique should be employed including:

- Shoreline type
- Weather conditions
- Shoreline Accessibility
- Shoreline Sensitivity, and
- The amount spilled.

The predictive modelling generated by RPS covered a wide range of representative of spill locations, two different hydrocarbon types (MDO and Gas Condensate) over two different petroleum titles. Extensive analysis of this modelling data has concluded that King Island and some Local Government Areas (LGAs) along the southern coast of Victoria are most at risk of being impacted.

Figure 4-1 shows a diagram of the LGAs that could be impacted based on all spill locations, scenarios, and oil types.

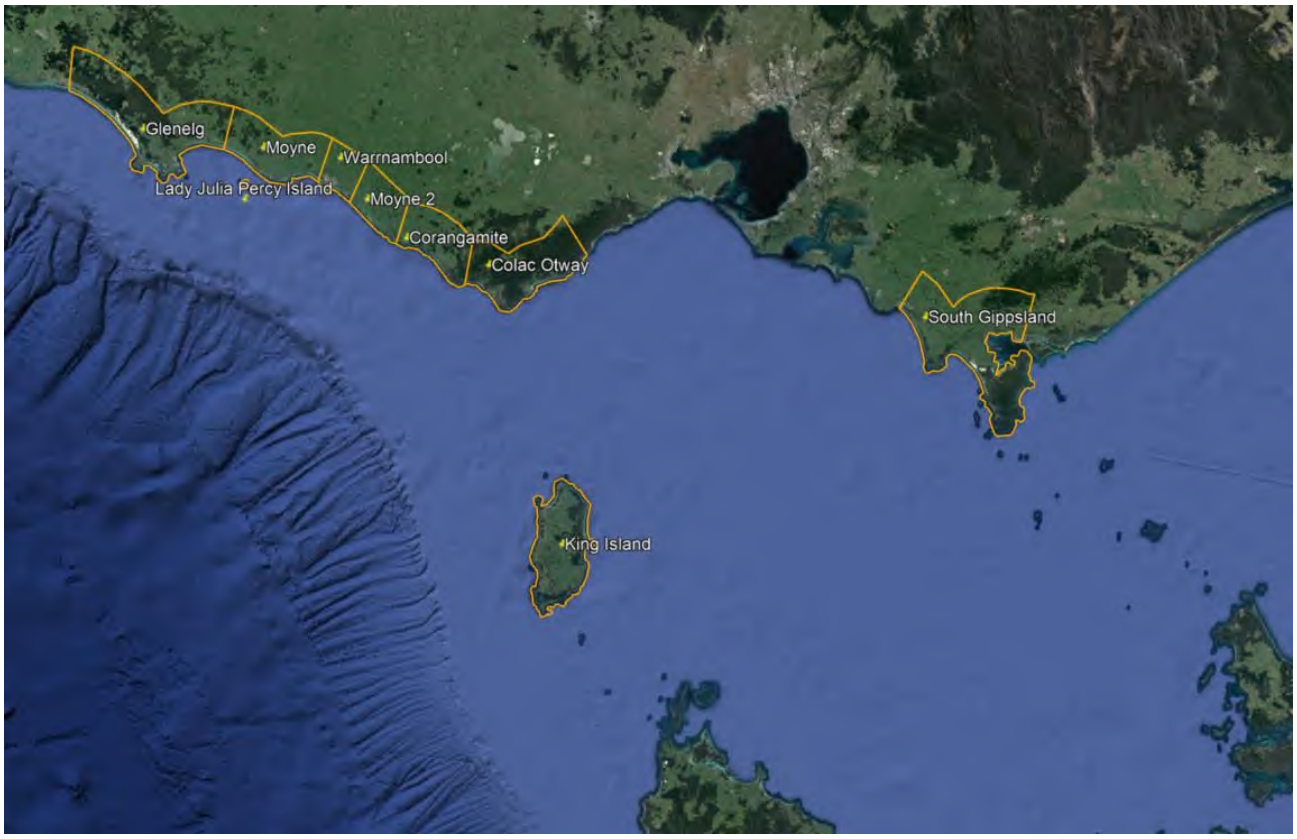


Figure 4-1: Potentially affected LGAs for all spills and oil types

In order to mount an effective and timely response to a potential shoreline impact, extensive work has been done to clearly define what clean-up strategies should be employed based on the location of the shoreline impact. The location of the shoreline impact triggers either a Tactical Response Plan (TRP) activation, or a Shoreline Treatment Recommendation (STR) implementation.

TRPs have been developed for areas of high sensitivity (see Shoreline Plan Section 5.2, Table 3 for assessment criteria) on King Island (Org ID: 33, Environment Protection Authority (EPA) Tasmania, Event ID: 3828, 2521, FB ID: 86) and the Victorian coastlines within the LGAs summarised Table 4-5.

Table 4-5: Victorian tactical response plan (TRP) sites

Victorian TRP's	Latitude	Longitude
Glenelg LGA		
Glenelg River Primary TRP	38° 3'34.76"S	140°59'22.54"E
Portland Primary TRP Site	38°20'42.53"S	141°37'17.54"E
Surrey River Primary TRP	38°15'34.68"S	141°42'4.86"E
Fitzroy River Primary TRP	38°15'42.64"S	141°51'12.37"E
Lake Mombeong Secondary TRP Site	38° 6'46.27"S	141° 7'13.64"E
Moyne LGA		
Moyne River Primary TRP Site	38°23'21.55"S	142°14'55.94"E
Yambuk Lakes Outlet Secondary TRP	38°20'17.43"S	142° 2'45.38"E
Yambuk Coastal Reserve Secondary TRP	38°16'14.69"S	141°54'15.61"E
Belfast Coastal Reserve Secondary TRP	38°20'55.39"S	142°22'4.91"E
Warrnambool LGA		

Victorian TRP's	Latitude	Longitude
Merri River Primary TRP Site	38°24'2.60"S	142°28'18.98"E
Hopkins River Primary TRP Site	38°24'7.93"S	142°30'32.38"E
Moyne 2 LGA		
Moyne River Primary TRP Site	38°23'21.55"S	142°14'55.94"E
Yambuk Lakes Outlet Secondary TRP	38°20'17.43"S	142° 2'45.38"E
Yambuk Coastal Reserve Secondary TRP	38°16'14.69"S	141°54'15.61"E
Belfast Coastal Reserve Secondary TRP	38°20'55.39"S	142°22'4.91"E
Moyne 2 LGA		
Curdies Inlet Primary TRP Site	38°36'24.74"S	142°52'52.33"E
Buckley Creek Secondary TRP Site	38°29'42.35"S	142°41'7.26"E
Corangamite LGA		
Port Campbell Creek Primary TRP	38°37'7.13"S	142°59'32.30"E
Gellibrand River Primary TRP	38°42'19.06"S	143° 9'23.42"E
Sherbrook River Secondary TRP Location	38°38'35.02"S	143° 3'26.26"E
Colac Otway LGA		
Aire River Primary TRP	38°48'23.17"S	143°27'40.53"E
Parker Inlet Primary TRP	38°50'43.05"S	143°33'40.03"E
Barham River Inlet Primary TRP	38°45'45.23"S	143°40'30.92"E
Apollo Bay Primary TRP Location	38°45'24.43"S	143°40'40.93"E
Skenes Creek Primary TRP	38°43'29.06"S	143°42'39.95"E
Kennet River Primary TRP Location	38°40'1.22"S	143°51'44.83"E
Johanna River Primary TRP Site	38°46'0.72"S	143°23'17.92"E
Cumberland River Primary TRP Site	38°34'34.26"S	143°56'55.64"E
Wye River Primary TRP Site	38°38'4.74"S	143°53'28.79"E
Milanesia Creek Secondary TRP Site	38°45'5.30"S	143°18'49.43"E
Blanket Bay Creek Secondary TRP Site	38°49'35.59"S	143°34'58.68"E
Wild Dog Creek Secondary TRP Site	38°44'8.91"S	143°41'1.90"E
Smythe Creek Secondary TRP Site	38°42'16.87"S	143°45'45.76"E
Sugarloaf Creek Secondary TRP Site	38°41'48.81"S	143°47'47.87"E
Carisbrook Creek Secondary TRP Site	38°41'34.67"S	143°48'34.29"E
Grey River Secondary TRP Site	38°40'57.31"S	143°50'22.21"E
Jamieson Creek Secondary TRP Location	38°35'46.86"S	143°55'9.06"E
South Gippsland LGA		
Port of Anderson Inlet Primary TRP	38°38'23.60"S	145°43'38.49"E
Shallow Inlet Primary TRP	38°52'33.14"S	146°11'41.01"E
Tidal River Primary TRP	39° 1'55.59"S	146°18'51.59"E
Ten Mile Creek Secondary TRP Site	38°49'24.29"S	145°53'39.92"E
Morgan Creek Secondary TRP Site	38°51'40.78"S	145°54'38.11"E
Derby River Secondary TRP Site	38°58'17.29"S	146°16'9.84"E
Whiskey Creek Secondary TRP Site	39° 0'45.70"S	146°17'31.22"E
Squeaky Beach Secondary TRP Location	39° 1'20.13"S	146°18'11.89"E
Growler Creek Secondary TRP Site	39° 3'36.80"S	146°20'44.03"E
Frazers Creek Secondary TRP Site	39° 4'16.47"S	146°20'36.43"E
Freshwater Creek Secondary TRP	39° 4'14.53"S	146°25'37.53"E

Table 4-6: King Island, Tasmania tactical response plan (TRP) sites.

King Island TRPs	Latitude	Longitude
King Island LGA		
Ettrick River Primary TRP	39°59'36.76"S	143°53'29.45"E
Edward St Pier Secondary TRP	39°55'38.01"S	143°50'34.96"E
Badger Box Creek Secondary TRP	39°57'55.40"S	143°52'25.32"E
Potential Secondary TRP	40° 3'44.60"S	143°52'54.48"E
Eel Creek Secondary TRP	39°45'2.42"S	143°51'14.86"E
Big Lake Inlet Secondary TRP	40° 6'54.97"S	143°56'44.53"E
Camp Creek Secondary TRP	39°55'24.19"S	143°50'38.99"E
Three Rivers Creek Inlet Secondary TRP	39°53'33.29"S	143°50'46.41"E
Porky Creek Inlet Secondary TRP	39°51'22.61"S	143°51'38.57"E
Pass River Secondary TRP	39°48'4.43"S	143°51'53.51"E
Bungaree Creek Primary TRP	39°46'9.34"S	143°51'5.83"E
Yellow Rock River Secondary TRP	39°41'52.58"S	143°53'27.66"E

Where a shoreline is impacted that is not part of a TRP, an STR should be implemented based on its shoreline type and accessibility as per the ConocoPhillips Australia Shoreline Plan (Appendix 2).

4.4.1. Response Activities

The information presented in Table 4-7 should be used to assist in the development of a Shoreline Response Sub-Plan and used in conjunction with the *Tasmania EPA (February 2023) First Strike Plan King Island* and/or the VIC State Maritime Emergencies Subplan Edition 2, where relevant.

Table 4-7: Shoreline clean-up implementation

Shoreline Response: Shoreline Clean-up	
Response Objective	To remove bulk stranded hydrocarbon from accessible shorelines and speed up natural recovery of habitats.
Response Tactics	Identify potentially affected shorelines using modelling data. Assess potentially affected shorelines using SCAT. Activate relevant TRPs for affected shorelines. Shoreline treatment recommendations will be put in place for all other affected shorelines.
Initiation Criteria	Notification of a spill (MDO, Gas Condensate) to the environment.
Implementation Plan/ Guidance Document	ConocoPhillips Shoreline Sub Plan. Tasmania EPA (February 2023) First Strike Plan King Island VIC State Maritime Emergencies Subplan Edition 2.
Critical Outputs	Coordinate with contractors and jurisdictional authorities to mobilise SCAT teams to conduct shoreline assessments (Appendix 12). SCAT feedback will determine whether a shoreline response is required for any segment/sector. Operational teams to be put together based on recommendations from Primary and Secondary TRPs resource lists. For affected areas where a TRP has not been developed, apply the appropriate STR. Conduct ongoing SCAT operations to monitor shoreline loading throughout the shoreline clean-up operation. Source appropriately skilled personnel and equipment to support the ongoing shoreline clean-up operations of all affected shorelines.
Resources	As per section 4.4.2 Response Resources (Shoreline Clean-up)
Termination Criteria	Termination occurs when the following criteria is fulfilled: • The source of the hydrocarbon spill is controlled.

	• No additional response or clean-up of habitat is predicted. • Locations predicted to be contacted by hydrocarbons have been contacted. • Independent scientific advice indicates that hydrocarbon levels are below 100g/m^2, or further clean-up activities are unlikely to materially decrease hydrocarbon impacts on environmental sensitivities. Termination criteria is to be agreed with the relevant Control Agency.

4.4.2. Response Resources

Table 4-9 provides a summary of the resources that are expected to be required to support a shoreline clean-up response.

Table 4-8: Summary of Shoreline Clean-up Resources

Resource	Requirement	Availability	Description
Trained SCAT Crew	Typical SCAT crew includes: 1x Wildlife specialist 1x Oil spill response specialist	Available via AMOSC, VIC DTP, TasEPA, AMSA	In order to effectively inform the IMT of an appropriate shoreline clean-up recommendation, a qualified SCAT team should include specialists listed. Consistent, informed data from SCAT can then be fed back into the IMT to allow them to activate the appropriate TRP or STR and source required equipment.
Shoreline Clean-up Team Leaders	Appropriately trained shoreline response team leaders.	Trained shoreline team leaders via AMOSC	Shoreline response team leaders are required to coordinate shoreline clean-up operations. Each team of 10 clean-up responders should be assigned a team leader.
Shoreline Clean-up Responders	Appropriately trained shoreline clean-up responders.	Trained shoreline responders via AMOSC, VIC DTP, TasEPA, AMSA	A shoreline response team should consist of 10 responders to perform the clean-up of the assigned shoreline. This team will be responsible for setting up booming, operating skimming systems, manually cleaning the shoreline and storing waste in appropriate storage containers.
Support Personnel	Labour hire, unskilled workers not required to be trained in oil spill response.	Labour hire contractor, AMOSC Core Group, AMSA NRT, Internal COP personnel	Support personnel are used to help assist in manual shoreline clean-up operations. Where large areas of shoreline are affected, groups of support personnel can be useful under the instruction of trained shoreline responders to perform shoreline clean-up operations.
Beach Clean-up Kit	Beach clean-up kit consists of hand tools used to assist the collection of waste from the shoreline and transport it to the temporary waste storage containers. For example: Shovels, rakes, brooms, wheelbarrows, trowels	Available from AMOSC equipment stockpile, AMSA national plan equipment, bulk purchase from hardware store	Pre-cleaning and post removal of waste from a shoreline is a manual and laborious task and suited to support personnel.
Decontamination Kit	Decontamination kits consist of all equipment necessary to ensure that oil spill responders and equipment are suitably catered for when travelling from the hot zone (contaminated) to the cold zone (uncontaminated). These kits typically consist of, but are not limited to, the following: • Marquees • Bunds • Scrubbing brush's • Waste receptacles • Detergents	Available from AMOSC equipment stockpile, AMSA national plan equipment	In order to minimise the movement of oil from the affected shorelines to beyond the operational area, decontamination stations are setup in a warm zone to allow responders, vehicles and equipment to be cleaned prior to entering an uncontaminated zone. These stations are critical in minimising the transmission of secondary contamination beyond the operational area.

Resource	Requirement	Availability	Description
	• Hand wash stations • Jet washers		
Mechanical Equipment	Mini Excavator Bobcat Bulldozers	Available through equipment hire contractors	In areas where bulk oil has accumulated on the shoreline, it may be possible to assist in the removal with the use of mechanical equipment as opposed to manual labour alone. Mechanical equipment can help increase the amount of waste removed from the shoreline.
Skimming and ancillary equipment	Drum Skimmer Brush Skimmer Disc Skimmer Passive Weir Skimmer Rope Mop Ro Vac Rock Cleaning Brush System	Available from AMOSC equipment stockpile, AMSA national plan equipment	Floating oil caught in containment and recovery booms can be removed from the water surface prior to it stranding on the shoreline. Skimmers can be used to transport the liquid hydrocarbon from the water surface to temporary storage containers.
Waste Management Support Services	Waste management contractor	CoP waste management contractor, other waste management contractors	Once waste has been collected on the shoreline, whether it be liquid oily waste, solid oily waste, or contaminated PPE, a suitable waste contractor should be employed to assist with the removal of waste from the operational area.
Temporary Waste Storage	Fastank temporary storage. Intermediate Bulk Containers (IBC). Vikoma storage tanks. Specialised bins (plastic lined) used for storage and transport of waste.	Available from AMOSC equipment stockpile, AMSA national plan equipment	A shoreline clean-up generates vast amounts of varying waste streams. Suitable storage containers need to be available to store this waste until the waste management support can remove it from site.

4.4.3. Environmental Risk Assessment (Shoreline Clean-up)

An assessment of potential environmental impacts and risks associated with Shoreline Clean-up techniques is undertaken as part of the Otway Exploration Drilling Program EP Section 7.8.

4.5. Oiled Wildlife Response

Oiled wildlife response (OWR) is a support function that is implemented alongside other response options if applicable and commensurate to the scale and nature of the spill. OWR tactics and techniques are intended to mitigate adverse wildlife impacts by reducing the number of animals that come into contact with spilled oil, capturing and rehabilitating oiled fauna, and removing oiled carcasses to reduce secondary impacts.

OWR will be conducted under the supervision of state authorities, in accordance with state specific marine oil spill contingency plans and relevant wildlife response plans.

Typical OWR can be separated into three stages, these include:

1) **Wildlife Reconnaissance** - situational awareness / visual observations of species present and identification of species that may potentially be impacted by vessel, aircraft, vehicle, AUV, or foot.
2) **Preventative Actions**:
   a) Deterrence strategies (e.g. hazing by auditory or visual scarers)
   b) Displacement strategies (e.g. fencing or barricading techniques)
   c) Pre-emptive capture - removal of wildlife from an area and transportation to a staging facility or to an adequate area not expected to be impacted.
3) **Wildlife Rescue**:
   a) Capture of oiled wildlife – action only to be completed by trained wildlife handlers.
   b) Transportation to field processing facility and / or primary care facility staging.
   c) Triage – undertaken by trained veterinarians (euthanasia may be required).

d) Stabilisation – of wildlife prior to cleaning.
e) Cleaning – rinsing, washing, drying to remove contamination.
f) Rehabilitation – feeding, swimming, waterproofing, conditioning, pre-releases assessment.
g) Release – once approved.

4.5.1. Response Activities

Observations for oiled wildlife would occur during aerial/vessel surveillance and monitoring (OM02 and OM03 of the OSMP). A decision would be made to activate OWR based on observations as well as advice from relevant organisations, agencies and stakeholders. The responsibility for OWR depends on the location and origin of the spill.

Victoria

The Department of Energy, Environment and Climate Action (DEECA), formerly DELWP is the agency responsible for responding to wildlife affected by a marine pollution emergency in Victorian State waters. DEECAs response to oiled wildlife is undertaken in accordance with the Wildlife Response Plan for Marine Pollution Emergencies, with support of agencies including Parks Victoria and Philip Island Nature Park.

To activate oiled wildlife response, contact DEECA on **136 186** for Wildlife Emergencies and **1300 136 017** specifically for Whale and Dolphin Emergencies.

Tasmania

The Tasmanian Oiled Wildlife Response Plan ("WildPlan") sets out the minimum standard required for an Oiled Wildlife Response in Tasmania within State waters. All oil spill response strategies involving the management of wildlife needs to be planned and undertaken by experienced personnel. This role within Tasmania is the responsibility of the Environment Business Unit of the Department of Natural Resources and Environment (NRE Tas) under the leadership of the Marine Conservation Program (MCP; Wildlife, Health and Marine (WHAM) section).

The MCP Wildlife Co-ordinator should be contacted in the event of an oil spill of any size via the 24-hour "Whale" Hotline on **0427 942 597** (0427 WHALES).

Commonwealth

AMOSC and AMSA have on call personnel and equipment that can be activated to support an oiled wildlife response in commonwealth waters.

The IMT should consult with AMSA, DECCA, NRE Tas, AMOSC and the Phillip Island Nature Park wildlife clinic to provide support for any wildlife response activities, including obtaining permits to conduct an OWR in State waters and/or Commonwealth waters, as stated above.

ConocoPhillips Australia will provide support for the response through provision of resources as requested by the relevant agency utilising existing contracts such as AMOSC.

To activate, contact:

- **AMSA**: Ph 1800 641 792
- **AMOSC**: 0483 379 328

4.5.2. Response Resources

Table 4-9 provides a summary of the resources available to ConocoPhillips Australia to support a request for resource assistance from the relevant state agency.

Table 4-9: Summary of oiled wildlife response resources

Resource	Requirement	Availability	Description
OWR Personnel	AMOSC Oiled Wildlife Advisor AMOSC Core Group AMOSC Industry Strike Team Third party support agencies/organisations	Trained OWR personnel via AMOSC	Available via trained AMOSC staff, Industry personnel (via Mutual Aid) and supporting National and Global OWR organisations.
OWR Facility Establishment /Management	OWR Facilities establishment group (DWYERtech Response Ltd)	Available via AMOSC SLS	Call-off contract with service available on-site within 24hrs of call-out.
OWR Containers	1x OWR Container (Geelong) 1x OWR Container (Fremantle)	Available via AMOSC SLS	AMOSC OWR containers available onsite within 24hrs of call-out.
OWR Kits	*Geelong:* 1x OWR Fauna Hazing & Exclusion Kits 2x OWR Fauna Kits *Fremantle:* 4x OWR Fauna Hazing & Exclusion Kits *Exmouth:* 1x OWR Fauna Kit *Broome:* 1x OWR Fauna Kit	Available via AMOSC SLS	AMOSC OWR kits available onsite within 24hrs of call-out.

4.5.3. Environmental Risk Assessment

An assessment of possible environmental impact and risk associated with oiled wildlife response techniques is undertaken as part of the Otway Exploration Drilling Program EP Section 7.8.

4.6. Waste Management

Oil spill response operations generate a variety of waste streams that need to be planned for including:

- Liquid Wastes (oil and water)
- Bulk Hard Wastes including oil mixed with organic material, sand, rocks, debris, etc, and
- Sundry wastes including PPE, catering, etc.

All waste generated from oil spill response activities will require effective management, storage, transportation and disposal. The type and amount of waste generated will heavily rely on the response strategy employed, the volume of oil encountered and the affected shoreline substrate type.

4.6.1. Waste Types and Volumes

For planning purposes, stochastic modelling data has been used to calculate estimated total waste volumes for each scenario and oil type.

Stochastic modelling data was used over deterministic data as the deterministic modelling data only covers the worst-case scenario for each location. The chances of the conditions being the same as the deterministic run are slim, therefore, a stochastic approach was used which better represents the likelihood of shoreline contact. Stochastic oil spill modelling is created by overlaying hundreds of individual, computer-simulated hypothetical spills and presenting the results as a probability of shoreline contact.

In Section **4.4 – Shoreline Response: Shoreline Clean up, Figure 4-1**, potentially affected LGA's are identified for all spill scenarios. The waste generated from the shoreline clean up response strategy is primarily sand with oily residue. **Table 4-10** summarises the affected LGA's and the total potential volume based on stochastic modelling data for actionable shoreline contact. Shoreline loading of oil above 100g/m^2 is considered actionable.

The predictive modelling undertaken for all locations and both oil types along with the recommended response strategies, indicate that the volumes of waste generated can be vastly different, depending on when, where, how much, and of what oil type is spilled.

Table 4-10: Potential Waste Volumes Generated

Permit Area	Scenario	Season	Location	Waste type	Total Volume Ashore (m^3)	Total Actionable Ashore (m^3) (>100g/m^2)	Waste Volume (M^3)
T49P	Vessel Collision - 350m^3 of MDO over 6 hours, surface release	Summer	1	-	3.8	0	0
		Winter	1	-	8	0	0
		Summer	2	Sand with oil residue	35.2	35.2	352
		Winter	2	Sand with oil residue	47.4	47.4	474
		Summer	3	Sand with oil residue	7.3	7.3	73
		Winter	3	Sand with oil residue	28.8	28.8	288
	Gas Condensate LOWC 139,000m^3 released over 90 days	Summer	1	Sand with oil residue	6.1	0	0
		Winter	1	Sand with oil residue	20	8.2	82
		Summer	2	Sand with oil residue	71	71.6	716
		Winter	2	Sand with oil residue	196	196.3	1963
		Summer	3	Sand with oil residue	26.5	25	250
		Winter	3	Sand with oil residue	58.7	58.4	584
P79	Vessel Collision - 350m^3 of MDO over 6 hours, surface release	Summer	1	Sand with oil residue	20.3	3.3	33
		Winter	1	Sand with oil residue	28.9	6.5	65
		Summer	2	Sand with oil residue	20.3	41.1	411
		Winter	2	Sand with oil residue	28.9	24.7	247
		Summer	3	Sand with oil residue	9.8	17.5	175
		Winter	3	Sand with oil residue	18	32.4	324
		Summer	4	Sand with oil residue	34.1	33.8	338
		Winter	4	Sand with oil residue	43	43	430
	Gas Condensate LOWC 139,000m^3 released over 90 days	Summer	1	Sand with oil residue	38.6	24.4	244
		Winter	1	Sand with oil residue	51.9	67.3	673
		Summer	2	Sand with oil residue	121.3	127.9	1279
		Winter	2	Sand with oil residue	139.7	189.8	1898
		Summer	3	Sand with oil residue	66.6	123.3	1233
		Winter	3	Sand with oil residue	140	213.5	2135
		Summer	4	Sand with oil residue	236.6	408.9	4089
		Winter	4	Sand with oil residue	318.9	548.1	5481

Where Red, >10% probability of waste coming ashore, Orange, <10% probability of waste coming ashore and Green, 0% chance of any waste coming ashore above the actionable limit of 100g/m^2.

4.6.2. Waste Management Planning

It is envisaged that the Waste Management Plan will come into full effect from Day 2 of a response. The passage of two days allows for the reactive phase of the response to commence with operational response strategies employed.

A Waste Management Plan will need to be developed by the Incident Management Team in support of the Incident Action Plan. For shoreline response waste, this will need to be completed in support to/ in consultation with the relevant Jurisdictional Control Agency. It is recommended that a representative from the selected waste provider(s) is consulted during the development phase to ensure accuracy and to provide logistical support.

The final decisions on how waste can be lawfully stored, transported, and disposed of, will be subject to advice and approvals from the EPA at the time of the incident. Waste management contractors will need to abide by the relevant EPA acts when involved with the collection, transportation, storage, and processing of waste.

Victoria: https://www.epa.vic.gov.au/for-business/find-a-topic/manage-industrial-waste/hazardous-waste

King Island: https://epa.tas.gov.au/business-industry/regulation/waste-management

4.6.3. Waste Management: Contractors, Transport, Storage, Processing

There are several waste management contractors available in Victoria with two of the largest being Cleanaway and Veolia. Both contractors are setup and capable of collecting, storing, and processing large volumes of waste that could be potentially generated during a high-level oil spill event. Sections 4.6.3.1 and 4.6.3.2 go through the contact information and capabilities of each of these contractors in Victoria. King Island only has one waste contractor, being the King Island Council, who are responsible for all of King Islands waste management via the King Island Council waste infrastructure plan. Section 4.6.3.3 highlights the capabilities of this waste management contractor.

This information should be used to assist the development and execution of an effective waste management plan/operation.

4.6.3.1. Contact Information

[redacted]

4.6.3.2. Contractor Capability

An overview of the currently identified contractors' capabilities is provided in Table 4-11.

Table 4-11: Contractor capability overview

Capability	Primary Waste Management Support [redacted]	Secondary Waste Management Support [redacted]
Operational Depot Locations	Hazardous waste operational depots located in Sunshine, Mulgrave and Morwell in Victoria.	Operational locations across Victoria
Adherence to regulatory requirements relating to the transport, storage, and disposal of oil/hazardous waste (List them). • State/Federal • ISO Certifications	Comply with AS/NZS 4801:2001 ISO 14001 ISO 9001 OHS 609391 And all state/federal regulations	Comply with AS/NZS 4801:2001 ISO 14001 ISO 9001 And all state/federal regulations
Experience in handling Hazardous/Oily Waste	Yes, Cleanaway are one of the largest waste management providers in Australia and provide waste management across all sectors of industry.	Yes, Veolia are contracted to many companies to provide hazardous waste management

Capability	Primary Waste Management Support [redacted]	Secondary Waste Management Support [redacted]
Permitted to handle and transport Hazardous Waste Victoria wide. • Permitted fleet.	Yes, licenced by the EPA and WorkSafe to transport and handle hazardous and dangerous waste. Cleanaway has established relationships with the EPA and hold permits for the operational areas outlined. Cleanaway can also obtain permits with experienced staff on call to assist with permit applications.	Yes, by the EPA and WorkSafe to transport and handle hazardous and licenced dangerous waste
24hr On Call access?	Yes, to contracted customers via 1800 774 557	24hrs via Customer Portal
In field technical support/liaison capability.	Yes, available to contracted customers.	
Temporary Storage/In field management		
In field storage capability for liquid waste • Type of storage • Quantity available	Hazardous waste storage drums Intermediate Bulk Containers Temporary Storage Facilities – equipped with containment measures and operated in compliance with regulatory requirements	Yes, numbers to be confirmed
In field storage capability for solid waste • Type of storage • Quantity available	Bin sizes from 120L to 6.0m Skip sizes from $3m^3$ to $31m^3$	Yes, numbers to be confirmed
Ability to transfer from temporary storage to transport vehicle (Liquid and solid)	Yes, ability to transfer waste as required using pumps and vacuum trucks	
Site decontamination capability	Yes, can provide decontamination capability including road cleaning with specially designed vacuum trucks to clean the road surface if required.	
Transport		
Fleet available for Hazardous liquid waste transport including surge capacity: • Immediate • In 24hrs • In 48hrs • Total available	1500 assets available nationally. Availability is dependent on contract in place. Cleanaway has a fleet from Medium Rigid to Semi Trailers with a tank size from 6,000L to 30,000L located across their sites nationally.	Assets available in Victoria and nationally.
Fleet available for solid transport including surge capacity: • Immediate • In 24hrs • In 48hrs • Total available	1500 assets available nationally with capability to transport solid waste. Availability is dependent on contract in place	Assets available in Victoria and nationally
Vehicle decontamination capability (yes/no, if yes, describe)	No	
Road decontamination capability (Yes/no, if yes describe)	Drain cleaning, rotary mower, Industrial vacuum trucks and high-pressure blasting and access to a specially designed vacuum trucks to clean the road surface if required.	
Disposal		
Ability to dispose hazardous solid waste. • Disposal Location/s	Yes, locations Australia wide	Yes, sites in Brooklyn, Echuca Dandenong, and Hallam

Capability	Primary Waste Management Support [redacted]	Secondary Waste Management Support [redacted]
• Volume per day per location		
Ability to dispose hazardous liquid waste. • Disposal Location/s • Volume per day per location	Yes, locations in Dandenong and Campbellfield. Cleanaway also can leverage on 3rd party facilities if operationally efficient. Cleanaway sites Can process >200,000L per day	Yes, Veolia operates the Brooklyn Industrial Services Hub

4.6.3.3. King Island Council

King Island Council
PO Box 147 Currie
King Island TAS 7256
Ph: 03 6462 9000

The King Island Council will transfer waste to Charles Street transfer station/depot for relocation to either the Parenna landfill or the old Charles Street landfill.

Table 4-12: Solid waste capability – KIC King Island

Type	Capacity	First 24 Hours	24 – 48 Hours	Beyond 48 Hours
Rear Loader (240l and 660l Bins)	12 - 14 Tonne	1 Truck	1 Trucks	Based on Island availability

4.6.4. Environmental Risk Assessment

An assessment of possible environmental impacts and risks associated with Waste Management techniques has been undertaken as part of the Otway Exploration Drilling Program EP Section 7.8.

4.7. Operational and Scientific Monitoring Program

ConocoPhillips Australia have developed an Operational and Scientific Monitoring Program (OSMP) to meet the requirements of the Environment Regulations. The OSMP is the principle tool for determining the extent, severity and persistence of environmental impacts from an oil spill, and allows titleholders to determine whether their environmental protection goals are met. Operational monitoring can be used to assess how effective the oil spill response is in protecting the environment. Whereas scientific monitoring can be used to direct remediation efforts, typically after the spill response activities are completed.

The OSMP is designed to support the implementation of a range of operational and scientific monitoring plans, depending on the type of spill, location, and status of the response. The use of vessels, aircraft, and shoreline responders (on foot, vehicles) may be required to undertake the techniques identified within the OSMP.

The activation process, specific plans, capability and resourcing requirements are detailed in the OSMP, and the individual supporting plans are summarised in the Table 4-13 below.

Table 4-13: Operational and scientific monitoring plans

Plan	Title
Operational Monitoring	
OM01	Hydrocarbon and other chemical spill trajectory prediction
OM02	Hydrocarbon and other chemical spill surveillance and reconnaissance
OM03	Operational monitoring of hydrocarbon and other chemical properties, behaviour and weathering
OM04	Pre-emptive assessment of sensitive receptors at risk
OM05	Operational monitoring of sensitive receptors & SCAT
OM06	Air Quality Modelling (Responder Health and Safety)
Scientific Monitoring	
SM01	Monitoring of hydrocarbons and other chemicals in marine waters
SM02	Monitoring of hydrocarbons in benthic sediments
SM03	Survey of shoreline/intertidal sediments and biological communities to determine impacts of hydrocarbon spill and other chemicals and recovery
SM04	Monitoring of subtidal benthos to determine impacts of hydrocarbon spill/other chemicals and recovery
SM05	Wildlife surveys to determine impact of hydrocarbon / chemical spill on shorebirds and seabirds
SM06	Wildlife surveys to determine impact of hydrocarbon / chemical spill on marine megafauna
SM07	Determination of impact of hydrocarbon / chemical spill on commercial, traditional and recreational fisheries and aquaculture
SM08	Determination of impact of hydrocarbon / chemical spill on recreational, commercial and/or industrial users
SM09	Determination of impact of hydrocarbon / chemical spill on conservation, heritage and native title importance

4.8. Demobilisation

The termination of an oil spill response includes:

- Demobilisation of equipment
- Post-incident reporting
- Review and updating of current plans
- Rehabilitating damaged environments
- Resupplying equipment, and
- Post spill scientific monitoring.

The decision to demobilise needs to be made in conjunction with the relevant government authorities that may include Vic DTP, TasEPA, AMSA and NOPSEMA. This decision can me made once all termination criteria have been met for any response operation, at any time. Resources can then be moved into other operational areas or rehabilitated and stood down. Key considerations are safety and prioritisation of resources with lower utilisation, higher costs and greater decontamination needs.

The response termination process may take days or weeks to complete depending on the scope and scale of the response. Figure 4-2 below summarises the process for terminating an oil spill response and the associated activities.

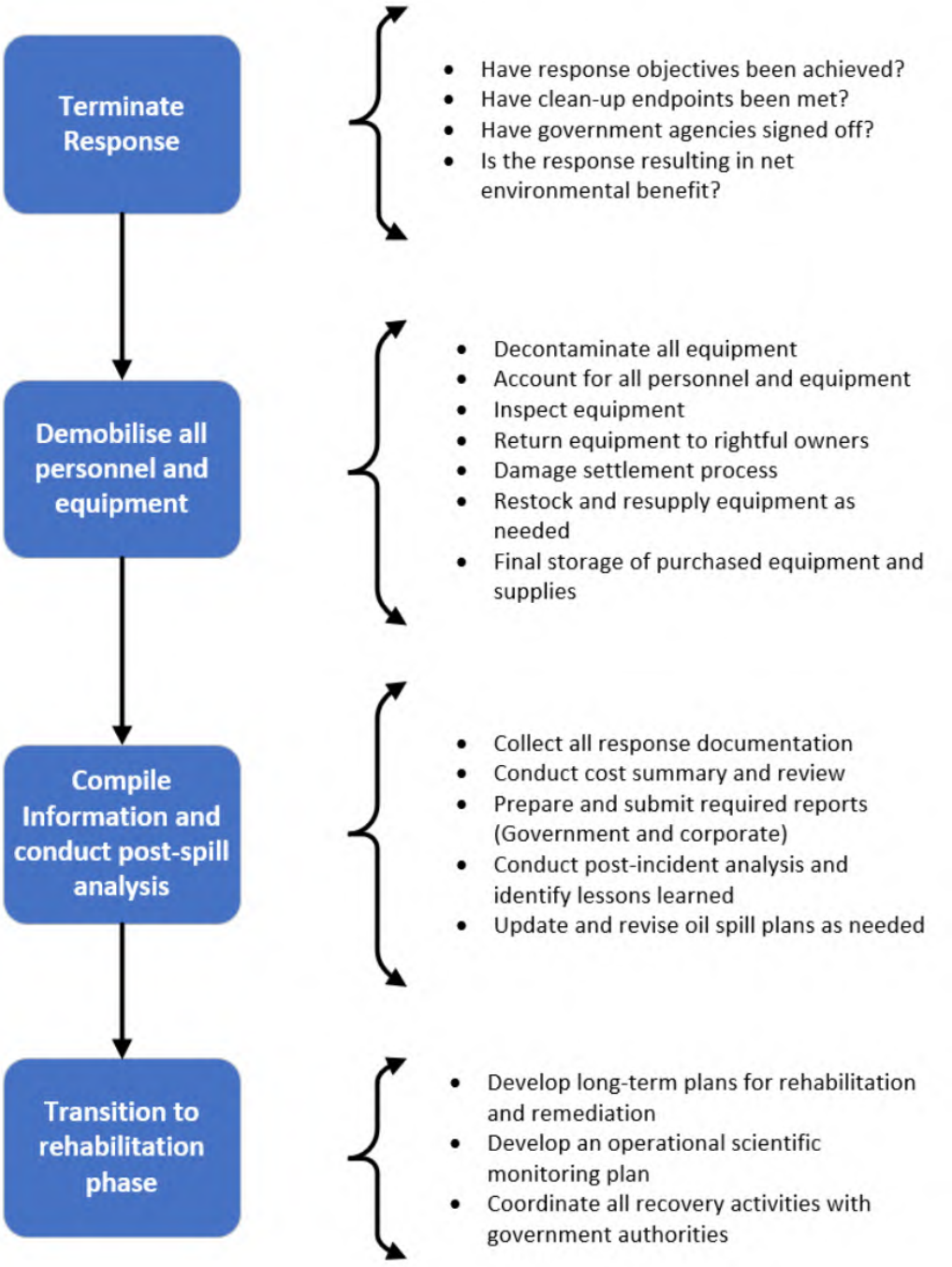


Figure 4-2: Oil spill response termination procedure

5. Response Resources

Logistical and support arrangements for the supply of people, equipment and resources will operate in a local, regional and global approach. An overview of these arrangements is provided below.

Resourcing requirements can be scaled up by providing:

- Access to AMOSC & Core Group members through membership,
- Access to industry mutual aid resources via AMOSPlan,
- Access to AMSA, NRT & SRT through national plan arrangements,
- Access to labor hire agencies for unskilled labour,
- Just in time training for unskilled labourers,
- Just in time training for pools of management staff for these labourers.

5.1. Local Resources

Local resources are those available in the state of Victoria or on King Island, Tasmania, and can be used on short notice. This equipment may come from the Port Authorities, State Jurisdictions (VIC DPT or TasEPA), local governments (e.g. access to earthmoving equipment and trained operators), or from access to locally available AMSA and AMOSC equipment.

5.2. Regional Resources

Regional response resources are those that are available within Australia. These may take time to mobilise and can come from AMOSC, AMSA, ConocoPhillips Australia operations or via the AMOSPlan Mutual Aid arrangements with industry.

5.2.1. AMOSC Resources

ConocoPhillips Australia have access to AMOSC equipment and resources Australia wide. Geelong based equipment can be mobilised to King Island in approximately 18hrs. Additional equipment in Fremantle, Exmouth and Broome can be mobilised to the Port of Geelong in approximately 40, 51 and 55hrs respectively. This includes an allowance of 4hrs for truck availability/sourcing and loading.

An overview of what equipment AMOSC has available is on the AMOSC website http://www.amosc.com.au/equipment.php

An inventory is in Appendix 3 with live readiness status and locations available via the members section of the AMOSC website https://amosc.com.au/member-login/. Access to this information is available via the AMOSC Duty Officer.

AMOSC also has access via the AMOSPlan to Mutual Aid equipment via its members. This equipment can be made available to ConocoPhillips Australia in the event of a response (Appendix 14), under best-endeavour arrangements.

AMOSPlan provides ConocoPhillips Australia access to the AMOSC Core Group. A group of industry trained marine spill response personnel available to rapidly expand and surge well trained personnel into a spill response. Core Group provides additional personnel to support a complex and/or sustained response, including Incident Management Team and field (aviation, marine and shoreline) personnel.

5.2.2. AMSA Resources

ConocoPhillips Australia have access to AMSA equipment Australia wide through AMOSC and the National Plan. AMSA maintain significant stockpiles of equipment in Adelaide, Brisbane, Dampier, Darwin, Devonport, Fremantle, Melbourne, Sydney, and Townsville.

A full inventory of AMSA equipment is available from the AMSA website: https://amsa-forms.nogginoca.com/public/equipment.html

AMSA also administers the National Response Team (NRT). The purpose of the NRT is to provide a national incident management and field operations surge capacity to support Australian pollution response control agencies responding to major marine environmental incidents. NRT is a core capability of the National Plan for Maritime Environmental Emergencies (NATPLAN) and comprises of 40 incident management team personnel and 42 field team leaders.

5.2.3. Labour Hire

ConocoPhillips Australia has access to labour hire arrangements to provide additional support to shoreline protection and clean-up operations via commercially available providers.

5.3. Global Resources and Coordination

The ConocoPhillips Global Incident Management Assist Team (GIMAT) is a specialist incident management team. Members are located globally and can be readily mobilised via virtual IMT platform (IAP software and Teams) to support a business unit IMT and FOB that has exceeded its capacity or is required to maintain sustained IMT operations over an extended duration incident.

The GIMAT can fill most roles within the ConocoPhillips IMT structure.

ConocoPhillips Australia also has access to the global Crisis Management Support Team (CMST). The CMT can request assistance, advice and support on a range of issues from the CMST including:

- Providing guidance on major corporate strategic objectives
- Being available to:
  - Assist in communications with senior personnel of business partners
  - Provide general assistance to the ABU CMT
  - Contact senior community leaders including government Ministers and others at the request of the CMT, and
  - Brief other ConocoPhillips staff and operations.

Additional resources can be mobilised in person to support the IMT and FOB with resourcing for extended duration incidents described in Appendix 1: IMT Capability Assessment, Part C: IMT Resourcing.

6. Environmental Performance

Table 6-1 provides a summary of the Environmental Performance Outcomes (EPO), Control Measures (CM), Performance Standards (EPS), Measurement Criteria (MC) and responsibilities for the implementation of this OPEP.

Table 6-1: Environmental performance requirements and responsibilities for the OPEP

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
General – Response Preparedness				
Trained and competent IMT, including Source Control Branch, and field personnel are prepared to effectively respond to a worst-case spill scenario for the duration of the activity	Response Training	ConocoPhillips Australia's IMT must undergo oil spill response training relevant to their expected role as per the competency requirements specified in OPEP Appendix 1, Part A. For IMT leadership roles, the training course must be competency-based and have occurred within 2 years prior to the start of drilling activities. Field personnel must undergo training relevant to their expected role as per the requirements specified in OPEP Appendix 1, Part F.	Training Records Testing and Exercising Programme Shoreline Induction	COP GM-HSE
	Response Testing and Exercises	Conduct oil spill response exercises annually with realistic scenarios, performance evaluations, and implementation of improvements to ensure preparedness and effectiveness. Maintain a schedule of tests of response arrangements and capability. Each test will have objectives and mechanisms to examine the effectiveness of response arrangements against the objectives of the test. Lessons from exercises and testing are captured, actioned and integrated into the OPEP within one month of receipt of the effectiveness examination. Members of ConocoPhillips Australia's IMT will attend at least one exercise or test each year (which can include non-oil pollution event scenarios).	Testing and Exercising Programme Exercise and testing report(s) including observations and opportunities for improvement Actions are managed to completion – In Intelex for Tier2/3 and GIMAT Management of Change Register	COP GM-HSE COP GM-HSE
	IMT Personnel	ConocoPhillips Australia's IMT readiness will be recorded in the IMT duty roster, which is tested weekly, commencing two weeks prior to drilling, with a minimum of 18 personnel available for initial mobilisation at any time. ConocoPhillips Australia will have arrangements in place to access at least 153 personnel qualified for IMT roles. ConocoPhillips Australia will maintain response arrangements for staffing the IMT in accordance with the OPEP Appendix 1 Part C.	IMT Duty Roster Competency Management System Records for IMT and GIMAT personnel Exercise and Testing Records	COP GM-HSE

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
Timely and ongoing consultation, notification and reporting to government agencies and other relevant persons	Communications	Maintain Notifications Checklist (Section 3.2 of the OPEP).	Management of Change Register	COP GM-HSE
		Undertake consultation with relevant government departments and other relevant persons in development of OPEP to align response strategies and minimise potential impacts and risks to environmental values and sensitivities.	Consultation Records EP Sensitive Information Report	COP GM-HSE
		Prior to commencement of drilling, undertake testing of communication protocols between: • The MODU and the National Response Centre • The IMT, CMT and Source Control Branch • The IMT and Jurisdictional and Regulatory Authorities and Control Agencies • The Source Control Branch and well control specialists.	Consultation Records Exercise and Testing Records	COP GM-HSE
Prepare for timely implementation of Response Plans	Supporting Plans	Supporting Plans are developed prior to commencement of exploration activities, including: • Aviation Plan • Shoreline Plan • Tactical Response Plans (TRPs).	Plans	COP GM-HSE
Maintain capability to effectively implement source control response strategies	Shipboard Marine Pollution Emergency Plan (SMPEP) / Shipboard Oil Pollution Emergency Plan (SOPEP)	Ensure a current, approved, and accessible SOPEP onboard all project vessels, with 100% crew training and annual drills, maintaining detailed records and annual updates to ensure compliance and readiness.	Vessel Inspection Reports	COP GM-HSE
	Service Agreements	Establish agreements, contracts, memberships or pre-qualifications for source control response capabilities prior to drilling, and maintain for the duration of the drilling activity, including: • AMOSC Subsea First-strike Response Toolkit (SFRT) membership (equipment and trained responders	Agreements, contracts, memberships and pre-qualification records are current	COP GM-HSE

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
		• Signatory to APPEA Memorandum of Understanding: Mutual Assistance • Well control specialists to supply specialist personnel and equipment • Freight services provider.		
	Source Control Response Resources, Validation and Monitoring	Prior to undertaking drilling activities ConocoPhillips Australia shall have: • A NOPSEMA accepted WOMP detailing the controls in place to restore well integrity in the event of a LOWC incident. • A Source Control Emergency Response Plan (SCERP) inclusive of relief well plan demonstrating source control response arrangements are in place to successfully intersect a flowing well within 90 days.	Accepted WOMP SCERP	COP Drilling Manager
		Establish access to resources to support source control response for worst-case duration of 90 days, prior to drilling, and maintain access for the duration of the drilling activity, including: • Access to additional trained and competent personnel to support and maintain the Source Control Branch, and • Access to equipment and consumables in line with source control response strategies, including long-lead items such as MODU, casing, casing shoes and wellhead equipment.	Agreements, contracts, memberships and pre-qualification records are current IMT Roster Log of rig availability	COP Drilling Manager
		Within 3 months prior to undertaking drilling, and annually thereafter, ConocoPhillips Australia shall undertake a source control exercise ensuring the testing of arrangements in place to: • Effectively apply the SCERP in a hypothetical LOWC event. • Initiate the AEP Memorandum of Understanding: Mutual Assistance via AEP members and confirm a suitable alternate MODU could be engaged within 2 weeks of a hypothetical LOWC event. • Mobilise Well Control Specialists to Brisbane/Geelong within 3 days of a hypothetical LOWC event • Contract suitable support vessels within 2 weeks of a hypothetical LOWC event.	Exercise records confirm pre-drill and annual source control capability testing. Exercise records confirm access to enough source control equipment and personnel within timeframes specified within SCERP and relief well plans.	COP Drilling Manager

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
		• Initiate the SCB within 2 hours of a hypothetical LOWC event and maintain the SCB for an expected 90-day LOWC event. Prior to undertaking drilling activities, and annually thereafter, ConocoPhillips Australia shall test emergency communications protocols between: • MODU and National Response Centre (NRC). • CMT, IMT and SCB. • IMT and Regulatory authorities / Control Agencies. • IMT / SCB and source control response providers. ConocoPhillips Australia shall validate that contracted MODUs and vessels have undertaken exercises and spill drills in accordance with their approved SOPEP / SMPEP or equivalent.	Exercise records confirm emergency communications protocols in place and effective. Rig and vessel exercise / drill records	
		Monitor the location and availability of source control response resources and materials defined within the SCERP prior to and during drilling, including: • Available suitable MODUs, contact details and safety case status. • Available support vessels and contacts. • Available equipment* required to support a source control response and contacts. * Tracked equipment includes wellhead systems, conductor, surface and intermediate casing status.	Agreements, contracts, memberships and pre-qualification records are current Exercise records confirm access to enough source control equipment within timeframes specified within SCERP and relief well plans. Log of rig availability	COP Drilling Manager
		In the event that monitoring indicates a suitable MODU and/or support vessel is not available through APPEA MOU, develop a mobilisation plan for nominal international MODU, including biosecurity clearance, prior to commencing drilling.	Mobilisation Plan for international MODU IMS risk assessment	COP Drilling Manager
		Maintain Relief Well Timeline based on monthly monitoring of readiness. Undertake frequent review and update of timeline and adjust according to Source Control Response Resource Monitoring.	Relief Well Timeline Log of rig availability	COP Drilling Manager

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
	Blowout Preventer (BOP)	The BOP will be routinely function and pressure tested in accordance with manufacturer's specifications and in alignment with Drilling Contractors preventative maintenance system.	BOP Test Report	COP Drilling Manager
		Third-party verification / inspection of BOP function and pressure tests – conducted prior to commencement of drilling campaign.	Third Party BOP Inspection Report	COP Drilling Manager
		Alternative BOP configuration (e.g. additional Blind Shear Ram installed, addition of pipe ram, sealing mechanisms) following BOP risk assessment.	BOP Configuration Report	COP Drilling Manager
	Relief Well Plan (RWP)	Complete relief well design assessment to identify and screen relief well spud locations prior to drilling campaign (pre-drilling) to reduce time taken to plan and execute relief well.	Relief Well Design Assessment in SCERP Seabed Survey Report	Drilling Manager
Maintain capability to effectively implement Surveillance, Modelling & Visualisation (SMV), Shoreline Response and Oiled Wildlife Response (OWR) in a Level 2 or 3 spill event	Service Agreements for SMV, Shoreline Response and OWR	ConocoPhillips Australia will have response arrangements to: • Meet the maximum predicted shoreline response resources need of 35 trained personnel phased in to the response within 14 days, and 72 trained personnel within 28 days. • Meet the maximum predicted shoreline response resources need of 353 untrained personnel phased in to the response within 14 days, and 708 untrained personnel within 28 days. • Sustain a response of 794 personnel for up to 112 days. • Have a ratio of 10:1 unskilled labour to qualified foremen in the shoreline response teams. Readiness of the response arrangements to meet this need will be verified with each service provider 30 days prior to the start of the exploration drilling program.	Agreements, contracts, memberships and pre-qualification records are current and demonstrate capability and capacity	COP GM-HSE
	Pre-position first strike response resources on King Island, Tasmania	First strike response equipment will be pre-positioned on King Island to support rapid response, in the event that drilling is scheduled to occur within the central zone of T/49P Operational Area, adjacent to King Island (Org ID: 72, King Island Shire Council, Event ID: 1085, 4014, 4856, FB ID: 1009, 1104, 1136).	Agreements, contracts in place Equipment in position prior to drilling in central zone of T/49P	COP GM-HSE

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
General – Response Actions				
Respond to any potential and actual spill scenario in a timely manner.	Activation of the IMT	Activate the COP IMT within 60 minutes of confirming an oil spill incident Establish full Brisbane-based IMT within 2 hours (L2/3) Activate Source Control Branch if the source is not controlled within 2 hours (L2/3). Request 3 x AMOSC Technical Advisors are deployed to the IMT within 3 hours (L2/3) Initiate activation of COP GIMAT within 24 hours (L2/3)	Assembly records IAP System	COP IC
	Timely activation of in-field response capability	Determine response level within 4 hours Determine response required within 5 hours Request 3 x AMOSC Operations Officers are deployed to support field operations within 3 hours (L2/3) Establish initial FOB at AMOSC within 6 hours (L2/3)	IAP System	COP IC
Timely and ongoing consultation with relevant government agencies	Communications	Confirm regulatory notification have been made within 2 hours (L2/3). Establish a line of communications with the State IMT/s and exchange Liaison Officers within 2 hours (L2/3). Establish line of communication with AMSA, NOPSEMA and OPICC and facilitate integration of liaison officers within 2 hours (L2/3)	IAP System Situation Reports (SITREPs)	COP IC
		Provision of ongoing Situation Reports (SITREPs). Offer to conduct briefings with key stakeholders within two hours of an oil spill incident, documenting all interactions.	IAP System Situation Reports (SITREPs) Consultation Records	COP IC
	Operational Monitoring Information	Provide information to the Jurisdictional Authority and State Control Agency/ies from operational monitoring, including: • OM01: Hydrocarbon Spill Trajectory Prediction • OM02: Hydrocarbon Spill Surveillance and Reconnaissance • OM03: Operational Monitoring of Hydrocarbon Properties, Behaviour and Weathering	IAP System Consultation Records	COP IC

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
		• OM04: Pre-emptive Assessment of Sensitive Receptors at Risk • OM05: Operational Monitoring of Contaminated Sensitive Receptors.		
	Operational NEBA and Risk Assessment	Undertake Net Environmental Benefit Analysis (NEBA) and risk assessment in consultation with State CA and relevant stakeholders prior to commencement. NOTE: ConocoPhillips Australia's NEBA and risk assessment processes will be used unless otherwise directed.	IAP System Consultation Records	COP IC
Establish, implement and maintain effective safety exclusion zones	Exclusion Zones	The need for safety exclusion zones, and any changes to these, to prevent exposure of contractors and third parties to hazardous conditions is documented in the IAP.	IAP System documents identification and communication of safety exclusions zones	COP IC
Source Control Actions				
Implement Source Control Emergency Response Plan to regain control of the well and eliminate the release of hydrocarbons to the environment	Response Timeline	During incident, undertake frequent review and update of Relief Well Timeline and adjust according to Source Control Response Resource Monitoring.	IAP System Relief Well Timeline	COP IC
	Blowout Preventer (BOP)	Activate BOP as per documented procedure and assess effectiveness.	IAP System	COP IC
	Survey Capability	Mobilise ROV from support vessel or MODU as soon as safely practicable to survey the source of the leak and support planning.	IAP System	COP IC
	Source Control Diagnostics	Remote access to well control specialists within 24 hours and mobilisation of well control specialists within 3 days, if required, to support diagnosis of well condition and develop remedial action options.	IAP System	COP IC
	Debris Clearance and Intervention	Commence debris clearance and intervention activities as soon as safely practicable from MODU or support vessels. If in-field resources are damaged / unavailable, mobilise alternate vessel with appropriate tooling to initiate repairs.	IAP System	COP IC

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
		Attempt direct intervention via ROV using supplied source control equipment (hot stab) and trained responders, as soon as safely practicable.	IAP System	COP IC
	Relief Well Plan (RWP)	Manage relief well operations in accordance with the Incident Action Plan (IAP), Relief Well Plan (RWP) and third-party requirements.	IAP System Relief Well Plan Relief Well Timeline	COP IC
Surveillance, Modelling & Visualisation (SMV)				
Implement Surveillance, Modelling & Visualisation (SMV) to inform spill response (Level 2 or 3 spill only)	Oil Spill Tracking Buoy	An oil spill tracking buoy and instructions for deployment will be located offshore at all times when vessels are operating.	Equipment manifest (or equivalent evidence)	COP GM-HSE
		Oil spill tracking buoy deployed in safe proximity to plume as soon as possible.	IAP System	COP IC
	Oil Spill Trajectory Modelling (OSTM)	Initiate Oil Spill Trajectory Modelling (OSTM) via RPS-APASA within 2 hours of spill incident notification, with initial results available within 5 hours, in accordance with OM01 (Hydrocarbon Spill Trajectory Prediction).	IAP System	COP IC
	Satellite Imagery	Request satellite imagery for area via AMOSC within 48 hours of spill incident notification, subject to availability of Satellite and visibility, in accordance with OM02 (Hydrocarbon Spill Surveillance and Reconnaissance).	IAP System	COP IC
	Aerial Observation	Initiate aerial observation during daylight hours within 24 hrs of spill incident notification in accordance with OM02 (Hydrocarbon Spill Surveillance and Reconnaissance).	IAP System	COP IC
	Vessel Observation	Initiate vessel observation within 2 hours of spill incident notification in accordance with OM02 (Hydrocarbon Spill Surveillance and Reconnaissance).	IAP System	COP IC
	Oil Spill Vector Calculation	Initiate manual vector calculations to identify spill impact areas within 12 hrs of spill incident notification.	IAP System	COP IC

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
No injuries or death of megafauna resulting from monitor and evaluate activities	Response – Marine mammal 'No Approach Zones' and 'Buffer Distances'	Vessel masters and crew will be briefed on and adhere to caution and 'no approach zones' and interaction management actions as defined in OSMP, e.g. EPBC Regulations 2000 – Part 8 Division 8.1 and Victorian Wildlife (Marine Mammals) Regulations 2019.	Induction Induction attendance records	COP GM-HSE
		Aircraft will ensure buffer distances of 500m (helicopters) and 300m (fixed wing) are maintained to whales and dolphins.	Induction Induction attendance records	COP GM-HSE
	Response – Incident reporting	Any injury to, or mortality of, an EPBC Act Listed Threatened or Migratory Species (including those from a vessel strike) will be recorded on the National Ship Strike database within 72 hours.	Incident Reports IAP System	COP GM-HSE
Shoreline Response – Protection and Deflection				
If requested by the relevant Control Agency, timely implementation of shoreline protection and deflection for priority protection sites	Implementation of Shoreline Response Sub-Plan and Tactical Response Plans (TRPs)	In the event of an incident, a site-specific shoreline response sub-plan will be developed in consultation with relevant government agencies and will include details on arrangements for shoreline protection and deflection.	Shoreline Response Sub-Plan	COP GM-HSE
		TRPs are implemented for priority protection areas, where shoreline loading is predicted to exceed 100 g/m^3 within 7 days.	TRPs IAP System	COP GM-HSE
If requested by the relevant Control Agency implement or provide resources for shoreline protection and deflection (Level 2 or 3 spill), appropriate to the nature and scale of predicted shoreline impacts	Resource Deployment	SCAT teams deployed and available onsite within 48 hours of spill event (daylight hours permitting) in consultation with the State Control Agency to undertake rapid reconnaissance survey of shoreline and intertidal habitat, in accordance with OM05 (Operational Monitoring of Contaminated Sensitive Receptors).	IAP System Consultation Records	COP IC
	Access Authority	In consultation with State Control Agency, obtain access authority from relevant stakeholders prior to accessing shoreline.	IAP System Consultation Records	COP IC
	Response Communications Plan	Develop Cultural Values Terrestrial Sensitivity Model prior to commencement of the activity to support mitigation and response strategies for identified cultural heritage risks associated with the	Cultural Values Terrestrial Sensitivities Model	GM-HSE

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
Impacts to cultural heritage and social values are prevented		petroleum activity, reducing the likelihood and consequence of unplanned events with the potential to effect cultural values and sensitivities.		
		Cultural Values Terrestrial Sensitivity Model: In consultation with the Cultural Heritage specialist, interrogate the cultural values terrestrial sensitivity model to identify 'Places' that may be at risk of shoreline impact.	IAP System Consultation Records	COP IC
		Consultation with First Nations people: In conjunction with State Control Agency, engage with First Nations people to facilitate site surveys and tagging out and protection of identified places of importance to ensure no impact occurs without approval (permit or otherwise depending on which state).	IAP System Consultation Records Approval (Permit, etc)	COP IC
		Consultation with relevant government departments: In conjunction with State Control Agency, consult with relevant government departments prior to deployment of equipment to establish controls for other marine and coast users along affected coastline.	IAP System Consultation Records	COP IC
Impacts to native vegetation and fauna are prevented	Site survey for critical habitat	Surveys are undertaken to identify, mark out and protect nesting and critical habitat.	IAP System	COP IC
	Trained fauna handlers	Only trained and accredited teams deployed by the Lead Agency for oiled wildlife will approach and handle fauna.	Shoreline Induction Induction Records	COP IC
	Use of existing tracks and pathways, where possible	Utilise existing tracks and paths where possible to minimise disturbance associated with the implementation of this response technique.	Shoreline Induction Induction Records	COP IC
Shoreline Response – Shoreline Clean-up				
If requested by the relevant Control Agency, timely implementation of shoreline clean-up for priority protection sites	Implementation of Shoreline Response Sub-Plan and Tactical Response Plans (TRPs)	In the event of an incident, a site-specific shoreline response sub-plan will be developed in consultation with relevant government agencies and will include details on arrangements for shoreline clean-up.	Shoreline Response Sub-Plan	COP GM-HSE
		TRPs are implemented for priority protection area, where shoreline loading is predicted to exceed 100 g/m^3 within 7 days.	IAP System TRPs	COP GM-HSE

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
If requested by the relevant Control Agency implement or provide resources for shoreline clean-up (Level 2 or 3 spill), appropriate to the nature and scale of predicted shoreline impacts	Shoreline Assessment and Clean-up Team (SCAT) Resource Deployment	SCAT teams deployed and available onsite within 48 hours of spill event (daylight hours permitting) in consultation with the State CA to undertake rapid reconnaissance survey of shoreline and intertidal habitat, in accordance with OM05 (Operational Monitoring of Contaminated Sensitive Receptors).	IAP System Consultation Records	COP IC
	Access Authority	In consultation with State Control Agency, obtain access authority from relevant stakeholders prior to accessing shoreline.	IAP System Consultation Records	COP IC
Impacts to cultural heritage and social values are prevented	Consultation with First Nations people	In conjunction with State Control Agency, engage with First Nations people to facilitate site surveys and tagging out and protection of identified areas or importance.	IAP System Consultation Records	COP IC
	Consultation with relevant government departments	In conjunction with State Control Agency, consult with relevant government departments prior to deployment of equipment to establish controls for other marine and coastal users along affected coastline.	IAP System Consultation Records	COP IC
Impacts to native vegetation and fauna are prevented	Site survey for critical habitat	Surveys are undertaken to identify, mark out and protect nesting and critical habitat.	IAP System	COP IC
	Trained fauna handlers	Only trained and accredited teams deployed by the Lead Agency for oiled wildlife will approach and handle fauna.	Shoreline Induction Induction Records	COP IC
	Use of existing tracks and pathways	Utilise existing tracks and paths where possible to minimise disturbance associated with the implementation of this response technique.	Shoreline Induction Induction Records	COP IC
Oiled Wildlife Response				
Timely and ongoing consultation with relevant government agencies	Communications	Notification of relevant State Agency/ies as soon as possible after initial sighting of oiled wildlife or when operational monitoring determines oiling of wildlife is likely.	IAP System	COP IC

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
If requested by the relevant Control Agency implement or provide resources for oiled wildlife response (Level 2 or 3 spill)	Oiled Wildlife Response Resources	AMOSC Oiled Wildlife Response kits are deployed to site within timeframes as directed by State Control Agency/ies.	IAP System	COP IC
		Additional Control Agency resource requirements are met throughout the response.	IAP System	COP IC
Wildlife is only approached or handled by state agency trained oiled wildlife responders, unless formal direction is received from the state government IMT	Response Training	ConocoPhillips Australia's response personnel training includes content on wildlife interaction restrictions.	Training Records Incident Reports	COP GM-HSE
		Only trained and accredited teams deployed by the Lead Agency for oiled wildlife will approach and handle fauna.	Shoreline Induction Induction Records	COP IC
Impacts to cultural heritage and social values are prevented	Consultation with First Nations people	In conjunction with State Control Agency, engage with First Nations people to facilitate site surveys and tagging out and protection of identified areas or importance.	IAP System Consultation Records	COP IC
	Consultation with relevant government departments	In conjunction with State Control Agency, consult with relevant government departments prior to deployment of equipment to establish controls for other marine and coastal users along affected coastline.	IAP System Consultation Records	COP IC
Impacts to native vegetation and fauna are prevented	Site survey for critical habitat	Surveys are undertaken to identify, mark out and protect nesting and critical habitat.	IAP System	COP IC
	Use of existing tracks and pathways	Utilise existing tracks and paths where possible to minimise disturbance associated with the implementation of this response technique.	Shoreline Induction Induction Records	COP IC
Waste Management				
Management of waste generated by response activities will be	Activate Waste Management Contractor	Notify identified waste contractor/s to prepare for potential liquid and sold wastes within 12 hours (L2/3)	IAP System Consultation Records	COP IC

Environmental Performance Outcome	Control Measure	Environmental Performance Standard	Measurement Criteria	Responsible Person
appropriately handled, stored, transported and disposed in consultation with the relevant Control Agency.	Development of a Waste Management Sub-Plan	**Waste Management Sub-Plan** In the event of an incident, site-specific waste management sub-plan(s) will be developed in consultation with relevant government agencies and will include details on arrangements for: • Waste handling • Waste storage • Waste transport • Waste disposal.	Waste Management Sub-Plan Consultation Records	COP IC

Appendix 1: IMT Capability Assessment

Part A: IMT Training and Competency Matrix

IMT TRAINING & COMPETENCY MATRIX 2024

Applicable to ConocoPhillips Australia IMT

Name	ICS 100 & 200	ICS 300	Course in Oil Spill Response Management (IMO Level 2 equivalent)	Course in Oil Spill Response Command & Control (IMO Level 3 equivalent)	Spill Awareness Workshop	Spill Response Workshop	General IMT Role Training	Discussion Exercise	Functional Desktop Exercise
Command Staff									
Incident Commander	☑	☑		☑		☑	☑	☑	☑
Deputy Incident Commander	☑	☑		☑		☑	☑	☑	☑
Historian	☑	☑		☑	☑	☑	☑	☑	☑
Safety Officer	☑	☑			☑	☑	☑	☑	☑
Liaison Officer	☑	☑				☑	☑	☑	☑
Human Resource Officer	☑	☑			☑	☑	☑	☑	☑
Public Information Officer	☑	☑			☑	☑	☑	☑	☑
Security/Intelligence Officer	☑	☑				☑	☑	☑	☑
Legal Officer	☑	☑				☑	☑	☑	☑
ICS Specialist	☑	☑				☑	☑	☑	☑
General Staff									
Operations Section	☑	☑	☑			☑	☑	☑	☑
Planning Section	☑	☑	☑			☑	☑	☑	☑
Logistics/ Section	☑	☑	☑			☑	☑	☑	☑
Finance Officer	☑	☑	☑			☑	☑	☑	☑

Note 1: Table applies to all ConococPhillips Australia IMT. GIMAT personnel will have ICS and IMO (or equivalent) training and will be required to complete activity specific training at time of onboarding.

Note 2: ConocoPhillips Australia IMT are required to refresh IMO level II and III equivalent training every 3 years. All team members are due to refresh in February 2026.

Part B: IMT Training Description

TRAINING DESCRIPTION

Name	ICS 100 & 200	ICS 300	Course in Oil Spill Response Management	Course in Oil Spill Response Command & Control	Spill Awareness Workshop	Spill Response Workshop	General IMT Role Training	Discussion Exercise	Functional Desktop Exercise
Objective/ Description	ICS 100 & 200 courses introduces ICS and provides the foundation for higher level ICS training. It describes the history, features and principles, and organizational structure of the system. It is designed to enable personnel to operate efficiently during an incident or event within the ICS. ICS-200 provides training and resources for personnel who are likely to assume a supervisory position within the ICS.	ICS-300 provides an in-depth focus on ICS that includes the tools, practices, and procedures that are available in ICS to effectively manage emergency incidents or planned local events at a local Type 3 level. Expanding upon ICS-100 and -200, this course ensures that responders understand the basic ICS concepts that allow an incident management organization to expand and contract as needed to fit the incident.	Provides training in the safe and effective operation of offshore, nearshore and shoreline oil spill response equipment for individuals and team leaders.	Provides participants with the knowledge and skills required to be appointed as an Incident Controller and to effectively lead an Incident Management Team.	The objective to introduce the essential elements of a Marine Oil Spill Response and to provide an outline of the key principles and issues associated with marine hydrocarbon releases and responses. This workshop is valuable for all personnel likely to provide support during an oil spill response.	The workshop's goal is to practice implementing the initial response processes as detailed in the OEDP OPEP and supporting emergency response documentation. ConocoPhillips IMT undertake an ICS planning process that produces an Incident Action Plan (IAP) for the next operational period. Provide a greater understanding of the key stakeholders involved in an Otway incident.	Internal IMT training that aims to provide knowledge and understanding of CoP's incident management system, processes and roles and responsibilities to be fulfilled by the IMT to effectively respond to an incident.	A facilitated exercise built around discussion of a scenario – providing an opportunity to explore issues in some depth and give verbal responses to situations. These discussion exercises are valuable for all personnel likely to provide support during an oil spill response.	An exercise that involves the testing and deployment of incident or crisis management teams, to enact plans or processes against a to a complex plausible scenario and/or worst case spill scenario scenario. Continue to develop spill response knowledge, building capability and understanding of notifications and communication protocols.
Overview of Content	**ICS-100** • ICS applications • ICS organizational principles and elements • ICS positions and responsibilities • ICS facilities and functions • ICS planning **ICS-200** • Leadership & Management • Delegation of Authority & Management by Objectives • Functional Areas & Positions • Briefings • Organizational Flexibility • Transfer of Command	• Roles and Responsibilities • Initial response activities • Staffing and organizing relationships and interactions with staff and other stakeholders • Executive-level interactions Command's direction • Exercise Learning Components • Meetings, Briefings and Support Activities • IAP Prep and Approval Executing Plan and Assessing Progress • External Coordination Transitioning and Demobilization	• Fundamentals of oil spill response • Roles & responsibilities of the IMT and Incident Action Planning • Oil spill assessment and notification procedures, • Oil spill response techniques and strategies, • Identification, operation, deployment and recovery of oil spill response equipment, • Site assessment, decontamination and waste management, and • Communications between tactical field operations	• Fundamentals of oil spill response • The leadership of an oil spill management team, • Roles and responsibilities of IMT Functions - (Incident Controller, Planning, Operations, Logistics, Finance & Administration), • Identification of response objectives, appropriate response strategies and alternative response options, • Decision-making and communication, and • Relevant legislation, frameworks, intergovernmental agreements and Oil Pollution Emergency Plans.	• Workshop context – Otway Exploration Drilling Program • Australian Arrangements - Government & Industry • Oil spill risk, fate & weathering • Marine oil spill response strategies • ConocoPhillips response arrangements • Case Study/ Exercise	• The response processes and procedures detailed within the Otway Exploration Drilling Oil Pollution Emergency Plan (OPEP) • Key oil spill response knowledge including response strategies, equipment selection, and logistical support, • IMT operations, functional roles, and responsibilities, • Management of the initial reactive phase of the incident and preliminary development of an Incident Action Plan (IAP) for the next operational period • The linkages and interdependencies within the emergency response arrangements between ConocoPhillips and Government (Federal and State).	• Roles and Responsibilities • Initial response activities • Staffing and organizing relationships and interactions with staff and other stakeholders • Exercise Learning Components • Meetings, Briefings and Support Activities • IAP Prep and Approval Executing Plan and Assessing Progress • Lessons learnt from previous exercises/workshops • Training is conducted in alignment with learnt initial training for ICS.	• Practice the ability of the CoP IMT to communicate with jurisdictional equivalents on objectives alignment and resources request processes • Practice the first 24 hours activation of the OPEP with CoP IMT, critical contractors and supporting agencies • Practice the sustained human resourcing requirements into the CoP IMT from internal and external sources (LOWC scenario) • Training is conducted in alignment with learnt initial training for ICS.	• Test CoP ability to develop an IAP (against LOWC scenario) using ICS • Test the integration of the CoP GIMAT under an ABU IMT led incident • Against a LOWC scenario, test the IMT/CMT - -ability to implement the strategies in the OPEP, -ability to communicate with jurisdictional counterparts, -ability to develop and execute an IAP across multiple planning periods, -ability to forward plan human resources for multiple operational periods
Frequency of attendance	Initial Training	Initial Training	Once every 3 years	Once every 3 years	Once a year	Once a year	Three times a year	Annually	Annually

Note:
The above competency pathway is aligned to the 2021 APPEA Guidance document:Incident Management Teams - Knowledge requirements for responding to marine oil spills. The exercise requirements and content are aligned to the "Testing and Exercise Programme" document

Part C: IMT Resourcing

Incident Management Team (IMT) Resourcing

Level 2 / 3 Incident based on worst-case scenario

#	IMT Position		IMT rotation and shift availability				COP IMT		Available External Resources						Additional Resources	
	Main Position/Unit	Initial Mobilisation - based on Level 1 localised response	Team 1	Team 2	Night shift/ backup	Total Required	Brisbane	GIMAT	AMOSC Geelong & Fremantle	Labrador	RPS, Other	The Response Group (TRG)	External Agencies	Total Available	Core Group via AMOSPlan	CMST
1	Incident Commander	1	1	1	1	3	4	5						9	*Approx. 86 Core Group Members available to fill various roles in the IMT (subject to availability and skill set) (as at YTD)*	*180 CMST personnel are available to support in various functional roles, if required (as at YTD)*
2	Deputy Incident Commander		1	1		2										
3	Human Resources Officer	1	1	1		2	3							3		
4	Safety Officer	1	1	1	1	3	4	4						8		
5	Public Information Officer	1	1	1		2	4	5						9		
6	Legal Officer		1	1		2	3	2						5		
7	Security/ Intelligence Officer	1	1	1		2	1	3						4		
8	Liaison Officer (VIC)	1	1	1	1	3	7	4						11		
9	Liaison Officer (TAS)	1	1	1	1	3										
10	Liaison Officer (CMT)	1	1	1	1	3										
11	Historian	1	1	1	1	3	5	5						10		
12	ICS Specialist		1	1		2	1	4				2		7		
13	Operations Section Chief	1	1	1	1	3	2	3						5		
14	Deputy Operations Section Chief		1	1		2										
15	Recovery and Protection Branch Director		1	1		2	2							2		
16	>Protection Group Supervisor		1	1		2	1		1					2		
17	>Shoreside Recovery Group Supervisor (VIC/Tas)		2	2		4	2				2			4		
19	>Disposal/ Waste Mgmt/Decom Group Supervisor		1	1		2	1		1					2		
21	Emergency Response Branch Director		1	1		2	1	1						2		
22	Source Control Branch Director	1	1	1	1	3	1	1		1				3		
23	>Subsea Response Group Supervisor		1	1		2		1		1				2		
24	>SIMOPS Group Supervisor		1	1		2	1			1				2		
25	>Relief Well Group Supervisor		1	1		2		1		1				2		
26	>Top Kill Group Supervisor		1	1		2		1		1				2		
27	>Logistics Group Supervisor		1	1		2	1	1						2		
28	Air Operations Branch Director		1	1		2	1		1					2		
29	>Air Tactical/Support Group Supervisor		1	1		2	1		1					2		
31	Wildlife Branch Director		1	1		2	1		1					2		
32	>Wildlife Recovery Group Supervisor		1	1		2	2							2		
33	>Wildlife Rehabilitation Center Manager		1	1		2	2							2		
34	Support Services Branch/Staging Area Manager		1	1		2	2							2		
35	Planning Section Chief	1	1	1	1	3	2	3						6		
36	Deputy Planning Section Chief		1	1		2			1							
37	Situation Unit Leader	1	1	1	1	3	2	3						5		
38	>COP Specialist		1	1	1	3	2	1						3		
39	Resource Unit Leader	1	1	1		2	1	2						3		
40	>Check-In/ Status Recorder		1	1		2	1	1						2		
41	Documentation Unit Leader		1	1		2	1	2						3		
42	Environment Unit Leader	1	1	1		2	2							2		
43	>Scientific Support Coordinator		1	1		2	1	1			2			4		
44	>Trajectory Forecasting Tech Specialist		1	1		2					2			2		
45	>Resources at Risk/Historical/Cultural Specialist		1	1		2	1		2				2	5		
47	>Environmental Specialist		1	1		2		1	1					2		
48	>Sampling Tech Specialist		1	1		2		2						2		
49	>Remediation/Disposal Specialist		1	1		2		2						2		
50	>SCAT Coordinator (VIC/Tas)		2	2		4	2		2					4		
53	>Wildlife Specialist		1	1		2		2						2		
54	Demobilization Unit Leader		1	1		2		3						3		
55	Logistics Section Chief	1	1	1	1	3	2	1						3		
56	Deputy Logistics Section Chief		1	1		2										
57	Service Branch Director		1	1	1	3		3						3		
58	>Communications Unit Leader		1	1		2		3						3		
59	>>*IT Service Manager*		1	1		2	1					2		3		
60	>Food Unit Leader		1	1		2	2							2		
61	>Medical Unit Leader/Responder Rehab Manager		1	1		2	2							2		
63	Support Branch Director		1	1		2	1	1						2		
64	>Supply Unit Leader		1	1		2	1	1						2		
65	>>*Ordering /Receiving/Distribution Manager*		1	1		2		2						2		
67	>Facilities/Security Unit Leader		1	1		2		2						2		
69	>Ground Support Unit Leader		1	1		2	1	1						2		
70	>Vessel Support Unit Leader		1	1		2	2							2		
71	Finance Section Chief	1	1	1	1	3	2	1						3		
72	Deputy Finance Section Chief		1	1		2	1	1						2		
73	>Cost/Time Unit Leader		1	1		2	2							2		
74	>Procurement Unit Leader		1	1		2	2							2		
75	>Compensation/Claims Unit Leader		1	1		2	1	1						2		
76	>Administrative Unit Leader	1	1	1	1	3	2	1						3		
		18	69	69	15	153	90	82	11	5	6	4	2	200		
							172									

Note: Numbers reflect current known and planned resources as at July 2024.

Part D: Testing and Exercising Programme (current as at 5 July 2024)

ConocoPhillips Australia

Otway Exploration Drilling – Testing & Exercising Programme

Prepared by the Australian Marine Oil Spill Centre (AMOSC)

June 2024

Revision Detail

Rev Number	Date	Author
0.01	25-06/24	AMOSC

Contents

1 Introduction

Purpose

In the 24 months leading up to, and then during the drilling campaign, CoP will execute a programmed series of exercises ('exercise programme').

The purpose of the exercise programme is:

- To meet the requirements of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 Section 22, (12), (13) and (14);*
- To demonstrate (via testing) that CoP's arrangements are fit for purpose against the worst credible scenario (LOWC), that they are effective, scalable and maintain response readiness;
- To evaluate areas of its emergency and oil pollution response programme that CoP can improve upon (demonstration of continuous improvement); and
- Instil a positive learning culture amongst CoP staff, contractors, third parties and other critical response partners to practice their skills, knowledge and craft outside of 'real' emergency response scenarios.

Consideration across the CoP exercise program has also been driven by the programme objectives, timing/manner of exercises, evaluation/close out, and other methods as detailed in the *IPIECA Oil Spill Exercises, Good Practice Guide.*

Scope

To execute the arrangements detailed in the OPEP, CoP requires direct and indirect support from a number of internal and external parties. By necessity, this exercise programme covers those parties. This includes:

- CoP Australia personnel and contractors who form Operational, Incident and Crisis Management Teams,
- CoP global personnel (including the Crisis Management Support Team (CMST) and Global Management Assist Team (GIMAT)),
- Contractors who provide surge resources support to the above groups, and
- External third parties who have support arrangements for source control, oil spill response, operational and scientific monitoring, and waste management. (Contracts include – Australian Marine Oil Spill Centre (AMOSC), Labrador, RPS, The Response Group, etc as detailed in the OPEP).

Exercise programmes for other components are provided as follows:

- Arrangement for Source Control Emergency Response Plan (SCERP) testing and exercising are provided in the SCERP and included in Table 6-1 of the OPEP.
- Arrangements for the implementation, testing and exercising of the Operational and Scientific Monitoring Program are provided in the OSMP.

CoP will invite relevant State and Commonwealth control and jurisdictional authorities to participate in certain sections of the exercise programme, however, cannot compel these parties to participate.

CoP *may* consider holding a single exercise that concurrently meets testing and exercising needs across the Source Control, OSMP and OPEP implementation.

Timing

The exercise programme has already commenced with exercises undertaken to date to practice and test local CoP response arrangements and the integration of global human resources into a local response. This has been supplemented by capability building activities.

In the lead up to drilling in Q2-Q3 2025, the exercise programme outlines an escalating series of exercises to demonstrate the readiness and adequacy of the measures in the OPEP, proportionate to the nature and scale of the risk.

For the duration of the drilling camping, the exercise programme includes a rolling 12 month schedule to demonstrate ongoing adequacy and response readiness. This rolling schedule will remain in place until the rig completes all work for CoP and the hydrocarbon spill risk is removed, or the end of the EP (31 December 2028), whichever is earlier.

Types of exercises

Each activity within the exercise programme is a type of 'exercise' [1]. An exercise is defined as a *controlled, objective-driven activity used for testing, practicing or evaluating processes or capabilities*.

The types within this programme include:

Exercise type	Exercise description
Drill	A coordinated, supervised activity employed to test a single, specific operation or function.
Discussion exercise	An exercise built around discussion of a scenario – providing an opportunity to explore issues in some depth and give verbal responses to situations.
Functional 'desktop' exercise	An exercise that involves the testing and deployment of incident or crisis management teams, to enact plans or processes against a scenario.

[1] These definitions are adapted from the Australian Institute for Disaster Resilience, *Australian Disaster Resilience Handbook Collection, Handbook 3: Managing Exercises*

2. Mechanisms for Evaluation and Close Out of Recommendations

CoP's individual exercises within the exercise programme, will follow the process for development, execution and evaluation outlined within the *Australian Disaster Resilience Handbook Collection, Handbook 3: Managing Exercises and APPEA Guidance Document: Incident Management Team- Knowledge requirements for responding to marine oil spills*

For each exercise, an aim and objective (s) will be determined, including those outlined in section 4 of this plan. For each objective, performance indicators will also be determined that allow for the objective assessment of the achievement of that for each objective, by an evaluator (or evaluation team).

CoP will ensure subject matter expert evaluators are part of each exercise, with third party evaluators included for discussion, functional 'desktop' and field exercises.

Following the completion of the exercise, an exercise report is to be drafted based on participant feedback, observers feedback, and the evaluator's observations of the performance indicators. Feedback will be based on subject matter expert commentary.

An exercise programme feedback log that consolidates the findings from the exercise programme – in particular opportunities for improvement – will be kept by CoP with all findings considered for implementation. All findings are to include suggestions for improvement via the exercise evaluation process.

Findings with suggestions for improvement from the exercise programme are prioritised by CoP and tracked to completion in the action tracking management tool INTELEX, for Tier 2/3 and GIMAT exercises.

3. Critical Response Requirements within the OPEP for Exercising and Testing

CoP's OPEP has a number of spill response strategies that will be tactically executed by the CoP IMT and field teams, in the event of a LOWC. For a worst case scenario, these will include:

1. Source Control as per Table 6-1 of the OPEP
2. Surveillance, Modelling and Visualisation
3. Shoreline Response: Protection & Deflection
4. Shoreline Response: Shoreline clean-up
5. Oiled Wildlife Response
6. Waste Management

The CoP IMT also implements:

7. The CoP Operational and Scientific Monitoring Plan[2] - as per the OSMP.

To successfully do so, the IMT will need to:

8. Effectively communicate (as needed) with Tasmanian, Victorian and Commonwealth Control and Jurisdictional Agencies, seeking
    a. Coordinated command across response objectives and tactics, and

[2] OSMP strategy testing and exercising is outside of scope of this exercise programme.

    b. To identify logistical surge support requests from jurisdictions for tactical implementation within their geographic scope,
9. Effectively communicate (with), and activate contractors and other supporting parties,
10. Develop, execute and review an Incident Action Plan across several operational periods using the Incident Command System (ICS),
11. Identify human resourcing surge support needs, and deploy that surge support into management and field teams as determined by the incident objectives of the time, and
12. Ensure that supporting contracts and agreements with agencies are activated to deliver services or support as needed.

These are the key elements of response arrangements which will be tested and exercised to ensure response readiness. By undertaking and then considering the outcomes of all exercise programme individual exercises, CoP will have adequately ensured that its response arrangements are appropriate.

4. Schedule of exercises

CoP will undertake the below schedule of exercises as part of the exercise programme to test the OPEP arrangements:

Exercise type	Objective	Frequency / timing	Alignment with (as per section 3 above)
Drill (notifications)	To test all communications and notification processes in the OPEP to service providers & government agencies defined in the OPEP.	<3 months prior to spud. Then, every six months.	8 & 9
Drill (call off)	To test the ability of CoP to execute service contracts with OSROs and supporting agencies.	<3 months prior to spud. Then, annually.	2 – 6, 12
Drill (internal)	To test the ability of CoP to call out its IMT and CMT. To test the ability of CoP to call on surge (backfill resourcing) to the IMT/CMT.	<8 months prior to spud. <2 months prior to spud. Then, every 6 months.	10 & 11
Drill (external)	To test CoP/OSRO ability to activate aviation sub-plan. To test CoP/OSRO ability to activate shoreline sub-plan.	<2 months prior to spud. Then, annually.	2, 3, 4 & 12
Drill (internal/ external)	To test communications between the Rig and CoP BNE IMT.	<1 months prior to spud. Then, every four weeks.	2
Discussion exercise	Practice the ability of the CoP IMT to communicate with jurisdictional equivalents on objectives alignment and resources request processes.	<5 months prior to spud.	2, 3, 4, 5, 6 & 8
	Practice the first 24 hours activation of the OPEP with CoP IMT, critical contractors and supporting agencies.	<6 months prior to spud.	2, 3, 4, 5, 6, 8 & 9
	Practice the sustained human resourcing requirements into the CoP IMT from internal and external sources (LOWC scenario)	<6 months prior to spud.	11
Functional 'desktop' exercise	Test CoP ability to develop an IAP (against LOWC scenario) using ICS.	<5 months prior to spud.	10
	Test the integration of the CoP GIMAT under an ABU IMT led incident.	< 12 months before the campaign. Then, every 3 years.	10 & 11
	Against a LOWC scenario, test the IMT/CMT - - ability to implement the strategies in the OPEP, - ability to communicate with jurisdictional counterparts, - ability to develop and execute an IAP across multiple planning periods, - ability to forward plan human resources for multiple operational periods including with external contractors and GIMAT surge support.	<3 months prior to spud. Then, annually.	2, 3, 4, 5, 6, 8, 9, 10, 11, 12.

Part E: Field Response Assessment

ConocoPhillips
Australia

Appendix 1: IMT Capability Assessment
Part E: Shoreline Resource Assessment

Prepared by the Australian Marine Oil Spill Centre (AMOSC)

December 2024

Contents

Scope

This document describes the methodology behind using the Shoreline Resource Calculator (Resource Calculator) as a tool to estimate potential resources required to facilitate a shoreline clean up response strategy.

The Resource Calculator has a highly sophisticated resource calculation engine embedded, which has been modelled using the accepted best practice captured in the Exxon Mobil Oil Spill Response Field Manual (EMOSRFM).

The EMOSRFM provides industry best practice guidelines and information which was used as the basis for typical resources required for individual response strategies and recognised shoreline types.

Introduction

There are no stipulated or ideal number of personnel and resources required for a given shoreline cleanup, especially for very low likelihood, high consequence events with broad geographic impacts, like the COP WCCS's outlined in **Section 2 of the OPEP Rev 001.**

Any resource estimation method is an approximation, requiring a certain amount of judgement and hypothesis. However, using the Resource Calculator along with the spill resource personnel pool **(Appendix A)**, COP has the capability to deploy a significant workforce to the shoreline consistent with the expectations of key stakeholders, in support of a Jurisdictional led shoreline clean up. In the unlikely event that the resourcing recommended by this model and agreed by COP is insufficient, COP has a process to provide additional surge support as needed.

Methodology

Oil Spill Trajectory Modelling (OSTM) was produced based on two spill scenarios, seven locations, over two separate petroleum titles (ref: **OPEP Rev 001 - Section 2**). Based on the stochastic modelling data from the OSTM including the resultant shoreline impacts, the Resource Calculator was used to estimate potential resource requirements.

Stochastic Modelling is the preferred choice for the Resource Calculator as it provides a greater probability of where hydrocarbon could potentially impact the shoreline in both, summer and winter seasons. Given that each stochastic run consists of 100 runs in winter with varying conditions, and

100 runs in summer with varying conditions, impact zones with a probability of impact <%10 were eliminated. This resulted in a comprehensive list of sites with 10% or greater probability of being impacted at or above the 100g/m^2 (referred to as “actionable” hydrocarbon on a shoreline).

The Resource Calculator uses the shoreline type to determine the response strategies, and evaluates the recommended number of personnel and equipment to perform the strategy. Each shoreline type can require a combination of response strategies, so each strategy is assigned an average percentage of use. The below table shows the shoreline type, along with the strategies and percentages used in the calculations.

shoreline type	***cleanup method to be used***	***% of oiled shoreline type for cleanup method***
1. Manmade structures	flooding	10%
	HP, ambient-water flushing	60%
	hot water flushing	10%
	natural recovery	20%
2. Rocky Shores (sheltered)	natural recovery	100%
3. Rocky platform / cliff face (exposed)	natural recovery	100%
4. Sandy beach (mixed sand/shell)	manual removal - light oil	60%
	manual removal - heavy oil	0%
	flooding	10%
	mechanical removal	0%
	natural recovery	30%
5. Tidal flats (mud/sand) and vegetative salt/brackish marsh	LP, ambient-water flushing	30%
	natural recovery	70%
6. Shallow seagrass	natural recovery	100%
7. Reef	natural recovery	100%
8. Mangroves	LP, ambient-water flushing	20%
	natural recovery	80%

Table 1: Resource Calculator Response Strategy% per Shoreline type summary.

Table 1 shows the cleanup method breakdown, applied to each shoreline type. The % figure represents a weighted figure of, “how much of this strategy will be used” per shoreline type

Modifying the % of a strategy to be used for a particular shoreline type can significantly change the number of personnel and equipment required, as different methods are weighted to attribute diverse numbers of people and equipment. If we take the example of sandy beaches and the fate and characteristics of Thylacine Condensate, the strategy of *manual removal – light oil* is potentially more likely to be applied, hence it is allocated a higher % vs *manual removal – heavy oil*, which is unlikely. Given the hydrocarbon type, certain oil spill response strategies such as mechanical removal and manual removal – heavy oil are not applicable and therefore, removed from the calculations.

From the OSTM, each scenario and oil type, Summer and Winter accumulations were considered. All actionable Local Government Areas (LGA) affected with 100g/m^2 greater than or equal to 10 % were added to the list of cleanup zones. Based on the original data layers from the relevant departments (Tasmania Environment Protection Authority (TAS EPA) and Victoria Department of Transport & Planning (VIC DTP)), each sector was divided based on shoreline or substrate type. King Island was broken down into <1km sectors. The data for each affected area was inputted into the Resource Calculator to determine the estimated number of resources required.

From these impacted zones (LGAs), shoreline types were taken from the sectorisation data, and a weighted percentage was calculated by accumulating shoreline types from the affected sectors. Using shoreline substrate data in combination with the length of shoreline affected at 100gm/m^2 data from the stochastic modelling, the calculator output produced a recommended list of resources required per sector.

Taking the example of VICP79 Scenario 1, Location 4 – based on the OSTM and sectorisation data analysis, 318.9 m^3 of product could potentially impact 504.13 km of shoreline in the winter season which comprises of varied shoreline types. When a conservative 15% shoreline clean up per day is applied, the Resource Calculator estimates the levels of resources required directly from the EMOSRFM as best practice for each response strategy applied. Where a range has been indicated in the EMOSRFM, the calculator applies the higher value, to conservatively estimate the upper level of resources required. Based on past examples, estimates, and physical comparison of the numbers that would be both manageable and reasonably required to clean up known sections of beach within the boundaries of the modeling output, a conservative figure of 15% has been applied to the calculator to best represent a target resource estimate across the variety of scenarios. The combined total of the affected sectors in each scenario provides the total resources required for that scenario.

Given that a response will commence with a first strike plan and escalate from lower initial numbers to those required to manage the clean-up in the longer term, having 100% of resources from an early stage is an inaccurate representation of resources required.

The outputs from the Resource Calculator, while indicating the level of possible resources, are not an upper limit and the reduction factor can be adjusted. Scaling up a response quickly to affect a faster resolution for a smaller scale spill can be managed through multiplication of the original resource requirements. In addition, the practical challenges of activating all the resources must be considered, including, but not limited to:

- Capacity of the shoreline Control Agency to execute the operations
- Exceeding span of control through the divisions, branches, and clean up teams at one or more Forward Operating Bases and staging areas
- Overloading the carrying capacity of the regional community support resources (accommodation, ablutions, food, etc.)

- Overloading the response location environment (crowded carparks, traffic on beaches, etc.)

From the total "Total Oiled Shoreline" length affected, % of shoreline cleaned in a day and % of shoreline type for the affected area, the Resource Calculator produces a resource list, as per **Table 2** below.

Total Oiled Shoreline (km)	504.13
% of shoreline cleaned in 1 day.	15
Shoreline Type	**%**
Manmade Structures	1.97
Rocky Shorelines (Sheltered)	41.89
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	56.14
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%
Total Shoreline length with active cleanup strategies	**206**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	35	72	72	72	72
Worker	353	708	708	708	708
Specialised Operators	6	14	14	14	14
Total People	**395**	**794**	**794**	**794**	**794**
Vehicles/Vessels					
ATV	25	25	25	25	25
Truck/Vehicle	26	26	26	26	26
Vac Truck	1	1	1	1	1
Tank Truck	1	1	1	1	1
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	4	4	4	4	4
Oil Spill Equipment					
Pump	10	10	10	10	10
Skimmer w/pump	5	5	5	5	5
Inshore Boom (m)	885	885	885	885	885
Sorbent Boom/snares (m)	885	885	885	885	885
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	3	3	3	3	3
Steam Cleaner	1	1	1	1	1
Shoreline flushing pipe length (m)	132	132	132	132	132
Manual Equipment					
Shovels	509	1020	2040	3060	4080
Rakes	509	1020	2040	3060	4080
Picks	509	1020	2040	3060	4080
Plastic Bags	25472	50944	101888	152832	203776
Wheel Barrows	102	204	408	612	816

Table 2: Shoreline Calculator example for a 504.13km stretch of affected coastline consisting of 2% manmade structures, 42% rocky shorelines & 56% Sandy Beach (left hand side) along with the resultant suggested resources required to clean up 15% of the shoreline in a day (right hand side).

In addition to personnel, the Resource Calculator estimates other required resources based on several assumptions. Taken from the EMOSRFM for each of the recommended response strategies, the following have been applied relating to the **personnel** columns:

- Based on 14 day shifts of workers
- Based on hydrocarbon stranding daily/continuously
- Based on 1 primary crew and a replacement crew in rotation.
- Based on impacted shorelines (100gm/m^2 or above) and resources required per km.
- Based on average of shoreline strategies for each shoreline type (**Table 1**)

For the **Oil Spill Equipment** section, the following should be considered:

The response calculator estimates major resource requirements for a given scenario. It does not, however, go into granular detail of all equipment required to mount an effective shoreline response. Personnel decontamination, boom ancillaries, anchor kits, waste management, oiled wildlife response equipment & temporary waste storage systems are just some of the equipment that the calculator does not estimate. This level of granularity is covered in the **OPEP Appendix 2 Shoreline**

Plan in detail under sections 8.4 to 8.14 and should be used as a definitive guide to setting up an effective shoreline response operation.

For the **Manual Equipment** section:

- Shovels based on 1 per worker per week
- Rakes based on 1 per worker per week
- Pick based on 1 per worker per week
- Plastic bags based on 50 per worker per day (50*20kg each = 1000kg/day (which is best practice of waste per day per responder))
- Wheelbarrows based on 1 per team (5 persons) per week then replaced.

Shoreline cleanup constraints – additional factors

There are several additional factors to consider when using the outputs from the shoreline Resource Calculator. These include:

- **Key Shoreline Stakeholder Consideration – Control Agencies**

It is critical to consider that the responsibility of shoreline cleanup is devolved by law to a third party, which also happens to be an entity of the crown – in this case the VIC DTP and TAS EPA. Both control agencies are limited in their ability to quantify the numbers of resources that they may access and will not guarantee any shoreline clean up resources. Consequently, this presents a challenge for calculating the 'true' numbers of personnel required.

Through consultation, both control agencies have been clear that they will take responsibility for the shoreline clean up, including using resources provided for by COP, and under their own arrangements – state and national plan based.

Their focus is access to a flexible (surge model) capacity that can be used by them for shoreline response. In these discussions, and amongst the OPEP/EP ALARP justification COP have proposed a 15% shoreline clean up capacity per day as a planning target for the WCCS.

- **Accessibility to the shoreline**

The ability for shoreline cleanup crews to access all shorelines within the Environment that Maybe Affected disproportionate. The coastlines of Victoria and Tasmania are diverse and non-uniform, creating a wide range of conditions, from cliffs and coastal plains to small and large beaches, and untouched habitats in remote areas. Such variation in the coastal conditions together with the evolving influence of wind, tides, waves and weather systems brings limitations such as, but not limited to, inaccessibility to roads, heavy vegetation and other habitat hazards.

In some remote areas, having many locally based shoreline cleanup workers is not feasible due to the lack of supporting infrastructure. Establishing such infrastructure comes with significant secondary damage as a result of access paths cleared by heavy machinery, and the mobilization of hundreds of workers in remote camps. Alternatively, daily ingress/egress from established townships who could house the shoreline clean-up crews to these remote shores will also significantly impede the efficiency of the work completed.

- **Variation of shoreline impacts and prioritisation process**

The impact of a hydrocarbon spill on the shoreline environment will not be evenly distributed. By cleaning up and focusing on the most sensitive shorelines as a priority, the delay in treating secondary affected shorelines is not 'outweighed' by having a second set of shoreline cleanup crews commencing shoreline treatments. This is particularly the case for ongoing shoreline loadings from a continuous oil spill – the impact to a secondary shoreline of continuous oiling has already been done, so the overall cleanup effort is not enhanced through the employment of more shoreline cleanup resources.

The effort of the shoreline workforce will be prioritized as it comes online to those parts of the shore deemed to be the most critical for clean up to occur first, as outlined by the operational NEBA/SIMA and under the direction of the relevant Jurisdictional agency.

The 15% shoreline clean up target per day presents an amount greater than the total required for the potentially sensitive, time framed shorelines.

- **Ongoing preparedness and ability to scale**

CoP is committed to maintaining access to scalable capability and capacity requirements as per the spill response strategies and the respective resources identified in the OPEP and through the assurance methods outlined in the relevant performance standards. This includes:

- Access to AMOSC & Core Group members through membership
- Access to industry mutual aid resources via AMOSPlan
- Access to labor hire agencies for unskilled labor
- Just in time training for unskilled laborers, and
- Just in time training for pools of management staff for these laborers.

For each of the proposed spill response strategies outlined in the OPEP the following scalable field resourcing is accessible:

- *Surveillance, Modelling and Visualisation (SMV)* - COP led activation of the COP Aviation Plan and Operational and Scientific Monitoring Program (OSMP), utilising COP IMT personnel, AMOSC staff, Industry trained Aerial Observers and RPS.
- *Shoreline* – led by the relevant State Jurisdictional Authority, COP can activate the COP Shoreline Plan and provide supporting SCAT and trained Shoreline Clean-up responders. These include the AMOSC Core Group (Operations stream), followed by trained personnel through Industry Mutual Aid. Additional un-trained labour hire can be accessed and skilled appropriately through response inductions and just-in-time training. Note. This capability and capacity would be in addition to National Plan (NRT) and State based (SRT) resourcing accessed by the Jurisdictional Authority.
- *Oiled Wildlife Response (OWR)* – led by the relevant State Jurisdictional Authority and in accordance with State-specific wildlife response plans. COP can provide supporting OWR capability and capacity through the AMOSC SLS and Industry Mutual Aid (OWR trained personnel).

Note. The above field resourcing is in addition to the COP IMT capability and capacity requirements and supporting external resources, including ConocoPhillips Australia, ConocoPhillips GIMAT, ConocoPhillips CMST, AMOSC, AMOSC Core Group (Management stream), Labrador, RPS, The Response Group (TRG) and other relevant external agencies.

Supporting Agency/Organisation capacity is outlined further in Appendix A.

Appendix A: Additional resources and ability to scale

Agency	Operations Trained Personnel	Aerial Observers	OWR Trained Personnel	IMT Trained Personnel	Total
AMOSC Staff	16	6	3	6	16
AMOSC - Core Group	80 - 120[1]	2	2	20 - 30[2]	80 – 120
AMOSC – Industry (Mutual Aid)	180 - 200[3]	12[4]	80 - 100[5]	400+[6]	600+
Labor Hire Agencies	N/A	N/A	N/A	N/A	500+ (est)

[1] – Sourced from AMOSC Learning Management System (LMS) records. Personnel hold current (within three years), competency-based Oil Spill Response Operations (IMO Ieq) certifications, plus Core Group Knowledge & Skills development workshops (every two years).

[2] – Sourced from AMOSC Learning Management System (LMS) records. Personnel hold current (within three years), competency-based Oil Spill Response Management (IMO IIeq) and/or Command & Control (IMO IIIeq) certifications, plus Core Group Knowledge & Skills development workshops (every two years).

[3] – Sourced from AMOSC Learning Management System (LMS) records. Personnel hold current (within three years), competency-based Oil Spill Response Operations (IMO Ieq) certifications.

[4] – Sourced from AMOSC Learning Management System (LMS) records. Personnel hold current (within three years), competency-based Aerial Surveillance certifications.

[5]– Sourced from AMOSC Learning Management System (LMS) records. Personnel have completed training courses in Oiled Wildlife Response (Intro) and/or Oiled Wildlife Response (Management).

[6] – Sourced from AMOSC Learning Management System (LMS) records. Personnel hold current (within three years), competency-based Oil Spill Response Management (IMO IIeq) and/or Command & Control (IMO IIIeq). Approximate numbers include Management – 318, Command & Control – 110.

Part F: Field Resourcing Training

Part F: Field Response Training Description

Field Resource	Role	Training
ConocoPhillips (COP) AMOSC Core Group Responders	COP personnel trained and competency assessed by AMOSC as the AMOSC Core Group. Deployed by IMT for spill response operations.	AMOSC Core Group Workshop (refresher knowledge and skills workshops undertaken every two years) AMOSC –Course in Oil Spill Response Operations (IMO Ieq)
COP Aerial Observers	Undertake aerial surveillance of spill. Deployed by IMT in the aerial surveillance aircrafts.	AMOSC – Aerial Surveillance Course
AMOSC Core Group Oil Spill Responders	Industry personnel as the AMOSC Core Group, available to COP under the AMOSPlan For providing incident management (IMT) and operations (field response) assistance	AMOSC Core Group Workshop (refresher undertaken every two years). AMOSC – Course in Oil Spill Response Operations (IMO Ieq)- Pre-requisite and Course in Oil Spill Response Management (IMO IIeq) if dual stream
AMOSC Staff	Professionals, providing technical, incident management and operational advice and assistance available under COP-AMOSC contract.	As per AMOSC training and competency matrix
COP Shoreline Clean-up Assessment Technique (SCAT) personnel	Conduct SCAT activities	AMOSC – Course in Oil Spill Response Operations (IMO Ieq)
COP Shoreline clean-up Team Lead	Lead shoreline clean-up strike teams	AMOSC – Course in Oil Spill Response Operations (IMO Ieq) or PUAOIL302 – Advanced Equipment Operations for Oil Spill Response (or equivalent)
Shoreline clean-up personnel (Workforce Hire)	Manual clean-up activities under supervision	No previous training required; on the job training provided
Oiled Wildlife Responders (Workforce Hire)	Provide oiled wildlife support activities under supervision	No previous training required; on the job training provided

Appendix 2: External Support Oil Spill Response Plans

Aviation Plan

Australia Business Unit

Otway Exploration Drilling Program Aviation Plan

ABU2-000-EN-V01-D-00007

Revision Detail

Rev Number	Date	Author	Approver
000	24/10/2023	[redacted]	[redacted]

Contents

List of Appendices

List of Tables

List of Figures

Abbreviations and Definitions	
AAT	Australian Amalgamated Terminals
ABV	Above
ACFT	Aircraft
AD	Aerodrome
ADC	Air Data Computer
ADSL	Asymmetric digital subscriber line
AGS	Airbase Group Supervisor
AH	After Hours
AMOSC	Australian Marine Oil Spill Centre
AMSA	Australian Maritime Safety Authority
AOM	Airbase Operations Manager
AOBD	Aviation Operations Branch Director
ARO	Aerodrome Reporting Officer
ATO	Air Tasking Orders
BGAN	Broadband Global Area Network
CASA	Civil Aviation Safety Authority
CTAF	Common Traffic Advisory Frequency
COP	ConocoPhillips
ERSA	Enroute Supplement Australia
FM	From
FOB	Forward Operating Base
GSM	Global System for Mobile Communication
HEL	Helicopter
HF	High Frequency
ICAO	International Civil Aviation Organisation
IC	Incident Commander
ICC	Incident Command Centre
ICS	Incident Command System
IMT	Incident Management Team
INT	Intersection
KI	King Island
LGA	Local Government Area
LOWC	Loss of Well Control
MDO	Marine Diesel Oil
MTOW	Maximum Take Off Weight
NBN	National Broadband Network
Nm	Nautical Mile
NOTAM	Notice to Air Missions
OEDP	Otway Exploration Drilling Project
OPEP	Oil Pollution Emergency Plan
OPR	Operator/Operations
OPS	Operations
PAL	Pilot Activated Lighting
PJE	Parachute Jump Exercise
PRKG	Parking
RWY	Runway

Abbreviations and Definitions	
SAR	Search and Rescue
SARTIME	Time Search Action Required
SMEACS	Situation, Mission, Execution, Administration, Command and Control, Safety – Briefing tool
SMV	Surveillance, Monitoring and Visualisation
TAS	Tasmania
UHF	Ultra-High Frequency
UNCR	Unregistered (Uncertified) Aerodrome
UTC	Universal Time Coordinated
VAR	Magnetic Variation
VHF	Very High Frequency
VIC	Victoria
YBRS	Barwon Heads Airport ICAO Code
YKII	King Island Airport ICAO Code
YSMI	Smithton Airport ICAO Code
YWBL	Warrnambool Airport ICAO Code
YYRM	Yarram Airport ICAO Code

1. Purpose

The purpose of this Aviation Plan is to describe the arrangements that ConocoPhillips Australia, in association with AMOSC, has in place to prepare for and respond to aerial surveillance of a hydrocarbon release during the Otway Exploration Drilling Project.

This plan will provide the ConocoPhillips Incident Management Team (IMT) with the information and procedures required to operate and manage all aspects of an aerial surveillance operation. It has primarily been designed to assist in the setup and operation of a remote forward operating base (FOB) utilising AMOSC as the manager of these operations.

2. How to Use this Plan

This plan supports Section 4.2 (Surveillance, Modelling and Visualisation) of the ConocoPhillips Australia OPEP.

Each section of this Plan and its supporting appendices has been drafted to expedite the implementation of aerial surveillance operations.

By following the flowchart in Section 3 – Figure 3-2: Aerial Surveillance Response Flowchart, clear tasking and responsibilities have been outlined to ensure that when aerial surveillance is required, it can be implemented with minimal delays.

Once activated, AMOSC will follow the Airfield Setup Procedures flowchart in Section 4 – Figure 4-1: Airfield Setup Procedures Flowchart to nominate an airfield and Forward Operating Base (FOB), acquire suitable surveillance aircraft and appropriately trained personnel, complete all appropriate documentation, and begin surveillance operations.

3. Aerial Surveillance

Four primary airfields have been selected to cater for the potentially affected shorelines. Typically, a surveillance aircraft will need to be capable of flying up to 100nm from the FOB to conduct surveillance operations. This has been highlighted in Figure 3-1 below.

Primary airfields include:

1) Barwon Heads Airport – YBRS (Section 7.1)
2) King Island Airport – YKII (Section 7.2)
3) Yarram Airport – YYRM (Section 7.3)
4) Warrnambool – YWBL (Section 7.4)

Initially, operations will be run from the Barwon Heads Airport due to its proximity to both drilling permit areas and the AMOSC stockpile of equipment. If the surveillance operation is required to move to a more suitable location (closer to the drifting spill for example), AMOSC will relocate the FOB to a more suitable airfield. If the operation plans to move to the King Island Airport, supporting logistics needs to be setup five days prior to commencing operations, as the airport does not hold any fuel stores.

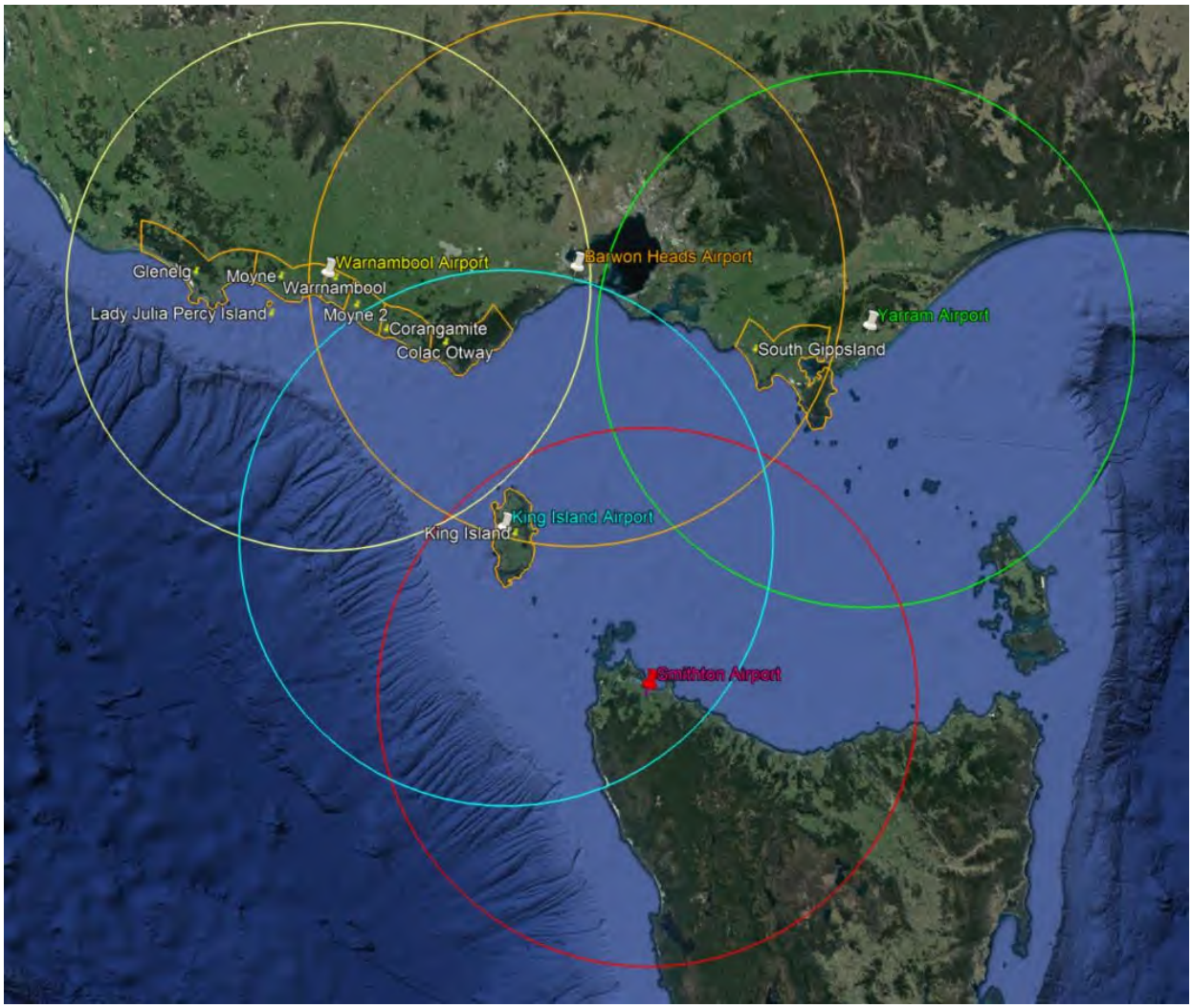


Figure 3-1: Airfield locations with 100nm boundaries highlighted, covering all potential shoreline breaches.

The Aerial Surveillance response strategy is outlined in Figure 3-2 below.

Figure 3-2: Aerial Surveillance Response Flowchart

4. Airfield Setup Procedure

Once the surveillance contract has been activated by ConocoPhillips Australia, AMOSC will activate and conduct the aerial surveillance operations using the procedure outlined in Figure 4-1 below.

This flowchart ensures that all people, equipment, and documentation are in place.

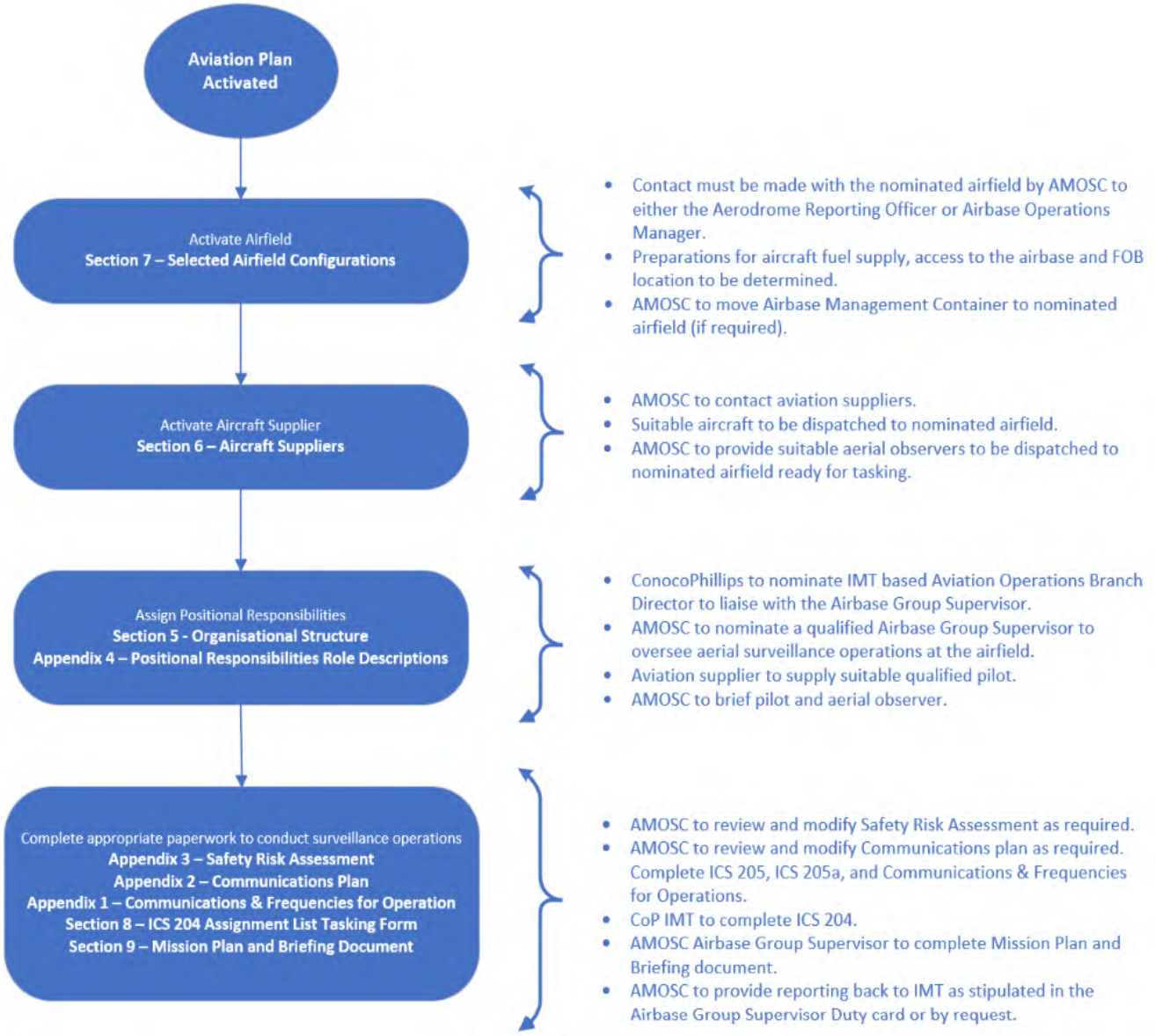


Figure 4-1: Airfield Setup Procedure Flowchart

5. Organisational Structure

The positions required to undertake an effective aerial surveillance operation have been highlighted in Figure 5-1 below.

Detailed descriptions and responsibilities for these positions can be found in Appendix 4 – Positional Responsibilities Role Descriptions.

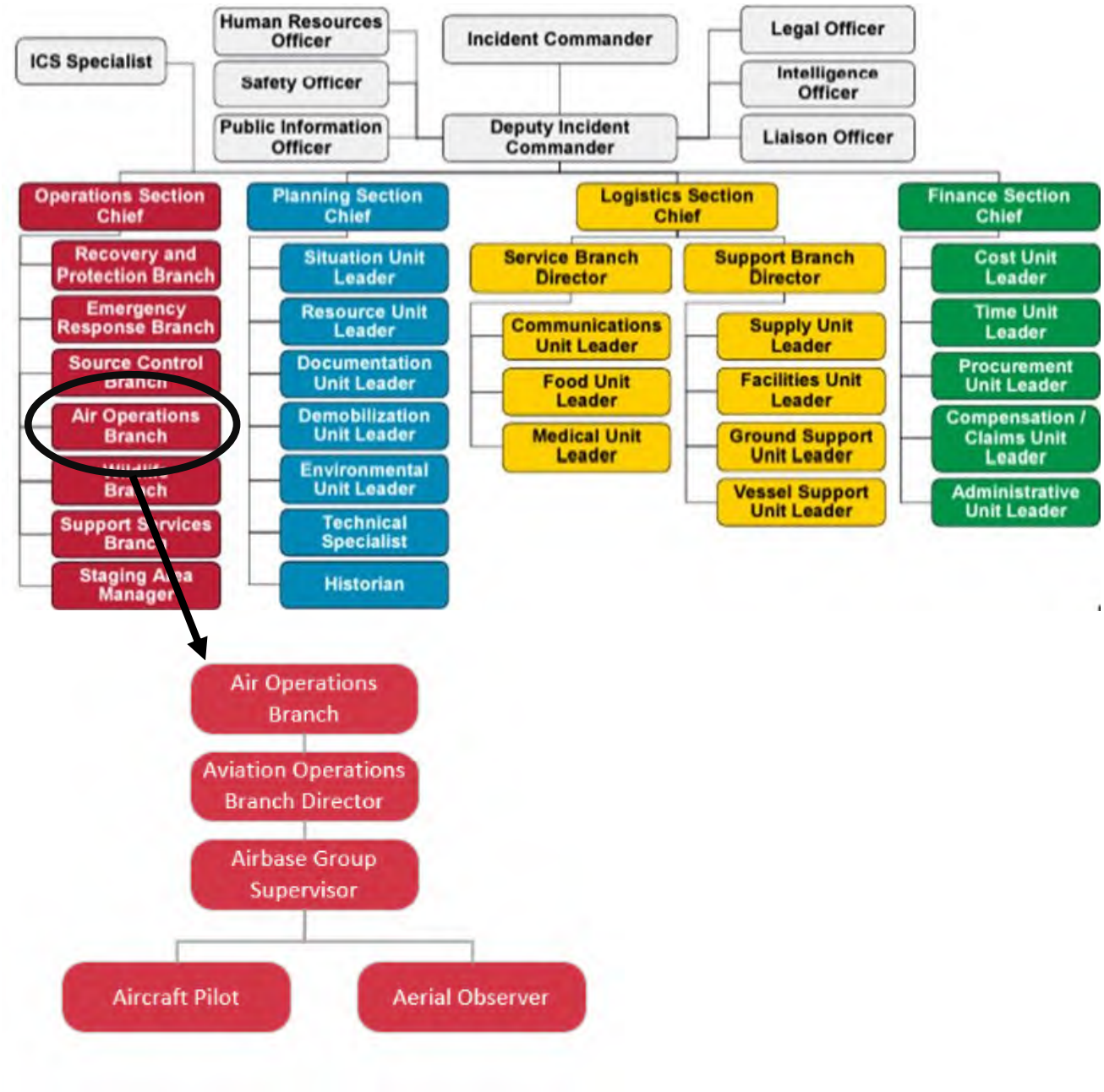


Figure 5-1: CoP organisational structure showing expanded "Air Operations Branch" Roles.

6. Aircraft Suppliers

Two aircraft suppliers have been identified as suitable for ConocoPhillips Australia's aerial surveillance operations (see Table 6-1).

When choosing an aerial observation platform, the preference is to use twin engine aircraft, however, with a risk assessment and buoyancy bags fitted to the ground runners while flying over water, single engine aircraft may also be suitable. This decision will be made by the operational staff at the time of the incident, taking into account weather conditions and distance from shoreline.

Table 6-1: Rotary wing surveillance aircraft suppliers

Supplier	Aircraft	Engine	Quantity	Passengers
Microflite Aviation 27/31 Northern Ave, Moorabbin Airport, VIC 3194 Phone (03) 8587 9700 enquiry@microflite.com.au https://microflite.com.au/	Airbus EC120 B	Single	4	4
	Airbus AS350 B2	Single	2	5
	Airbus AS350 B3 / B3e	Single	6	5
	Airbus EC130 B4 / T2	Single	4	6
	Airbus AS355 NP	Twin	1	5
	Airbus EC135 P2+	Twin	1	4
	Airbus H135 P3H (Helionix)	Twin	1	5
	Bell 212	Twin	1	10
Professional Helicopter Services 44-46 Bundora Parade, Moorabbin Airport, VIC, 3194 Phone: 1300 359 747 headoffice@phs.com.au https://phs.com.au	Schweizer 300 CBI	Single	1	1
	Robinson R22	Single	1	1
	Robinson R44	Single	1	3
	Bell 206B3 Jet Ranger	Single	1	3
	Bell 206L1-C30P Long Ranger	Single	1	6
	AS355 F2 Twin-Squirrel	Twin	1	6
	Eurocopter EC130 B4	Single	1	6
	Eurocopter AS350 Squirrel	Single	1	5

7. Selected Airbase Configurations

7.1. Barwon Heads Airport – YBRS

Barwon Heads Airport is a small airfield specifically for light aircraft on the Bellarine Peninsula near the township of Barwon Heads, Victoria, Australia. It is primarily used for scenic flights, private aircraft and flight training.

The airport has a flight training school with two classrooms and fuel facilities. A shower and toilets are located in the terminal building, there is a kitchen, snack and drink machines and a lounge area.

The airport has two runways, the main one is an unrated sealed north/south runway, and there is a smaller east/west grass runway, primarily for ultralight aircraft, and light aircraft in stronger wind conditions.

This airfield can be used for all initial surveillance flights given its close proximity to both drilling permit areas.

7.1.1. YBRS Contact Details

Barwon Heads Airport: 1405 Barwon Heads Road, Connewarre VIC, 3227, Australia and/or PO Box 1123, Barwon Heads VIC, 3227, Australia.

Phone Contacts:

- Jeff Brooks 0418 643 401
- Don Adamson 0418 138 840
- Anton Westerink 0410 552 373

7.1.2. YBRS Local Information

PJE and HEL OPS.

Highway to the South of RWY 18/36, 50M displaced threshold.

Windsock located RWY INT.

Barwon Heads Airport is not a security-controlled airport.

Landing and overnight fees apply.

Prior permission is required before using the airport.

Surface of runway 09/27 is not all weather and should be checked by the pilot in command before use to assess serviceability for your aircraft, it is important you remain on taxiways at all times and refrain from turning on the sealed runway, a turning area is provided at north end to allow turn and back track.

Avgas is available but prior arrangements may be required. A $20 call out fee is payable AH. All avgas is to be paid at time of refuelling. For avgas they have a number of commercial operators with keys or can arrange with one of the contacts a time for access. Although YBRS is not a self-service Avgas dispenser it is treated as one. All pilots must be aware that as a consequence no after refuelling sample is taken at YBRS and as such CASA Regulations {Section 20.2 Issue 5 part 5.1 (ii)} requires an after fuelling sample to be taken from each aircraft tank before flight.

All pilots of aircraft wanting to land or take-off at YBRS must agree to YBRS terms of conditions before operating on the airfield.

YBRS has a number of commercial operators operating from the airport, these include:

- Flight training
- Warbird adventure flights
- Helicopter flights, and
- Skydiving.

After hours toilet is available with the pin code/door lock 1357 (Melbourne Centre Area Frequency).

All aircraft which are not on the CASA Aircraft database must register their aircraft and provide a billing address with us before landing at YBRS.

All landing & overnight fees and any other chargers are to be deposited into the cash box in the side of the office wall or directly into our bank account.

It is the responsibility of all aircraft owners and pilots to secure their aircraft while on the airfield

YBRS accepts no responsibility for damage sustained to any aircraft left on the airport arising from any cause whatsoever, including negligence on the part of YBRS.

7.1.3. YBRS Airport Setup

Barwon Heads- YBRS

Activation Detail:

Ph: 0418 643 401
Ph: 0418 138 840
Ph: 0410 552 373

BARWON HEADS/GEELONG **ELEV 50**

FULL NOTAM SERVICE NOT AVBL

VIC UTC +10 YBRS
381529S 1442539E VAR 12 DEG E UNCR
AD OPR Geelong Surfcoast Airpark, 1411-1419 Barwon Heads Road, Connewarre, VIC, 3227. PH 0418 643 401. Website: www.barwonheadsairport.com.au.

REMARKS

1. Prior permission to land required, refer website.
2. Private AD, landing fees must be paid by all ACFT including RAA. Refer website.

HANDLING SERVICES AND FACILITIES

AVGAS AVBL by arrangement, refer website.

Airport Information	
Approved loading area	Yes
Access to loading area	Yes
Water supply	Yes
Jet A1 fuel	Yes (see ERSA details above)
Access to office facilities	Yes
3G & 4G Reception	Yes
Wifi Available?	Yes
Access to welfare buildings	Yes

7.1.4. YBRS Runway Information

- Elevation 50ft.
- CTAF 119.00.
- Area Frequency is Melbourne Centre 120.00.
- On the northern side of the airport just outside the circuit area is Class E Airspace. Avalon Approach 133.55.
- Surface of runway 09/27 is not all weather and should be checked by the pilot in command before use to assess serviceability for your aircraft.
- Runway 36 slopes up to North.
- Runway 18 slopes down to the South.
- Runway 09 slopes down to the East.
- Runway 27 slopes up to the West.
- Runway 36 has a displaced threshold due to Barwon Heads Road (Do not fly low over the road).
- Runway 09 has a displaced threshold due to Stacey's Road.
- Runways 36/18 are sealed but unrated, edges can be soft, do not attempt to exit other than by the taxiways. A turning area is provided at the north end to turn for backtracking.
- All circuits are left hand (unless advised).
- In zero wind they prefer aircraft take off to the south using 18 and landing using 36 (assuming no other conflicting traffic). This uses the slope for best advantage.
- Caution, helicopter landing areas are normally located grass right of runway 36 (they are well outside the gable markers and not marked by the H as depicted by the photo).
- Beware of birds around the airport and in the circuit area (due to the wetlands and Lake Connewarre).
- Caution parachute operations, they operate all year round & normally land in the parachute landing area as depicted in the photo with the red box.
- In wet weather stay on runways and taxi ways at all times.
- Visitor and overnight parking are available on the concrete pads south of the fuel bowser. Overflow parking is available to the West of the windsock and on the North side of the East and West runaways as depicted in the photo with the blue box.
- PAL lighting on runway 18/36 can be activated by 5 clicks on the CTAF 119.00 within 10 seconds.

7.2. King Island Airport - YKII

King Island Airport is a small regional airport located near the town of Currie on King Island off the north-west coast of Tasmania, Australia. The airport is owned and operated by the King Island Council.

Facilities include the King Island Airport Cafe, public toilets, visitor information brochures, free parking and disability access. There are a number of areas available to setup a FOB including parts of the airport facility and a house which may be available for use through the King Island Council.

Refuelling facilities at the airport do not exist, with the airport only holding 5 drums of Jet A1 for emergencies at any one time. Logistics will need to be setup to barge in fuel trucks to assist with the refuelling of aircraft. Currently TasPorts is the primary supplier of bulk fuel products to the Island, however an alternative would be to utilise the vessel “John Duigan” and load a fuel truck from AAT Appleton Dock for transport to King Island. Tas Cargo Services handle all transport arrangements.

Microflite Helicopter services can supply the following:

- 2000 litre fuel trailer
- 5700 litre fuel trailer
- 18,000 litre fuel truck

Fuel vehicles only available outside of the fire season. Alternative sources of fuel can be acquired by Microflite if the fuel vehicles are not available. The fuel vehicle needs to be no heavier than 28 tonnes as the Melbourne loading side is via crane only. The King Island side is roll off, so weight is not a factor unloading.

The now defunct runway 06/24 has been identified as the primary staging location of aircraft and refuelling, as it is only used for overflow aircraft parking and is far enough away from regular airport activities so as not to interfere with regular daily operations.

7.2.1. YKII Contact Details

- Address: King Island Airport, 102 Morrison Ave, Loorana, TAS 7256
- Phone: Airport Reporting Officer (ARO) (03) 6462 1499

- Address: King Island Council, PO BOX 147 Currie, King Island, Tasmania 7256
- Phone: (03) 6462 9000

- Address: TasPorts, 90-110 Willis Street, Launceston, PO Box 1060, Launceston, Tasmania 7250
- Phone: 1300 366 742

- Address: Tas Cargo Services, 146 Wilson St Burnie
- Phone: 1300 038 228

- Address: AAT Appleton Dock, 59 Appleton Dock Road, West Melbourne, Victoria 3003

7.2.2. YKII Local Information

Bird hazard exists. Periods of increased activity will be advised by NOTAM.

King Island Airport is a security-controlled airport (ASIC required).

7.2.3. YKII Airport Setup

King Island - YWBL	Activation Detail:
	Aerodrome Reporting Officer: Ph (03) 6462 1499

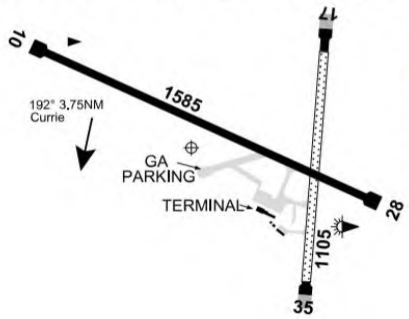
KING ISLAND **ELEV 132**

AVFAX CODE 7013

TAS UTC +10 YKII

395239S 1435242E VAR 12 DEG E CERT

AD OPR King Island Council, PO Box 147, Currie, King Island, TAS, 7256. Email: airport@kingisland.tas.gov.au. ARO 03 6462 1499. Council PH 03 6462 9000: Fax 03 6462 1313. Website: www.kingisland.tas.gov.au.



REMARKS

1. AD Charges: all ACFT.
2. This AD is a Security Controlled Airport.

AERODROME OBSTACLES

1. Windfarm 4.9NM SSE AD, 571FT AMSL.
2. Two towers in close proximity 2.95NM S AD. 312FT AMSL.

Airport Information:	
Approved loading area	TBD
Access to loading area	TBD
Water supply	TBD
Jet A1 fuel	No
Access to office facilities	Yes
3G & 4G Reception	Yes
Wifi Available?	No
Access to welfare buildings	TBD

7.2.4. YKII Runway information

- Runway 10/28 - 1,585m × 30m – Surface paved, lighted
- Runway 17/35 - 1,105m × 30m – Surface other (COM), lighted
- Runway 06/24 - 800m × 30m – Surface gravel, lighted, no longer active.

7.3. Yarram Airport – YYRM

The Yarram airport (also known as the Yarram Aerodrome) is located 3nm East of Yarram, Victoria, Australia and is a small regional airport. The Yarram aerodrome is now operated by the Wellington Shire Council and boasts an all-weather gravel runway, runway lighting, GPS approaches and a number of hangars and a terminal building.

7.3.1. YYRM Contact Details

- President: Brian Lucas - 0428 527 237
- Aerodrome Reporting Officer (ARO): Jim Christison - 0429 825 266
- Coordinator Aerodromes: Theo Christopher - 1300 366 244
- Secretary/Treasurer: Trevor Bruns - 0438 384 744
- Chief Flying Instructor: Allan Jarvis - 0439 613 868

7.3.2. YYRM Local Information

Ultralight ACFT movements at AD.

Turbulence and windshear hazard exist:

- RWY 09 – when NE wind ABV 10KT;
- RWY 27 – when NW wind ABV 10KT

Right hand circuits required for night OPS RWY 09.

ACFT at opposite ends of RWY05/23 may not be visible to each other.

7.3.3. YYRM Airport Setup

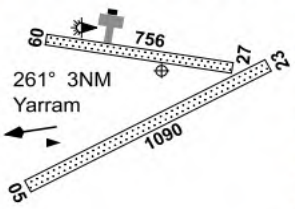
Yarram- YYRM Cat 2

Activation Detail:

Aerodrome Reporting Officer:
Ph 0429 825 266

YARRAM **ELEV 60**

AVFAX CODE 3046



VIC UTC +10 YYRM
383403S 1464516E VAR 13 DEG E REG
AD OPR Wellington Shire Council, PO Box 506, Sale, VIC, 3850. PH 1300 366 244. ARO 0429 825 266: 03 5182 5266. Fax 03 5142 3501.

REMARKS

AD Charges: RA Aus registered aircraft exempt. Current fees and conditions of use can be obtained FM AD OPR or www.wellington.vic.gov.au/yarramaerodrome

HANDLING SERVICES AND FACILITIES

AVGAS AVBL 24HR. Payment via IOR QuickPay app only. Contact IOR Aviation, phone 1300 457 467.

Airport information:	
Approved loading area	TBD
Access to loading area	TBD
Water supply	TBD
Jet A1 fuel	Yes (See ERSA details above)
Access to office facilities	Yes
3G & 4G Reception	TBD
Wifi Available?	TBD
Access to welfare buildings	TBD

7.4. Warrnambool Airport – YWBL

The Warrnambool Airport is located 6 nautical miles northwest of Warrnambool, Victoria in Australia.

Warrnambool Regional Airport is owned and operated by the Warrnambool City Council and is registered under Civil Aviation Safety Regulation (CASR) subpart 13.6.C Registered Airports.

The airport has 16 hangars on site accommodating both business and recreational aircraft. The airport is home to Ambulance Victoria, Helicopter Emergency Medical Services (HEMS 4). The airport averages about 40 aircraft movements daily with General Aviation Maintenance (Courier Service) and Ambulance Victoria fixed wing aircraft daily users.

Warrnambool Regional Airport is categorised as a "Security Controlled Airport" under the Aviation Transport Security Act 2004 and Regulations 2005 and operates on an Airport Security Identification Card (ASIC) switch on, switch off program. Only persons with a lawful reason are to access the "Airside Area" of the Warrnambool Regional Airport and must display a valid "Airport Security Identification Card" ASIC, at all times.

7.4.1. YWBL Contact Details

Warrnambool City Council

- Phone: (03) 5559 4800
- Fax: (03) 5559 4900
- Email: contact@warrnambool.vic.gov.au

Airport Reporting Officers, ARO

- Phone: (03) 5559 4970
- Mobile: 0417 338 162

Pilot Training and Aircraft Charter, Avalon Air Services, Victorian base, Ford Concourse, Warrnambool Airport, VIC 3275

- Phone: 0407 921 023
- Email: warrnambool@avalonaorservices.com.au

Refuelling Agents, AIR BP

- Phone: 03 4504 2159
- Email: info@warrnamboolaviation.com.au

7.4.2. YWBL Local Information

Limited PRKG AVBL for ACFT ABV 5,700KG MTOW

Due to grades on RWY 13/31 and RWY 04/22 the opposite ends of the RWY are not visible when taking off.

Bird hazard exists.

Seasonal aerial spraying OPS.

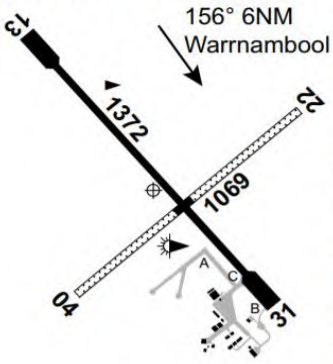
7.4.3. Airport Setup

Warrnambool - YWBL Cat 1

Activation Detail:

Aerodrome Reporting Officer:
Ph 0417 338 162

WARRNAMBOOL **ELEV 242**
AVFAX CODE 3012



VIC UTC +10 YWBL
381743S 1422648E VAR 11 DEG E REG
AD OPR Warrnambool City Council, PO Box 198, Warrnambool, VIC, 3280. Email: contact@warrnambool.vic.gov.au. ARO 0417 338 162: 0437 693 811. Council PH 03 5559 4800: H24 0401 988 659.

REMARKS
This AD is a Security Controlled Airport.
AD NOT AVBL to ACFT ABV 5,700KG without prior permission.

HANDLING SERVICES AND FACILITIES
AIR BP - Warrnambool Aviation: H24 AVGAS and JET A1 Cardswipe bowsers - Air BP card only. Cash by prior arrangement only, surcharges and call out fees apply. Phone 03 4504 2159, email: info@warrnamboolaviation.com.au.

Airport information:	
Approved loading area	TBD
Access to loading area	TBD
Water supply	TBD
Jet A1 fuel	Yes (See ERSA details above)
Access to office facilities	Yes
3G & 4G Reception	TBD
Wifi Available?	TBD
Access to welfare buildings	TBD

8. ICS 204 – Assignment List Tasking Form

Assignment List, ICS Form 204

1. BRANCH Air Operations Branch	2. DIVISION/GROUP	**ASSIGNMENT LIST**
3. INCIDENT NAME Aerial Surveillance and Monitoring Services	4. OPERATIONAL PERIOD DATE _____ TIME _____	

5. OPERATIONAL PERSONNEL

OPERATIONS CHIEF	_____	DIVISION/GROUP SUPERVISOR	_____
BRANCH DIRECTOR	_____	AIR TACTICAL GROUP SUPERVISOR	_____

6. RESOURCES ASSIGNED TO THIS PERIOD

STRIKE TEAM/TASK FORCE/ RESOURCE DESIGNATOR	EMT	LEADER	NUMBER PERSONS	TRANS. NEEDED	PICKUP PT./TIME	DROP OFF PT./TIME

7. CONTROL OPERATIONS

Undertake daily over target area using rotary aircraft in daylight hours only.	Aerial observer to contact the Aviation Operations Branch Director at approximately 1500hrs the day prior of departure to confirm details of flight. At arrival at airport, the aerial observer will contact the aircraft supplier or Airbase Branch Director to arranged for transportation through the airport if required. This can either be done direct or through the gate house. Pre-flight briefing to include mission for the day, weather forecast, helicopter safety procedures, radio communications and any safety related issues or concerns. Prior to immediate departure, the Aerial Observer will contact the Aviation Operations Branch Director and advise that they are departing the airport. Information to be exchanged: 1. Departure time 2. Expected arrival time over target area 3. Expected return time back to airport.	Daily
Whilst in flight over target area	• Observe, monitor, and record any observations with photos and videos. • Observe any commercial activity within the target area, record any observations of wildlife or anything that may impact safety to any	Daily

	response personnel or the community.	
Upon return to airfield	Inform the Aviation Operations Branch Director of safe arrival. Provide aerial observation report to Aviation Operations Branch Director including relevant observations, photos, map and flight track.	Upon return to nominated airfield and report by 1300 daily via email
Use of UAVs (Drones) within target area (if applicable).	Any early morning UAV flights to be finished by 0730 with a ceiling height of 400ft.	Daily

8. SPECIAL INSTRUCTIONS

9. DIVISION/GROUP COMMUNICATIONS SUMMARY

FUNCTION		FREQ.	SYSTEM	CHAN.	FUNCTION		FREQ.	SYSTEM	CHAN.
COMMAND	LOCAL				SUPPORT	LOCAL			
	REPEAT					REPEAT			
DIV./GROUP TACTICAL					GROUND TO AIR				

PREPARED BY (RESOURCE UNIT LEADER)	APPROVED BY (PLANNING SECT. CH.)	DATE	TIME

9. Mission Plan and Brief

The below mission plan and briefing template is used by the Airbase Manager on a daily basis as a way of providing all personnel with information relating to the upcoming operational period. It is important to have a templated briefing tool available to ensure that consistent information is given to all personnel involved, and daily activities are conducted safely.

<table>
<tr><td colspan="3">AIRBASE: <AIRFIELD NAME></td></tr>
<tr><td>INCIDENT TYPE:
INCIDENT NAME:
INCIDENT LOCATION:
BEARING/DISTANCE FROM AIRBASE TO INCIDENT LOCATION:</td><td>OPERATIONAL PERIOD
DAY:
DATE:</td><td>TIME
FROM:

TO:</td></tr>
<tr><td colspan="3">WEATHER</td></tr>
<tr><td>Current</td><td colspan="2">• Sea state
• Minimum and maximum temperatures. ^{0}C
• Wind speed and direction, surface and 2000ft
• Relative humidity
• Current area QNH
• Other information</td></tr>
<tr><td>Forecast Changes</td><td colspan="2">• Time of Change
• Sea state
• Minimum and maximum temperatures.
• Wind speed and direction, surface and 2000ft
• Relative humidity
• Current area QNH
• Other information</td></tr>
</table>

SMEACS	
SITUATION *Deliver at the pace of the slowest notes taker.* *What is happening now,* *Who is there now,* *What are they doing,* *Other agencies?*	***"Please take notes and save all questions until I finish the briefing"***
MISSION *A concise single purpose statement of the overall incident objective*	**To:** *Support the ConocoPhillips by way of aerial surveillance and monitoring services.*
EXECUTION .	**Groupings and Tasks** **Air Observation Group** *Undertake mapping of any observations and report on conditions.* *Other tasks as directed*

<table>
<tr><th colspan="6">SMEACS</th></tr>
<tr><td>EXECUTION</td><td colspan="5">Air Ops Ground Crew Group
Manage refuelling for aircraft when appropriate.</td></tr>
<tr><td rowspan="5">TIMINGS</td><td colspan="3">ACTION</td><td colspan="2">TIME</td></tr>
<tr><td colspan="3">Flying to target area</td><td colspan="2">XX mins</td></tr>
<tr><td colspan="3">Observation time on site</td><td colspan="2">XX mins</td></tr>
<tr><td colspan="3">Flying from target area back to base</td><td colspan="2">XX mins</td></tr>
<tr><td colspan="3">Total time per sortie</td><td colspan="2">XX mins</td></tr>
<tr><td rowspan="13">ADMIN & LOG</td><td colspan="5">Resources</td></tr>
<tr><td colspan="5">Aircraft</td></tr>
<tr><td>Role</td><td>Rego</td><td>Type</td><td>Pilot</td><td>Contact (Mob)</td></tr>
<tr><td>Aerial Observer</td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="5">Key Personnel</td></tr>
<tr><td colspan="2">Role</td><td colspan="2">Name</td><td>Contact (Mob)</td></tr>
<tr><td colspan="2">Aviation Coordinator</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2">Airbase Manager</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2">Air Observer</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2">Aircraft Loader</td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td colspan="2"></td><td></td></tr>
<tr><td colspan="2"></td><td colspan="2"></td><td></td></tr>
<tr><td rowspan="4">COMMAND & COMMUNICATION</td><td colspan="2">From</td><td colspan="2">To</td><td>Method</td></tr>
<tr><td colspan="2">AOB</td><td colspan="2">Airbase</td><td>Dedicated C-TAF:
Over 100 NM Sat phone:</td></tr>
<tr><td colspan="2">Airbase</td><td colspan="2">Local air traffic</td><td>Aerodrome C-TAF:</td></tr>
<tr><td colspan="2">Airbase</td><td colspan="2">Airfield Operations</td><td>Selected UHF CB Ch:</td></tr>
</table>

SMEACS	
SAFETY	*The airbase manager (Airbase Group Supervisor) will confirm the serviceability and sign off on the aircraft sea survival equipment, confirm all personnel have appropriate training currency, ensure a Hazard Risk Assessment has been completed and all personnel aware of outcomes and address any other safety issues.*

10. Secondary Airbase Considerations

10.1. Smithton Airport – YSMI

Smithton Airport is a small Australian regional Airport. Located on Tasmania's North-West tip. Smithton is just a 30-minute flight from King Island and a 1-hour flight from Moorabbin in Victoria.

The airport is operated by the Tasmanian Department of Infrastructure, Energy and Resources.

The airport has a number of tenants including:

- J.M.M. Pty Ltd trading as King Aviation.
- Tasmanian Seafoods Pty Ltd.
- Lloyd Kay trading as Bell Ultralight Aviation.
- Paul Murphy.

10.1.1. YSMI Contact Details

- Address: 347 Montagu Rd, Smithton, Tasmania
- Phone: 0412 203 439
- Email: info@smithtonairport.com.au

10.1.2. YSMI Local Information

Bird hazards exist.

10.1.3. Airport Setup

Smithton – YSMI

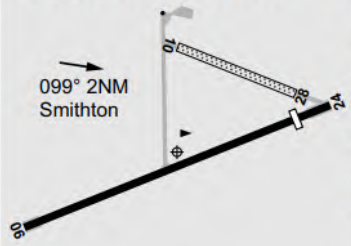
Activation Detail:

Aerodrome Reporting Officer:

Ph 0412 203 439

SMITHTON **ELEV 31**

AVFAX CODE 7008 **FULL NOTAM SERVICE NOT AVBL**



TAS		UTC +10	YSMI
405006S	1450501E	VAR 13 DEG E	UNCR

AD OPR General Manager, Roads & Public Transport, DIER, GPO Box 936, Hobart, TAS, 7001. PH Smithton 03 6452 1153: Hobart 6233 3613. Fax Smithton 03 6452 1153: Hobart 6233 2785.

REMARKS

AD Charges: All ACFT refer to AD OPR for details.

Appendix 1. Communication and Frequencies for Operations

Below is a template for a summary of all communication & frequencies which should be used by the Airbase Manager and the IMT to ensure efficient communications can be made with all personnel involved in the surveillance operation. This communications list should be posted in clear view at the airfield so that everyone can access it when required.

LOCATION/RESOURCE	OFFICER	CONTACT NUMBERS
Air Base *(name)*	Airbase Manager *(Name)* AMOSC *(Name)*	Landline: Fax: BGAN: Mobile Sat Phone: Mobile:
Airfield Operations Emergencies First Aid Airfield Logistics	Duty Officer (Name)	Land/Mobile No:
Emergency services	(Nearest Location)	(Phone No.)
Helicopter company	(Contact Name)	(Phone No.)

Appendix 2. Communications Plan

This section is to be used to develop a communications plan which will clearly highlight what technology, frequency, or number is needed to allow for effective communication across all areas relating to an offshore surveillance operation.

Whenever an incident occurs in a remote offshore location, communications can be challenging. By developing this plan, communication between the IMT, the FOB and the operating aircraft can be identified and documented.

There are three distinct communication zones:

- The IMT
- The Airbase
- The Offshore Operations (Operational Aircraft)

By using the below matrix, primary and secondary communication methods can be established.

	The IMT	**The Airbase**	**Offshore Operations**
The IMT	Primary: Voice Secondary: Mobile Phone/UHF Radio	Primary: Mobile Phone Secondary: Satellite Phone	N/A
The Airbase	Primary: Mobile Phone Secondary: Satellite Phone	Primary: Voice Secondary: Mobile Phone/UHF Radio	Primary: Airband VHF Radio Secondary: Satellite Phone
Offshore Operations	N/A	Primary: Airband VHF Radio Secondary: Satellite Phone	Primary: VHF Headset Secondary: Voice

Once communication lines have been established between the IMT, the Airbase and the Operational Aircraft, the airbase manager will complete an ICS Form 205 and 205a to record all communication paths.

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	**2. Date/Time Prepared:**	**3. Operational Period:**
	Date:	Date From: Date To:
	Time:	Time From: Time To:

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks

5. Special Instructions:

6. Prepared by (Communications Unit Leader): Name: _____ Signature: _____

ICS 205 | **IAP Page** ____ | Date/Time: _____

COMMUNICATIONS LIST (ICS 205A)

1. Incident Name:	2. Operational Period: Date From:	Date To:
	Time From:	Time To:

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)

Appendix 3. Safety Risk Assessment (AMOSC)

Column Descriptions

Column A	Hazard ID#. Unique identifier for each identified hazard.
Column B	Location of hazard.
Column C	The activity to be carried out. Do not fill in names of machines/equipment to be used (i.e. a computer is not an activity, but working on a computer is)
Column D	Select from the drop down list the type of hazard associated with the activity to be carried out. i.e., Physical, Chemical, Ergonomic, Environmental, Electrical.
Column E	More specific detail of hazard e.g. Environment - over exposure to extreme temperatures
Column F	Identify possible consequences/effects accidents/ill health associated with each identified hazard (e.g. fires, explosions, cuts, burns, frost bites, fractures etc).
Column G	Inherent Risk Rating. The risk that an activity would pose if no controls or other mitigating factors were in place (the gross risk or risk before controls) Likelihood - see matrix section below.
Column H	Inherent Risk Rating. The risk that an activity would pose if no controls or other mitigating factors were in place (the gross risk or risk before controls) Consequence - see matrix section below.
Column I	Inherent Risk Rating. The risk that an activity would pose if no controls or other mitigating factors were in place (the gross risk or risk before controls) Risk = Likelihood x Consequence. Calculated automatically and cell will change colour based on risk rating
Column J	Risk control measures that are in place to eliminate or minimise risks. Methods to control risks may be analysed according to the Hierarchy of Controls: Elimination, Substitution, Engineering Controls, Administrative Controls and Personal Protective Equipment (PPE). Elimination of the hazard should take first priority while PPE should be the last line of defence. Elimination (e.g. Use water-based solvents instead of organic based solvents); Substitution (e.g. Use a less toxic solvent); Engineering Controls (e.g. Use of fume cupboard or gloves boxes); Administrative Controls (e.g. Work instructions, good practices, training); PPE (e.g. Use of safety eyewear plus respirator, use of gloves).
Column K	Residual Risk. The risk that remains after controls are considered (the net risk or risk after controls). Likelihood - see matrix section below.
Column L	Residual Risk. The risk that remains after controls are considered (the net risk or risk after controls). Consequence - see matrix section below.
Column M	Residual Risk. The risk that remains after controls are considered (the net risk or risk after controls). Consequence - see matrix section below Risk = Likelihood x Consequence. Calculated automatically and cell will change colour based on risk rating
Column N	Enter the name of the person appointed to oversee the implementation of the additional control measures.

Risk Matrix Tool

Risk Matrix Based on AS/NZ ISO 31000				Consequence/Impact/Severity				
				Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
				No injuries	First aid treatment	Medical treatment required	Extensive injuries	Death
				1	2	3	4	5
Likelihood/Probability	Frequent (5)	Almost Certain	A	5	10	15	20	25
	Likely (4)	Will probably occur in most circumstances	B	4	8	12	16	20
	Possible (3)	Might occur at some time	C	3	6	9	12	15
	Unlikely (2)	Could occur at some time	D	2	4	6	8	10
	Rare (1)	May occur only in exceptional circumstances	E	1	2	3	4	5

1 to 2	Risk Acceptable	There are no imminent dangers. Frequent review shall be in place especially changes in procedures, materials or environment.
3 to 6	Review Task before proceeding	Proceed with care. Additional control is advised.
7 to 14	High Risk Task	Proceed with extreme caution. Implement additional (secondary) controls if possible.
15 to 25	Operation not permissible	Stop operation and review controls. If necessary abort task.

Risk Assessment

Hazard ID #	Hazard Identification					Inherent Risk Rating (pre-controls)			Risk Control	Residual Risk (post controls)			
#	Location	Work Activity / Task / Hazard Source	Hazard Type	Hazard	Effects / Consequences	Likelihood (L)	Consequence (C)	Risk = LxC	Risk Control	Likelihood (L)	Consequence (C)	Risk = LxC	Person Responsible
SURV-1-1	On water / over water activities	Normal Flight Operations	Physical	Aircraft Ditching, Engine failure, Fuel exhaustion, Structural Failure	Personal Injury or death	2	5	10	Daily pre-flight inspections of all aircraft, Thorough flight planning.	1	5	5	**Pilot**
SURV-1-2	Airfield / Airbase	Normal Flight Operations	Physical	Aircraft accident within airbase/airfield boundary	Personal Injury or death	3	5	15	Communication with control tower. Communication with emergency services on field. Secure Site. Appropriate reporting procedures to authorities.	1	5	5	**Pilot, Airfield Operator, AGS**
SURV-1-3	Airbase / Airfield / Operational Flying / Over water	Normal Flight Operations	Physical	Pilot disorientation, Incapacitation	Personal; Injury or death	2	3	6	Accurate weather reports before departure. Ground crew monitoring pilot. Pilot has current medical. Self-monitoring by Pilot. Fatigue management.	1	3	3	**AGS, Pilot**
SURV-1-4	Airbase / Airfield / Operational Flying / Over water	Normal Flight Operations	Physical	Communications Failure	Personal injury, Failure of equipment	2	2	4	Pre-flight testing of the system. Use of aircraft secondary navigation systems, second GPS, second VHF channel, TracPlus units, Returning to NOB	1	2	2	**AGS, Pilot**
SURV-1-5	Airbase / Airfield / Operational Flying / Over water	Normal Flight Operations	Physical	Emergency Equipment non-operational	Personal injury or death, Failure of equipment	2	5	10	Pre-flight inspection of sea survival equipment. Top cover for SAR purposes and surface vessel SAR. Pilot to wear lifejacket and personal EPIRB whilst operational. Quarterly equipment checks. Equipment serviced as per manufacturer's instructions.	1	5	5	**AGS, Pilot**
SURV-1-6	Airbase / Airfield / Operational Flying / Over water	Normal Flight Operations	Physical	Extreme weather events	Personal Injury or death	3	5	15	Up to date and accurate weather reports and regular monitoring. Identify a secondary airfield as an alternate landing strip.	1	5	5	**AGS, Pilot**

Hazard ID #	Hazard Identification					Inherent Risk Rating (pre-controls)			Risk Control	Residual Risk (post controls)			
SURV-1-7	Airbase / Airfield	Normal Refuelling Operations	Chemical / Physical	Aircraft fire on the ground	Personal Injury or death, environmental damage, infrastructure damage, equipment damage	2	5	10	Shutdown aircraft before refuelling. Refuel by qualified airfield personnel. Pilot to supervise refuelling. Pilot to exit aircraft whiles refuelling in progress. Fire extinguisher on hand at all times. Emergency contact phone number for airfield emergency services.	1	5	5	**AGS, Pilot**

Appendix 4. Positional Responsibilities Role Descriptions

Aviation Operations Branch Director (AOBD)

- Interpret the incident controller's intent for surveillance.
- Liaise with operations unit – air operations branch.
- Liaise with logistics unit for aviation support requirements.
- Assess the available response assets and any limitations (maintenance, Crew, logistics, weather) that may impact tasking.
- Generate the surveillance flying program to meet IMT planning section intelligence requirements.
- Generate the Air Data Computer (ADC) flying program for maximum coverage in conjunction with the aircraft pilot.
- Assess SAR requirements and in liaison with the air operations branch, generate SAR aircraft standby and flying program to provide coverage for surveillance operations.
- Generate any logistical support missions as required.
- Help generate the Air Task Order (ATO) and flying program.
- Issue ATO and flying program to the AGS.
- Assemble aviation surveillance operations activity brief for the IC.

Air Base Group Supervisor (AGS)

- Receive taskings / flying program details from the AOBD.
- Brief airfield ARO and airfield fuel suppliers of 72-hour requirements.
- Ensure aviation fuel stocks are suitable for 72-hour forecast activities.
- If required, liaise with airfield ARO and the AOBD to ensure that the aviation fuel requirements are met.
- Notify IMT of all SARTIME overruns and initiate the emergency response plan if required.
- Monitor airfield suitability and report any issues to the IMT as required (i.e. security, airfield congestion, etc).
- Report any airfield stakeholder issues to the IMT.
- Compile and report daily and weekly reports as required to the IMT.

Surveillance Pilot

- Receive tasking information from the AGS.
- Plan flight to arrive at the operational area as per tasking order.
- Submit a flight plan for the flight.
- Nominate SARTIME with the AGS.
- Maintain safety of the flight.
- Conduct operations as required by the aerial observer.
- Participate in debriefing activities post flight with the AGS and IMT
- Compile and report post flight activities to the AGS including:
- Total hours flown,
- The status of the crew,
- Any safety breaches,
- Any administration or logistical issues.

Aerial Observer

- Receive tasking information from the AGS.
- Attain the most recent information from the IMT planning section.
- Plan the flight with the pilot to arrive onsite as tasked.
- Conduct observation operations as tasked.
- Participate in debriefing activities post flight with the AGS and IMT.
- Compile and report post flight activities including:

- Total hours flown,
- Results of the operation,
- Any safety breaches,
- Any administration or logistical issues.

Shoreline Plan

Australia Business Unit

Otway Exploration Drilling Program
Shoreline Protection and Clean-up Plan

ABU2-000-EN-V01-D-00006

Revision Detail

Rev Number	Date	MOC Number	Author	Approver
001	21/10/2024		[redacted]	[redacted]

Contents

List of Appendices

List of Tables

List of Figures

Abbreviations and Definitions	
AMOSC	Australian Marine Oil Spill Centre
AMOSPlan	Australian Marine Oil Spill Centre Plan
AMSA	Australian Maritime Safety Authority
API	American Petroleum Institute
ASTM	American Society for Testing and Materials
COP	ConocoPhillips
EP	Environment Plan
EPA	Environmental Protection Agency
GIMAT	Global Incident Management Team
HP	High Pressure
IBA	Important Bird Area
IBC	Intermediate Bulk Container
ICS	Incident Command System
IMT	Incident Management Team
KI	King Island
LGA	Local Government Area
LOWC	Loss of Well Control
LP	Low Pressure
MDO	Marine Diesel Oil
NEBA	Net Environmental Benefit Analysis
NOAA	National Oceanic and Atmospheric Administration
NRT	National Response Team
NY	New Year (Island)
OPEP	Oil Pollution Emergency Plan
PFD	Personal Flotation Device
PPE	Personal Protective Equipment
ROP	Roll Over Protection
SA	South Australia
SCAT	Shoreline Clean-up & Assessment Technique
SIMA	Spill Impact Mitigation Assessment
SMV	Surveillance, Monitoring and Visualisation
STR	Shoreline Treatment Recommendation
STRG	Shoreline Treatment Recommendation Guide
TAS	Tasmania
TRP	Tactical Response Plan
UHF	Ultra-High Frequency
UTV	Utility Terrain Vehicle
VHF	Very High Frequency
VIC	Victoria

1. Purpose

The purpose of this Shoreline Protection and Clean-up Plan is to describe the arrangements that ConocoPhillips Australia has in place to prepare for and respond to shoreline impact of a hydrocarbon release during the Otway Exploration Drilling Program (the activity or exporation program).

2. How to use this Plan

This plan supports Section 4.3 (Shoreline Response: Protection and Deflection) and Section 4.4 (Shoreline Response: Shoreline Clean-up) of the ConocoPhillips Australia Oil Pollution Emergency Plan (OPEP) for the exploration program.

Each section of this document and the supporting appendices have been drafted to expedite the implementation of appropriate shoreline response operations.

In the event of a spill and upon awareness of the potential for shoreline contact, the incident management team can use the function-specific sections of this document (Section 3) to guide shoreline response – including tactics/tasks, resources and logistics.

This plan should be used in conjunction with the Environment Protection Authority (EPA) Tasmania – First Strike Plan for King Island, and the Victorian State Maritime Emergencies (non-search and rescue) Plan.

3. Shoreline Protection and Clean-up Strategy

Shoreline protection and deflection and shoreline clean-up have been identified through a feasibility and effectiveness assessment as proposed response strategies for both an marine diesel oil (MDO) and a gas condensate release. These strategies should be deployed where safe to do so and where the Net Environmental Benefit Analysis (NEBA) indicates the strategy will result in net environmental benefit. Should the response or the spill impact state waters (within 3 nm of the coastline), the shoreline response will be under the control of the relevant state control agency with ConocoPhillips Australia providing equipment and personnel support as required.

Oil spill modelling shows the probability of shoreline contact by hydrocarbon released during a worst-case credible discharge varies depending upon the season and the relative wind and sea conditions. The geographic boundaries of potential oil stranding sites extend from the SA/Victorian Border to Wilsons Promontory and King Island. Further modelling detail is available within the OPEP Section 2.3

In order to mount an effective and timely response to a potential shoreline impact, extensive work has been done to clearly define what clean-up strategies should be employed based on the location of the shoreline impact. The location of the shoreline impact triggers either a Tactical Response Plan (TRP) activation, or a Shoreline Treatment Recommendation (STR) implementation. The shoreline response process is outlined in Figure 1.

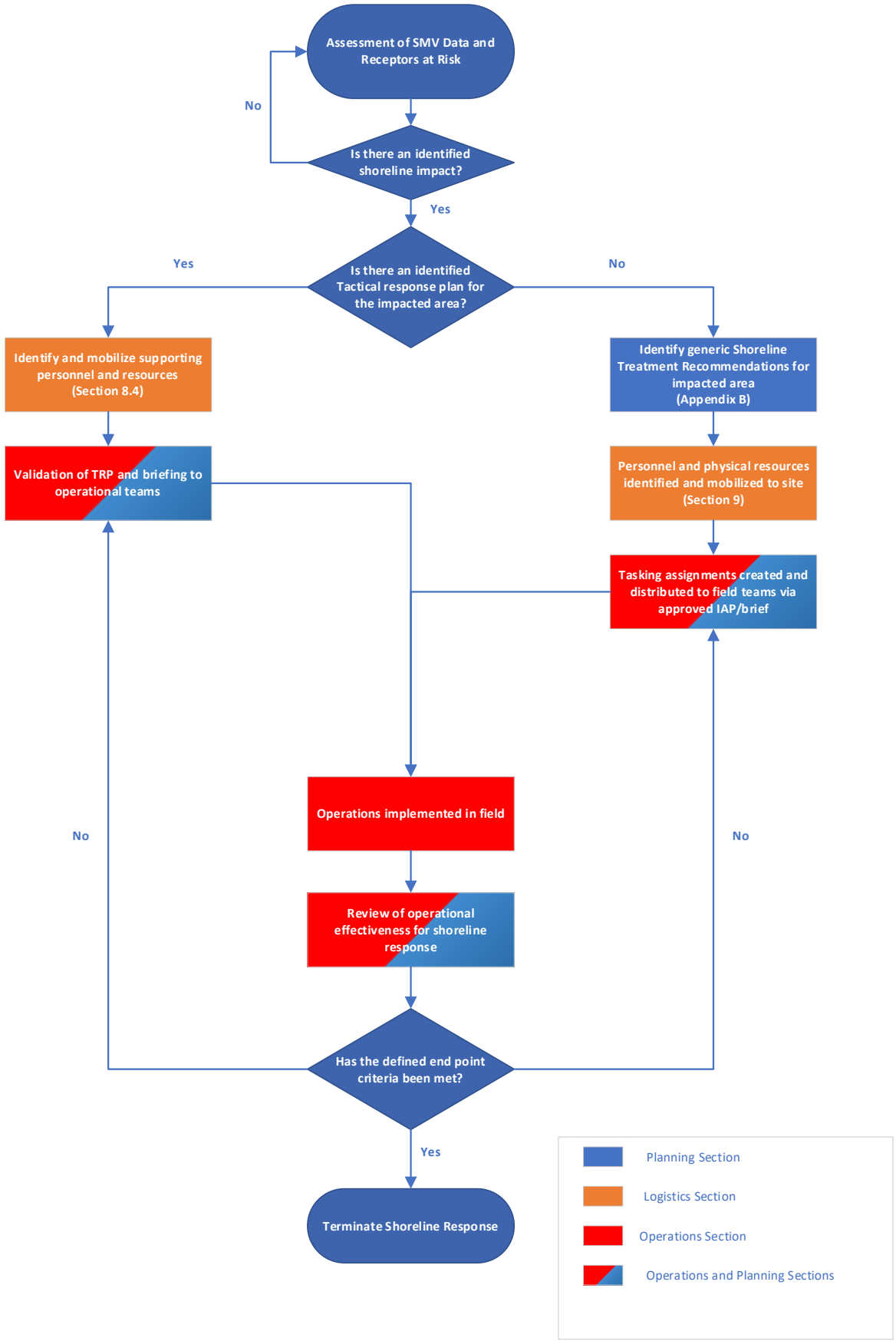


Figure 3-1: Shoreline response flowchart

4. Shoreline Command Structure

Shoreline response field operations can scale up quickly to involve large numbers of responders and supporting equipment and logistics. This requires effective planning, operational support and communication across the Incident Management Team, Forward Operating Base(s) and Field Teams.

For ConocoPhillips Australia's exploration activity, oil spill modelling indicates the potential for shorelines to be impacted at moderate thresholds at King Island, Tasmania and along the Victorian coastline, requiring the need for cross-jurisdictional response arrangements. Further details around these arrangements are outlined in Sections 2.7.2 – 2.7.5 of the OPEP for the exploration program.

5. Tactical Implementation

This section provides Tactical Response Plans (TRPs) for the identified 'high priority' shoreline sites along the Victorian and King Island coastlines. A Shoreline Treatment Recommendation Guide (STRG) is also included as a supporting resource (Appendix 1) along with pre-determined sectorisation and segmentation mapping.

5.1. Sectorisation and Segmentation

The shoreline from Nelson to Cumberland River (including Deen Maar (Lady Julia Percy Island), Inverloch to South Point (including surrounding islands off the Wilsons Promontory National Park) and the Western Side of King Island has been identified in the modelling as having a potential to be impacted by a hydrocarbon spill. This stretch of coastline has been divided in to eight sectors for the purpose of this Shoreline Protection and Clean-up Plan. The geographic scope and sectors are illustrated in Figure 5-1.

Figure 5-1: Geographic scope and sectors of this plan

Sector A – Glenelg	Sector B – Moyne
Sector C – Warrnambool	Sector D – Moyne 2
Sector E – Corangamite	Sector F – Colac-Otway
Sector G – South Gippsland	Sector H – King Island

The eight sectors are further divided into operational segments to assist with site identification and tactical response planning found in Table 5-1.

Several parameters were taken into consideration during the segmentation process, these include substrate type, sensitive receptors (ecological, sociological, and economic), population, access and egress, proximity to key sites, distance between segments and bodies of water (embayment's, estuaries, rivers).

The sectorisation and segmentation of the coastline was completed in Google Earth Pro. Sector layers have been prepared and are available in KMZ/KML format via Australian Marine Oil Spill Centre (AMOSC).

Table 5-1: Shoreline segmentation – primary details

Sector Reference	Total Segments	West Segment	West Coordinate	East Segment	East Coordinate
A: Glenelg	91	NEL-10	38°3'22.43"S 140°57'57.30"E	CDT-06	38°15'53.27"S 141°52'18.77"E
B: Moyne	37	CDT-06	38°15'53.27"S 141°52'18.77"E	WNB-09	38°22'12.59"S 142°25'7.70"E
C: Warrnambool	13	WNB-08	38°22'12.59"S 142°25'7.70"E	MPG-05	38°27'1.14"S 142°36'32.08"E
D: Moyne 2	28	MPG-05	38°27'1.14"S 142°36'32.08"E	PTB-05	38°36'36.95"S 142°53'16.10"E
E: Corangamite	36	PTB-05	38°36'36.95"S 142°53'16.10"E	CVN-02	38°45'20.57"S 143°17'35.81"E
F: Colac-Otway	62	CVN-02	38°45'20.57"S 143°17'35.81"E	TSI-03	38°34'49.59"S 143°56'43.95"E
G: East Gippsland	124	INV-05	38°38'9.69"S 145°43'53.08"E	WEL-09	38°42'13.60"S 146°25'45.56"E
H: King Island inc Christmas and New Year Island.	646	KI01	39°56'7.27"S 143°50'26.27"E	KI526	39°56'7.24"S 143°50'26.09"E

5.2. Areas of Sensitivity

As outlined in the Environment Plan (EP) for the Otway Exploration Drilling Program, ConocoPhillips Australia have identified the following key coastal areas listed in Table 5-2 as areas of high sensitivity in the event of a large accidental release of hydrocarbons.

Table 5-2: High sensitivity coastal locations

ID	Location
VIC080	Shallow Inlet Marine & Coastal Park
VIC062	Anderson Inlet
VIC158	Aire River
VIC075	Lower Merri River Wetlands
VIC028	Glenelg Estuary
VIC030	Long Swamp
VIC066	Corner Inlet
VIC093	Princetown Wetlands
VIC091	Lower Aire River Wetlands
VIC084	Yambuk Wetlands
VIC159	Glenelg River
Victorian Cultural Heritage Sites	
Tasmanian Cultural Heritage Sites (inc. King Island)	
King Island Important Bird Area (IBA)	

The scale of the coastline in which the above areas are located is extensive. The shoreline type, key sensitive receptors and access/egress all vary significantly and subsequently so do the suitability of shoreline response options.

On review of the affected Local Government Areas (LGAs) and high sensitive coastal locations, the criteria within Table 5-3 was used to identify the requirement to develop a Primary or Secondary TRP.

Table 5-3: Selection criteria for primary and secondary tactical response plan development

Identified sensitivities to protect.	Response is logistically feasible.	Response is achievable with good chance of success.
Area of high sensitivity and/or long recovery time; or	Accessible by existing roads, tracks or vessels (Min. 4wd drive and pedestrian access)	No more than 5 boom sets of 250m each required (<1.25 km booming); and
Area of high cultural, local or national significance; and		Potential for calm water; and
Where the use of this area will be significantly affected by the presence of oil.		Probability of current flows being slow enough.

6. Tactical Response Plans

TRPs have been prepared for sites along the coastline in all the affected LGA's outlined in Section 3.1. Figure 6-1 shows the TRP decision guide used to determine the type of TRP is developed, being either a:

Primary TRP – for sites which meet the criteria outlined in Section 5.2, and therefore have a tactical response plan prepared which includes site specific details, response tasks, site setup plans, concept of operations and a full resource inventory; or

Secondary TRP – for sites which only partially meet the criteria outlined in Section 5.2. Their status indicates they are not significantly at risk to the impact of a hydrocarbon release; however, conditions could change which would require immediate attention for shoreline response planning. A tactical response plan for secondary sites focuses on site details and response initiation.

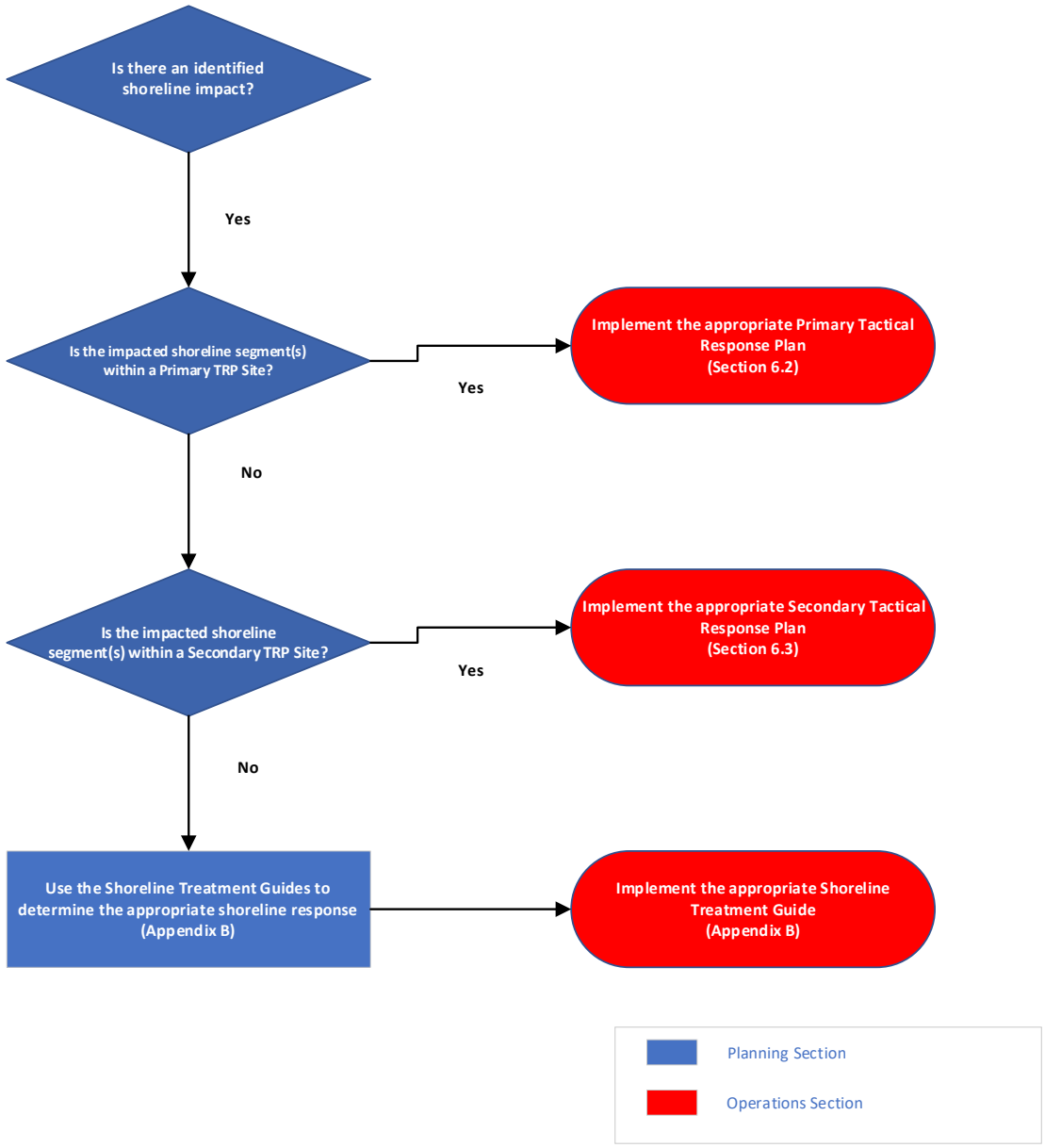


Figure 6-1: TRP development decision guide

6.1. Sites of First Nations Peoples Cultural Significance

Tasmania and Victoria have a rich and varied Indigenous Heritage. It is understood that there are likely to be sites along the affected areas that are important for social, spiritual, historical, and commemorative purposes.

Access to data identifying the location and reasoning behind these areas is limited due to cultural sensitivity of the sites and traditional landholders' preference to keep details regarding sacred sites within their own people.

Prior to the implementation of any shoreline deflection, protection, or clean-up, it is recommended that a cultural heritage advisor with specific knowledge of a given region is identified and incorporated into the planning section of the Incident Management Team (IMT).

Further situational information and mapping of cultural heritage sites of significance will need to be developed in the event of an incident, beyond what has been presented in this plan.

6.2. Primary TRP Sites

The 23 sites in Table 6-1 have been identified as 'High Priority' for shoreline response. Primary TRPs have been developed for each site, with the following information included in the Primary TRPs:

- **TRP Reference** – sector, segment(s), coordinates,
- **Site Details** – site location image, site description, site access, site constraints, main sensitivities, and facilities/services,
- **Response Information** – response tasks, rationale, site reference and response checklist,
- **Site Setup** – schematic illustrating site zoning, control, waste, and decontamination,
- **Concept of Operations** - guide to response deployment including boom placement, anchoring and oil recovery (where appropriate),
- **Tactical Assignments** – response tasking and considerations, response personnel and communications,
- **Resources** – inventory of personnel, oil spill equipment, vehicles/vessels, and site support resources required, and
- **Personnel and Emergency Information** – to be populated prior to implementation.

For each TRP there is an electronic tactical response layer available for Google Earth Pro which identifies the TRP site and response operations.

All references to booming operations in the TRPs and electronic layers are for illustrative purposes only. Situational Awareness and response specific conditions will determine the appropriate angle and anchoring system required on the day.

Table 6-1: Primary TRP locations

	LGA Reference	TRP Name	Latitude	Longitude
Victoria	Glenelg LGA	Glenelg River Primary TRP	38° 3'34.76"S	140°59'22.54"E
		Portland Primary TRP Site	38°20'42.53"S	141°37'17.54"E
		Surrey River Primary TRP	38°15'34.68"S	141°42'4.86"E
		Fitzroy River Primary TRP	38°15'42.64"S	141°51'12.37"E
	Moyne LGA	Moyne River Primary TRP Site	38°23'21.55"S	142°14'55.94"E
	Warrnambool LGA	Merri River Primary TRP Site	38°24'2.60"S	142°28'18.98"E
		Hopkins River Primary TRP Site	38°24'7.93"S	142°30'32.38"E
	Moyne 2 LGA	Curdies Inlet Primary TRP Site	38°36'24.74"S	142°52'52.33"E
	Corangamite LGA	Port Campbell Creek Primary TRP	38°37'7.13"S	142°59'32.30"E
		Gellibrand River Primary TRP	38°42'19.06"S	143° 9'23.42"E
	Colac Otway LGA	Aire River Primary TRP	38°48'23.17"S	143°27'40.53"E
		Parker Inlet Primary TRP	38°50'43.05"S	143°33'40.03"E
		Barham River Inlet Primary TRP	38°45'45.23"S	143°40'30.92"E
		Apollo Bay Primary TRP Location	38°45'24.43"S	143°40'40.93"E
		Skenes Creek Primary TRP	38°43'29.06"S	143°42'39.95"E
		Kennet River Primary TRP Location	38°40'1.22"S	143°51'44.83"E
		Johanna River Secondary TRP Site	38°46'0.72"S	143°23'17.92"E
		Cumberland River Secondary TRP Site	38°34'34.26"S	143°56'55.64"E
		Wye River Primary TRP Site	38°38'4.74"S	143°53'28.79"E
	South Gippsland LGA	Port of Anderson Inlet Primary TRP	38°38'23.60"S	145°43'38.49"E
		Shallow Inlet Primary TRP	38°52'33.14"S	146°11'41.01"E
		Tidal River Primary TRP	39° 1'55.59"S	146°18'51.59"E
TAS	King Island LGA	Ettrick River Primary TRP	39°59'36.76"S	143°53'29.45"E

6.3. Secondary TRP Sites

The 33 sites in Table 6-2 have been identified as secondary sites for shoreline response. Secondary TRPs have been developed for each site, with the following information included in the Secondary TRPs:

- **TRP Reference** – sector, segment(s), coordinates,
- **Site Details** - site location image, site description, site access, main sensitivities, and facilities/services,
- **Site Reference** – site reference image,
- **Response** – site response justification, response initiation tasks, actions required, site assessment checklist and local information.

For each TRP there is a tactical response layer available for Google Earth Pro which identifies the TRP site.

Table 6-2: Secondary TRP sites

	LGA Reference	TRP Name	Latitude	Longitude
Victoria	**Glenelg**	Lake Mombeong	38° 6'46.27"S	141° 7'13.64"E
	Moyne	Yambuk Lakes	38°20'17.43"S	142° 2'45.38"E
		Yambuk Coastal Reserve	38°16'14.69"S	141°54'15.61"E
		Belfast Coastal Reserve	38°20'55.39"S	142°22'4.91"E
	Warrnambool	*Nil Secondary Identified*		
	Moyne 2	Buckley Creek	38°29'42.35"S	142°41'7.26"E
	Corangamite	Sherbrook Creek	38°38'35.02"S	143° 3'26.26"E
	Colac Otway	Milinesia Creek	38°45'5.30"S	143°18'49.43"E
		Blanket Bay Creek	38°49'35.59"S	143°34'58.68"E
		Wild Dog Creek	38°44'8.91"S	143°41'1.90"E
		Smythe Creek	38°42'16.87"S	143°45'45.76"E
		Sugarloaf Creek	38°41'48.81"S	143°47'47.87"E
		Carisbrook Creek	38°41'34.67"S	143°48'34.29"E
		Grey River	38°40'57.31"S	143°50'22.21"E
		Jamieson Creek	38°35'46.86"S	143°55'9.06"E
	South Gippsland	Ten Mile Creek	38°49'24.29"S	145°53'39.92"E
		Morgan Creek	38°51'40.78"S	145°54'38.11"E
		Derby River	38°58'17.29"S	146°16'9.84"E
		Whiskey Creek	39° 0'45.70"S	146°17'31.22"E
		Squeaky Beach	39° 1'20.13"S	146°18'11.89"E
		Growler Creek	39° 3'36.80"S	146°20'44.03"E
		Frazers Creek	39° 4'16.47"S	146°20'36.43"E
		Freshwater Creek	39° 4'14.53"S	146°25'37.53"E
Tasmania	**King Island**	Edward Street Pier	39°55'38.01"S	143°50'34.96"E
		Badger Box Creek	39°57'55.40"S	143°52'25.32"E
		Unnamed Site	40° 3'44.60"S	143°52'54.48"E
		Eel Creek	39°45'2.42"S	143°51'14.86"E
		Big Lake Inlet	40° 6'54.97"S	143°56'44.53"E
		Camp Creek	39°55'24.19"S	143°50'38.99"E
		Three Rivers Creek	39°53'33.29"S	143°50'46.41"E
		Porky Creek	39°51'22.61"S	143°51'38.57"E
		Pass River	39°48'4.43"S	143°51'53.51"E
		Bungaree Creek	39°46'9.34"S	143°51'5.83"E
		Yellow Rock River	39°41'52.58"S	143°53'27.66"E

7. Shoreline Clean-up and Assessment Technique

Shoreline Clean-up and Assessment Technique (SCAT) provides a systematic approach that uses standard terminology to collect data on shoreline oiling conditions. SCAT teams will evaluate oiling conditions factoring in shoreline types and environmental sensitivities and provide Shoreline Treatment Recommendations (STRs) and associated constraints. SCAT teams will collect the data needed to develop a Shoreline Clean-up Assessment Plan that will:

- Maximise recovery and enhance natural clean-up processes to the maximum extent practicable,
- Obtain the net environmental benefit, and
- Minimise the risk of further damage to habitats and resources from clean-up efforts.

During a response, SCAT would usually be undertaken by the Shoreline Assessment Group within the Environment Unit of the IMT.

This would occur concurrently with shoreline response activities, including pre-cleaning and protection of pre-determined locations. In the context of this plan this operating model is a guide and ConocoPhillips Australia would be responding under the guidance of the Victorian and/or Tasmanian control agencies, should it be requested.

8. Logistics and Resourcing Arrangements

The logistics section describes the equipment and resources required to support the TRPs outlined above.

Logistical and support arrangements for the supply of equipment and resources will operate in a tiered approach as described in the following sections.

8.1. Local Response Resources

Local resources are those available in the state of Victoria or on King Island, Tasmania and can be used on short notice. This equipment may come from the Port Authorities, state agencies (Department of Transport and Planning Victoria, or EPA Tasmania) or access to locally available equipment from the Australian Maritime Safety Authority (AMSA) and AMOSC.

8.2. Regional Response Resources

Regional response resources are those that are available within Australia, these may require mobilisation time and can come from AMSA, AMOSC or via the AMOSPlan Mutual Aid arrangements with industry. Table 8-1 provides a general indication of road transport time for this equipment to be available in townships that may be close to response locations.

Table 8-1: Indicative equipment movements times – via road

Time (hrs)	Portland	Apollo Bay	Sandy Point	Tidal River	Currie*
Geelong	4	2	4	5	16
Melbourne	5	3	3	4	17
Devonport#	16	14	16	17	12
Adelaide	6	9	11	11	24
Sydney	13	12	11	12	26
Brisbane	22	21	20	21	28
Townsville	29	29	29	30	43
Fremantle	35	37	39	40	52
Exmouth	46	48	50	51	64
Broome	49	51	53	54	67

**Travel time to Currie includes vessel transit from the Port of Geelong.*

 # Travel time from Devonport includes transit to Port of Geelong (direct to Currie)

8.2.1. AMSA Resources

ConocoPhillips Australia have access to Australian Maritime Safety Authority (AMSA) equipment Australia wide through AMOSC and the National Plan. AMSA maintain significant stockpiles of equipment in Adelaide, Brisbane, Dampier, Darwin, Devonport, Fremantle, Melbourne, Sydney, and Townsville.

A live full inventory of AMSA equipment is available from the AMSA website:

https://amsa-forms.nogginoca.com/public/equipment.html

AMSA also administers the National Response Team (NRT). The purpose of the NRT is to provide a national incident management and field operations surge capacity to support Australian pollution response control agencies responding to major marine environmental incidents. The NRT is a core capability of the National Plan and comprises of 40 incident management team personnel and 42 field team leaders.

8.2.2. AMOSC Resources

ConocoPhillips Australia have access to Australian Marine Oil Spill Centre (AMOSC) equipment and resources Australia wide. Geelong based equipment can be mobilised to King Island in approximately 18 hours. Additional equipment in Fremantle, Exmouth and Broome can be mobilised to the Port of Geelong in approximately 40, 51 and 55 hours respectively. This includes an allowance of 4 hours for truck availability/sourcing and loading.

An overview of what equipment AMOSC has available is on the AMOSC website:

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

An inventory of AMOSC equipment is available in Appendix 2 of the OPEP with live readiness status and locations available via the members section of the AMOSC website with the login details provided to ConocoPhillips Australia of access to this information can be given by contacting the AMOSC Duty Officer directly:

https://amosc.com.au/member-login/

AMOSC also has access via the AMOSPlan to mutual aid equipment via its members. This equipment can be made available to ConocoPhillips Australia in the event of a response (available in Appendix 13 of the OPEP).

AMOSPlan provides ConocoPhillips Australia access to the AMOSC Core Group. A group of industry trained marine spill response personnel available to rapidly expand and surge well trained personnel into a spill response. Core Group provides additional personnel to support a complex and/or sustained response, including Incident Management Team and field (aviation, marine and shoreline) personnel.

8.3. Global Resources

The ConocoPhillips Global Incident Management Assist Team (GIMAT) is a specialist incident management team. Members are located globally and can be readily mobilised to support a business unit IMT that has exceeded its capacity to manage effectively or is required to maintain sustained IMT operations over an extended duration incident. The GIMAT can fill most roles within the ConocoPhillips Australia IMT structure.

8.4. TRP Resource Guidance

This section supports the personnel and equipment recommendations made in the TRPs in Section 3. Individual items of oil spill response equipment, as well as the combination of commercially available materials

could be used in any shoreline response scenario. These are deemed suitable for a shoreline response to a accidental hydrocarbon release during the ConocoPhillips Australia Otway Exploration Drilling Program.

8.4.1. Response Personnel

Personnel provided for operational work on the shoreline or in vessels must be fit to work in the shoreline environment. Minimum trained operational personnel requirements for individual operational activities are listed within each TRP document. Incident Command System (ICS) span of control ratios have been applied to establish the numbers of personnel required and the contents of the response kits to support their activities. Span of control will not exceed seven personnel under the command of a single supervisor.

8.4.1.1. Trained Responders

ConocoPhillips Australia can source additional field resourcing to support a Jurisdictional led response from the following locations:

- ConocoPhillips Staff
- AMOSC Technical Staff
- AMOSC Core Group
- Labour hire agencies (as required under supervision of trained personnel)

OPEP Appendix 1: IMT Capability Assessment Part F: Field Response Training Description provides role descriptions and training requirements for each of the resources listed.

8.4.2. Site Set-up

Provision for activities supporting the operational taskings associated with each TRP will require non-oil spill response specific equipment and supplies as per the TRP listings for the Site Set-up Kit and Decontamination Kit. Both the Site Set Up Kit and the Decontamination Kit listed in Tables 8 and 9 respectively are designed to support up to 30 personnel at the beginning of the response with further equipment required for extended response durations.

Table 8-2: Site set-up kit

Contents	Quantity (Minimum)	
Tarps, 3m x 3m	2	Unit
Gazebo, 3m x 3m	2	Unit
Sorbent Roll, 30” x 150m	1	Unit
Sorbent Pads	1	Pack 100
1.8m steel core garden stakes	20	Unit
Barrier Tape, 75mm x 100m	8	Rolls
Flagged Safety Bunting, 30m	1	Roll
Rope, 12mm x 20m	2	Lengths
T Top Safety Bollards w/ 6kg weights	6	Unit
Folding chair	2	Unit
Clip Board and pens	2	Sets
20 ltr Water Drum	1	Unit
Trestle Table	2	Units
Portable Toilet	2	Unit
Fresh Water, 1000 litre IBC	2	Units
Waste Water Storage, 1000 litre IBC	2	Units
120 litre Wheely Bin	4	Units

8.5. Site Decontamination

Decontamination of oiled personnel and equipment is essential in the prevention of secondary contamination and must be taken into consideration prior to any contact with oil. Decontamination procedures and equipment listed in Table 8-3 will be required at any location at which oil spill response is carried out.

Table 8-3: Decontamination kit

Contents	Quantity (Minimum)	
Tarps, 3m x 3m	2	Unit
Gazebo, 3m x 3m	2	Unit
Portable Bund	2	Unit
Sorbent Roll, 30” x 150m	1	Unit
Sorbent Pads	1	Pack 100
1.8m steel core garden stakes	20	Unit
Barrier Tape	2	Rolls
Flagged Safety Bunting, 30m	1	Roll
Rope, 12mm x 20m	2	Lengths
T Top Safety Bollards w/ 6kg weights	6	Unit
Folding chair	2	Unit
Scrubbing Brush	4	Unit
Plastic Tub, 50 ltr	2	Unit
Plastic Tub, 35 ltr	2	Unit
Cable ties	1	Pack 100
Duct Tape	2	Roll
Tyvek Coveralls	8	Pairs
Oil Resistant Gloves	8	Pairs
Nitrile Gloves	1	Box 100
Safety Gogglesfirest	4	Pairs
P2 Respirator Mask	1	Box 10
Plastic bucket, 10 ltr	2	Unit
‘Exit’ Sign	1	Unit
‘Entry’ Sign	1	Unit
Slide/Stake Hammer	1	Unit
Stake Puller	1	Unit
Detergent, 5 ltr	2	Unit
Heavy Duty Hand Cleaner, 5 ltr	2	Unit

8.6. Shoreline Pre-cleaning

Most pre-clean activities will not require extensive equipment and resources and generally require that natural materials in potential impact zones are physically relocated to above the high tide line. The equipment and personnel identified within a TRP to undertake shoreline clean-up can be utilised for shoreline pre-clean to above high-tide mark.

8.7. Shoreline Clean-up

Shoreline clean-up activities are generally labour intensive. The equipment listed in Table 8-4 should be generally considered as a minimum. Shoreline assessment of specific locations in the event of an incident should be used to recommend the most suitable equipment for shoreline clean-up.

Table 8-4: Shoreline clean-up kit

Contents	Quantity (Minimum)	
Long handled metal rake	8	Units
Plastic Rake	4	Units
Concrete placers	4	Units
Square mouth shovel	8	Units
Heavy duty plastic bags, 300mm x 600mm	1,000	Units

8.8. Protection and Deflection

8.8.1. Near-shore Boom

Near-shore boom is used for protection and deflection activities. Various types of nearshore boom can be used and are held by various agencies and suppliers. Table 8-5 identifies the most common types available along with basic performance.

Table 8-5: Near-shore boom

Boom Type	Considerations	Operational Limitations
Self Inflating	• Generally in 25m lengths. • Good wave following characteristics. • Rapid, easy to deploy. • For deflection and containment in low current nearshore waters. • Susceptible to punctures. • Not suitable for abrasive environments (Sharp rocks, abrasive jetty structures).	> 1.2m waves > 0.25m/s current
Inflatable – general purpose boom	• Produced in 10m, 20m and 25m lengths. • Requires air inflation to deploy. • Have good wave following characteristics. • For deflection and containment in low current nearshore waters. • Susceptible to punctures. • Not suitable for abrasive environments (Sharp rocks, abrasive jetty structures).	> 2m waves > 0.25m/s current
Solid inflation – general purpose	• Generally in 25m lengths. • Have poor wave following characteristics. • Considered easy to deploy. • For deflection and containment in low current nearshore waters. • Highly durable, abrasive resistant, punctures do not result in loss of buoyancy.	> 1m waves > 0.25m/s current

8.8.2. Near-shore Boom Ancilliaries Kit

The near-shore boom ancillary kit contents in Table 8-6 have been selected as a recommended list of equipment required to deploy 100m of Near Shore Boom.

Table 8-6: Near-shore boom ancilliaries kit

Contents	Quantity (Minimum)	
ASTM Tow Bridle	2	Units
15kg Anchor	4	Units
10m rope	8	Lengths
20m rope	4	Lengths
Float	4	Units

8.8.3. Shore Seal Boom

Shore seal boom is used for protection and deflection activities, Table 8-7 identifies the considerations and limitations of shore seal boom during a response.

Table 8-7: Shore seal boom

Boom Type	Considerations	Operational Limitations
Shore sealing	• Produced in 10m, 20m and 25m lengths. • Good wave following characteristics. • Complex to deploy, requires comprehensive ancillaries. • Designed to seal at the waterline on mud or sand flats. • For deflection and containment in low current nearshore waters. • Susceptible to punctures. • Not suitable for abrasive environments (Sharp rocks, abrasive jetty structures).	Will not seal on rough or rocky shorelines.

8.8.4. Shore Sealing Boom Anciliaries Kit

The shore seal boom ancillary kit contents outlined in Table 8-8 are based on minimum requirements to deploy and maintain 100m of shore seal boom.

Table 8-8: Shore seal boom ancilliaries kit

Contents	Quantity (Minimum)	
Solid Stake	3	Units
Slide Hammer	1	Unit
Stake Puller	1	Unit
15kg Anchor	4	Units
10m rope	8	Lengths
20m rope	4	Lengths
Float	4	Units
ASTM Anchor Bracket	2	Unit
ASTM Tow Bridle	2	Units
Water pump	1	Unit
Air Blower	1	Unit
1 ½" Water Suction Hose	1	Unit
1 ½" Water Suction Hose Extension	1	Unit
Suction Strainer (Foot valve)	1	Unit
Water Discharge (Lay flat) Hose w/ Monson Head	1	Unit
Water Discharge (Lay flat) Extension Hose	1	Unit
Bucket (5ltr Plastic)	1	Unit
Monson Valve Adaptor	1	Unit
Waders	2	Pairs
2 x Solid Flotation Life Vest	2	Units

8.9. Spill Recovery

Any task within the TRPs that relates to Spill Recovery will require the following:

- Trained Responder
- Unskilled Labour
- Recovery System (i.e. Vacuum Truck)

The provision of specifically trained staff for the use vacuum trucks will require negotiation with the supplier.

8.9.1. Vacuum Truck

Vacuum trucks have been identified in the TRPs as an oil recovery method where access allows. Vacuum trucks can be used as a primary method to collect oil from booming sites or more traditionally to recover oil from temporary storage where an oil recovery skimmer is being used.

Vacuum trucks can service multiple sites, transporting waste directly to onwards disposal location, and are commonly available in most towns, often utilised as part of a council's waste contract.

8.9.2. Portable Vacuum Unit

Portable vacuum systems are designed to operate in remote areas and can recover oil over a wide range of viscosities and weathered conditions. Temporary storage or oil drums for direct removal of collected waste will be required in addition to the vacuum unit. Table 15 is a guide to the contents of a portable vacuum unit.

Table 8-9: Portable vacuum unit

Contents	Quantity (Minimum)	
Vac Unit/Power Pack	1	Unit
Suction Hose	1	Set
Suction Fittings	1	Set

8.10. Site and Response Support Personnel

8.10.1. Communication

Effective communication arrangements are critical to the success of any response operation and should consider the following:

- Satellite phone communications are specified in remote area TRPs to allow operational field teams to provide information to the IMT
- VHF radio communications will be required on all vessels supplied
- VHF handheld radio units will be required to support shore to vessel communications during deployments, and
- UHF radio units are recommended for communications between individual operational task groups in the field.

8.10.2. Support Vessels

Support vessels are required for some of the pre-identified TRP sites to assist in the deployment of boom and transport personnel and equipment. Small fishing or work vessels may be considered suitable, pending ConocoPhillips Australia marine vetting requirements and consideration of the below minimum requirements:

- Commercially registered with the relevant regulatory authority
- Capable of carrying 4 people
- Open, aluminium hull
- Safety equipment as per state regulations, and
- Ability to safety tow boom if required.

8.11. Shoreline Flushing Kit

The use of high-volume, low-pressure water flow to remobilise stranded oil for skimming may be recommended at TRP sites. Oil is flushed from a high point into sorbent materials or boom where it can be contained and recovered. Table 8-10 outlines the contents of a shoreline flushing kit.

Table 8-10: Shoreline flushing kit

Contents	Quantity (Minimum)	
Water Pump	1	Unit
Suction Hose	1	Unit
Discharge Hose	1	Unit
Suction Strainer	1	Unit
Float	2	Units
5kg anchor	1	Unit
Rope, 12mm x 20m	2	Units
1.8m steel core garden stakes	20	Units
Barrier Tape	2	Rolls

8.12. Utility Terrain Vehicle (UTV)

UTVs have been included in the TRPs for the movement of personnel, equipment and waste. UTVs have been selected over other types of vehicles, such as ATVs (All-Terrain Vehicles) i.e. Quads, because of the ability to carry greater loads, personnel and the improved safety features including:

- Side by side seating
- Seatbelts
- ROP (Roll Over Protection), and
- Minimum 360 kg payload.

8.13. Temporary Waste Storage

Within the context of CoP's Otway Drilling operations and the response options available waste will mainly be solid waste from PPE sorbent and shoreline clean-up activities. There will likely be limited liquid waste generated by vacuuming larger concentrations of hydrocarbon collected by protection and deflection operations.

Recommended considerations for temporary storage includes Intermediate Bulk Containers, plastic lined skip bins or plastic lined pits as detailed below:

1) Standard Schutz IBCs
    a) Volume restricted by available laydown area and number of IBCs
    b) Preferred method of lifting requires a forklift
    c) Camlock fitting and valve for hose attachmen
    d) Transfer waste using hose and pump, or vacuum
2) Plastic Lined Skip Bins
    a) Volume restricted by available laydown area and capacity of bins
    b) Overfilling bins may make them unable to be lifted
    c) Easy removal from site using hook trucks from commercial providers
3) Plastic Lined Pits
    a) Volume restricted by available area and capacity
    b) Protection of recovered waste in inclement weather to be considered
    c) Transfer waste using mechanical means into a skip bin for disposal
    d) Environmental assessment/approvals may be required due to the requirement to dig a hole for this option.

8.14. Personnel Protective Equipment (PPE)

Responders to an accidental hydrocarbon release may be exposed to various risks while working, with some examples being:

- Exposure to dangerous gasses or fumes
- Environmental – weather, sea state, animals
- Vessel Operations
- Slips, Trips and Falls
- Vehicle Operations
- Plant Operations
- Manual Handling, and
- Noise.

All operators involved in oil spill operations are required to maintain a basic standard of PPE when on task. The standard and group issue PPe requirements listed in Tables 8-11 and 8-12 are based on the API

Recommended Practice 98, First Edition, August 2013, 'Personal Protective Equipment Selection for Oil Spill Responders'.

Table 8-11: Standard issue individual PPE kit

Contents	Quantity (Minimum)	
Hard hat	1	Unit
Safety glasses with side shields (clear)	1	Unit
Safety glasses with side shields (smoked)	1	Unit
Goggles	1	Unit
Steel capped boots with gaiters	1	Units
Disposable nitrile gloves	100 pack	Unit
Lacerations resistant riggers gloves	2	Units
Chemical resistant gloves	2	Units

Table 8-12: Group issue resupply PPE kit – 50 PAX for 5 day operations

Contents	Quantity (Minimum)	
Safety glasses with side shields (clear)	17	Unit
Safety glasses with side shields (smoked)	17	Unit
Goggles	10	Unit
Face shield	10	Unit
Steel capped boots with gaiters	5	Units
Chemical resistant boots (wellies)	10	Unit
Disposable nitrile gloves	10x 100p	Units
Lacerations resistant rigger gloves	250	Units
Chemical resistant gloves	250	Unit
Chemical protective garments - TYVEK (impervious chem suit)	250	Unit
Ear protection - ear plugs	50x 25p	Unit
Ear protection - muffs	10	Unit
Respiratory - disposable particulate respirator	50x 20p	Units
PFD (Type 1)	20	Unit

9. Resource Estimation

The following information supports the personnel and equipment recommendations derived from an analysis of the modelling for each scenario/location. When activating TRPs, clear response resource totals are highlighted for each location. However, when activating a generic STR, resource summaries are not clear due to the varying nature of shoreline loading and shoreline length.

The following resource estimations have been calculated based on the modelling done for each permit area, hydrocarbon type and location. By analysing the shoreline types for each affected LGA, calculations have been made based on industry guidelines for best practice for each response strategy to come up with an estimation of resource requirements. These estimations may help the IMT properly resource an effective spill response operation. A list of the assumptions and criteria for each resource estimation is in located in Appendix 1 Shoreline Personnel and Equipment Assumptions.

For each of the estimations below, the permit areas and location descriptions identified in Tables 9-1 and 9-2 are used (and are shown in the associated images).

Table 9-1: T/49P hydrocarbon release locations

Release Location	Latitude	Longitude	Water Depth (m)
Location 1	39° 15' 46.6" S	143° 20' 26.4" E	93
Location 2	39° 47' 49.7" S	143° 30' 46.3" E	100
Location 3	40° 13' 5.3" S	143° 29' 10.9" E	114

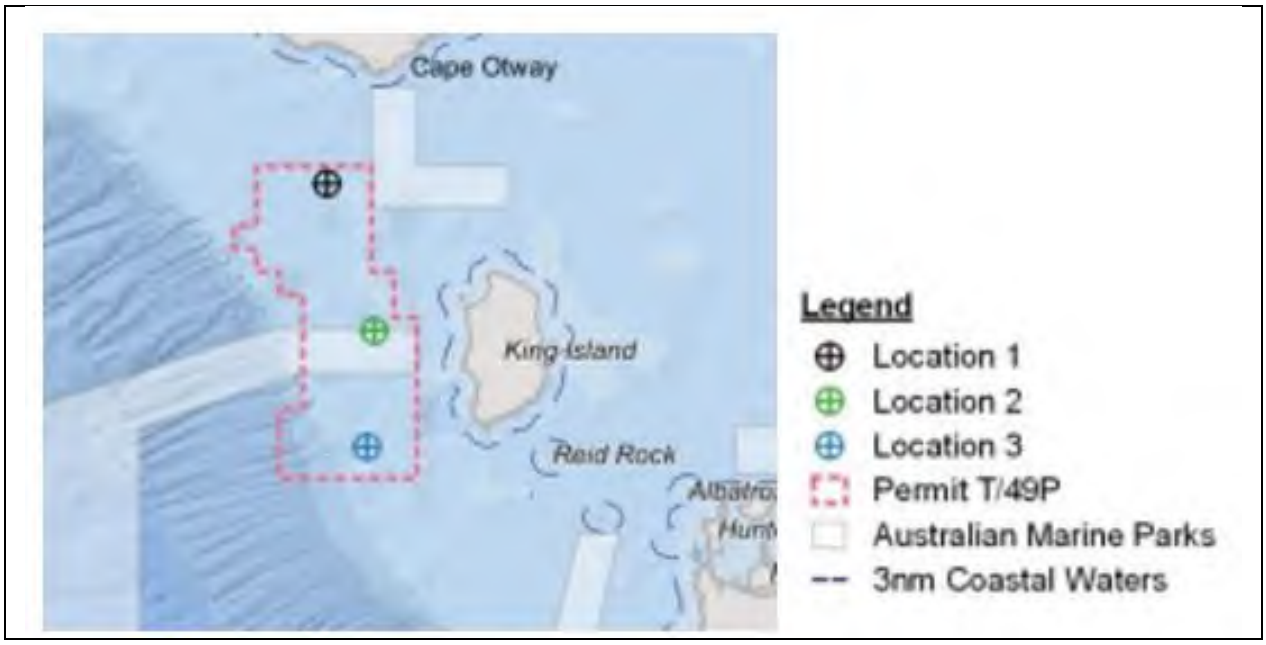
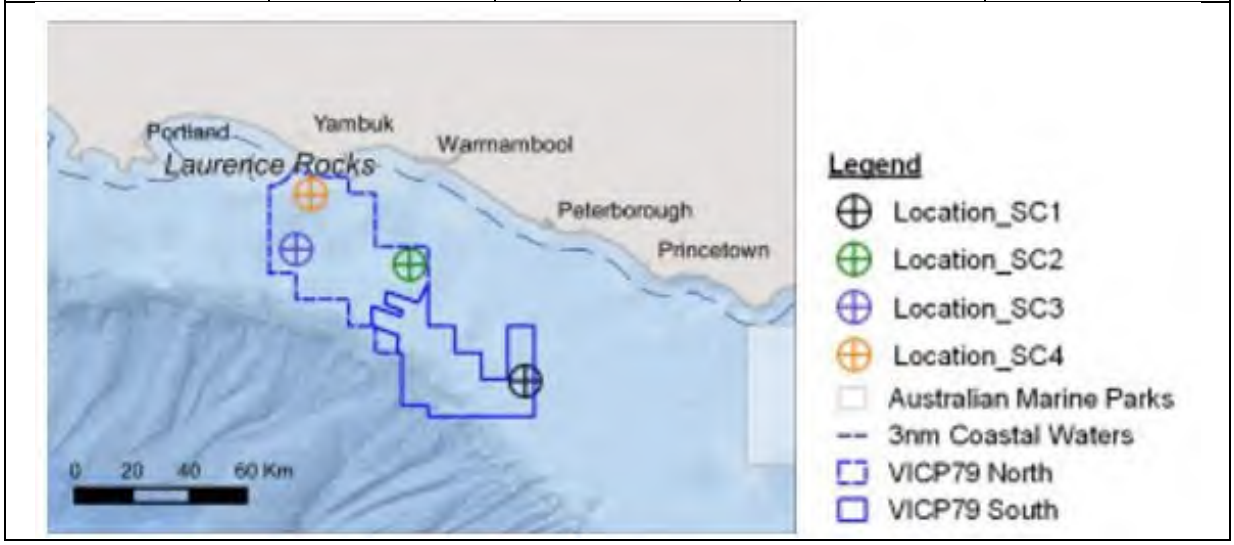


Table 9-2: VIC/P79 hydrocarbon release locations

Release Location	Name	Latitude	Longitude	Water Depth (m)
Location 1	Essington	39° 5′ 17.4″ S	142° 48′ 23.1″ E	93
Location 2	Regia	38° 43′ 20.6″ S	142° 26′ 35.3″ E	74
Location 3	Merope	38° 5′ 8.9″ S	142° 5′ 8.9″ E	66
Location 4	Julpha	38° 30′ 6.4″ S	142° 7′ 55.5″ E	45



Each permit area (T/49P and VIC/P79) and location combination have 2 scenarios which have been modelled for both summer and winter conditions, being:

- Scenario 1: Vessel Collision - 350m3 of MDO over 6 hours, surface release, and
- Scenario 2: Thylacine Condensate LOWC 139,000 m3 released over 90 days.

Figure 9-1 highlights how to navigate to the appropriate section in Appendix 1. By using this flowchart, resource summary estimations can be used to calculate response strategies and logistical requirements based on the type of hydrocarbon, permit area, and location.

The OPEP Appendix 1: IMT Capability Assessment Part E: Shoreline Resource Assessment provides further information regarding the resource calculator methodology, how to use it as a preparedness tool for resource estimate and factors for consideration.

As per Section 3, shoreline response will be under the control of the relevant state control agency with ConocoPhillips Australia providing equipment and personnel support as required.

Table 9-3 outlines the additional field personnel resourcing available to support a shoreline response. OPEP Appendix 1: IMT Capability Assessment Part F: Field Response Training Description provides role descriptions and training requirements for each of the resources listed.

Table 9-3: Field personnel resourcing and ability to scale

Agency	Operations Trained Personnel	Aerial Observers	OWR Trained Personnel	IMT Trained Personnel	Total
AMOSC Staff	16	6	3	6	16
AMOSC - Core Group	80 - 120	2	2	20 - 30	80 – 120
AMOSC – Industry (Mutual Aid)	180 - 200	12	80 - 100	400+	600+
Labour Hire Agencies	N/A	N/A	N/A	N/A	500+ (est)

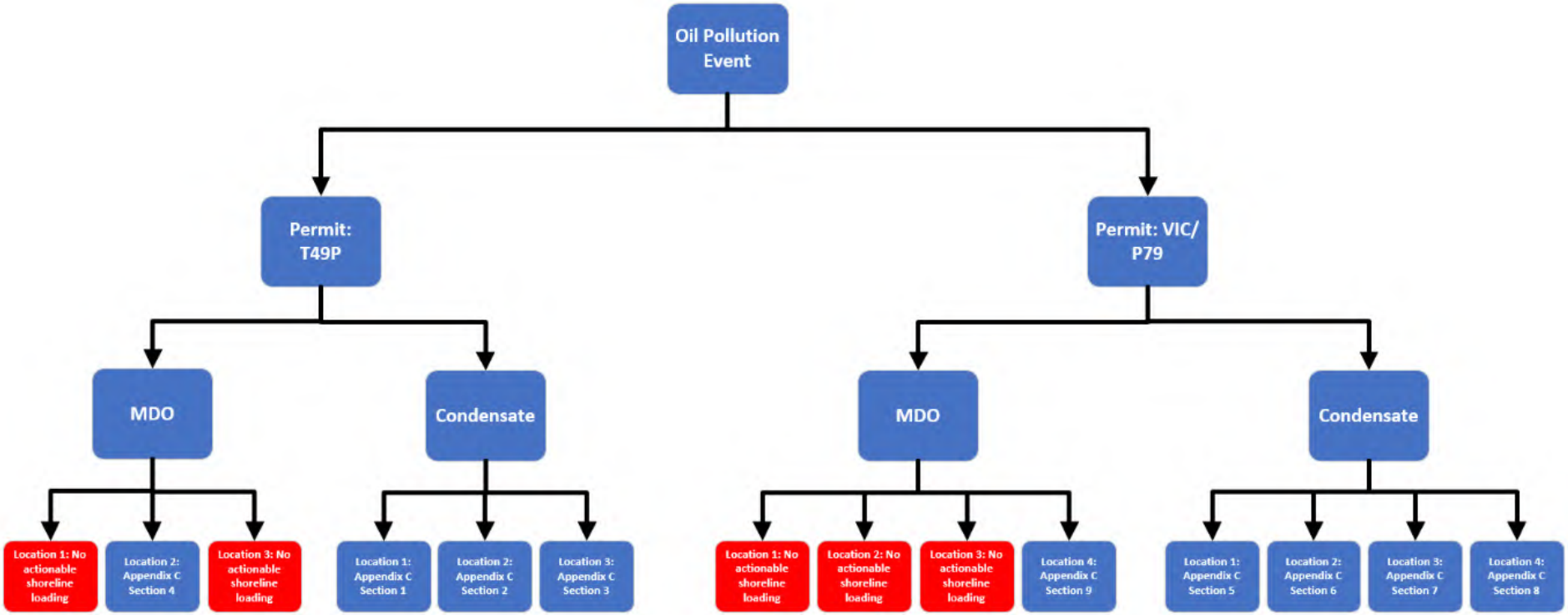


Figure 9-1: Resource summary location flowchart

Appendix 1: Shoreline Personnel and Equipment Assumptions

As per the OPEP Appendix 1: IMT Capability Assessment Part E: Shoreline Resource Assessment the following assumptions have been used to estimate the shoreline personnel and equipment resourcing.:

Personnel calculations are based on the following:

- Based on 14 day shifts of workers.
- Based on hydrocarbon stranding daily/Continuously.
- Based on 1 primary crew and a replacement crew in rotation.
- Based on Exxon Mobil Handbook for heavily oiled shorelines and resources required per km.
- Based on average of shoreline strategies for each shoreline type (See below for strategy %).

Manual Equipment based on the following

- Shovels – 1 per worker per week.
- Rakes – 1 per worker per week.
- Picks – 1 per worker per week.
- Plastic Bags – 50 per worker per day.
- Wheelbarrows – 1 per team (5 workers) per week.

Oil Spill Equipment based on the following:

The response calculator estimates major resource requirements for a given scenario. It does not, however, go into granular detail of all equipment required to mount an effective shoreline response. Personnel decontamination, boom ancillaries, anchor kits, waste management, oiled wildlife response equipment & temporary waste storage systems are just some of the equipment that the calculator does not estimate. This level of granularity is covered in detail under sections **8.4** to **8.14** and should be used as a definitive guide to setting up an effective shoreline response operation.

Resource calculation assumptions/limitations:

- Remoteness, travel time to/from work locations.
- Vessels, Lodging, Food.
- Collection/transport of waste.
- Logistical resources needed not currently factored.
- Rates for mechanical clean up are extremely variable.
- There are multiple variations for all techniques - these are generalized needs for planning purposes only.
- Assumed 8-hour workdays.
- Not all hydrocarbon comes ashore at once.
- Not all shoreline is cleaned at once.
- Some shorelines may be cleaned multiple times.

Strategy % employed per shoreline substrate type:

Manmade Structures

- Flooding – 10%
- HP, ambient water flushing – 60%
- Hot water flushing – 10%
- Natural recovery – 20%

Rocky Shores (Sheltered)

- Natural recovery – 100%

Rocky Platform / Cliff face (exposed)

- Natural recovery – 100%

Sand Beach (mixed sand/shell)

- Manual removal – light oil – 60%
- Manual removal – Heavy oil – 0%
- Flooding – 10%
- Mechanical removal – 0%
- Natural Recovery – 30%

Tidal Flat (mud/sands) and vegetative salt/brackish marsh

- LP, ambient water flushing – 30%
- Natural recovery – 70%

Shallow Seagrass

- Natural Recovery – 100%

Reefs

- Natural Recovery – 100%

Mangroves

- LP, Ambient water flushing – 20%
- Natural recovery – 80%

Other Assumptions

- Stochastic modelling was used as opposed to Deterministic modelling as it provides a greater probability of where hydrocarbon could potentially impact the shoreline in both, summer and winter seasons. The worst-case deterministic model for each scenario is included within the stochastic models for each scenario/location
- Shoreline with less than 10% probability of shoreline contact of >100gm/m^2 has not considered for shoreline clean up
- Shoreline with only 10gm/m^2 is not actionable.; the minimum actionable amount is 100gm/m^2

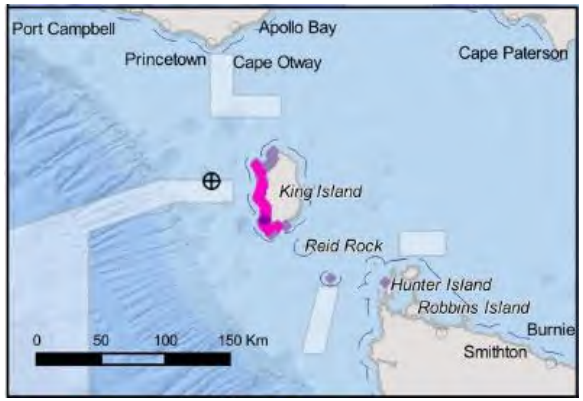
(Ref#1) T49P – MDO – Location 2

Modelling - MAQ1155J Xodus COP T49P MDO Oil Spill Modelling Rev0
Location 2 – T49P – Scenario 1
Summer - Sectors affected
King Island - Sector KI78 South to KI502
King Island - Sector KI448 down to SKI103
Winter - Sectors Affected
All NY Island
All Christmas Island
King Island - KI130 down to KI336

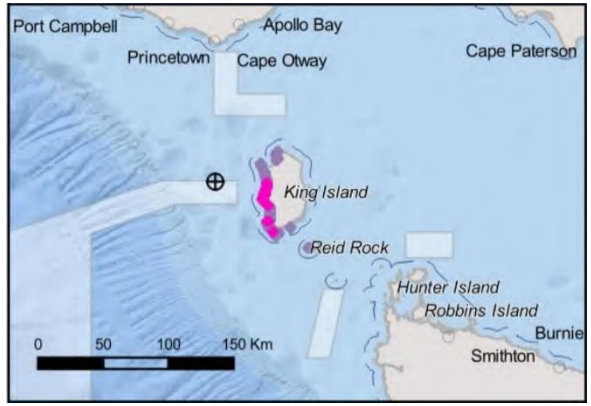
Summer Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	17.00	11.02
Rocky Shoreline	58.58	37.96
Artificial Shoreline	0.62	0.40
Cliffs	19.78	12.82
Pebble, Cobble or Boulder or Shoreline	3.28	2.13
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	0.17	0.11
Unclassified	0.56	0.36
Total	**100.00**	**64.80**

Winter Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	55.82	66.11
Rocky Shoreline	34.99	41.44
Artificial Shoreline	2.83	3.35
Cliffs	3.59	4.25
Pebble, Cobble or Boulder or Shoreline	1.92	2.27
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	0.87	1.02
Unclassified	0.00	0.00
Total	**100.00**	118.44

Summer



Winter



(Ref#1) T49P – MDO – Location 2: SUMMER

15% of total shoreline clean up in a day

Summer Resources Required

Total Oiled Shoreline (km)	64.8
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0.62
Rocky Shorelines (Sheltered)	58.58
Rocky Platform / Cliff Face (Exposed)	19.78
Sandy Beach (mixed sand/shell)	20.46
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0.56
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **10**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	2	4	4	4	4
Worker	16	34	34	34	34
Specialised Operators	0	2	2	2	2
Total People	**18**	**40**	**40**	**40**	**40**
Vehicles/Vessels					
ATV	1	1	1	1	1
Truck/Vehicle	1	1	1	1	1
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	0	0	0	0	0
Oil Spill Equipment					
Pump	0	0	0	0	0
Skimmer w/pump	0	0	0	0	0
Inshore Boom (m)	41	41	41	41	41
Sorbent Boom/snares (m)	41	41	41	41	41
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	6	6	6	6	6
Manual Equipment					
Shovels	24	48	96	144	192
Rakes	24	48	96	144	192
Picks	24	48	96	144	192
Plastic Bags	1193	2388	4776	7164	9552
Wheel Barrows	5	10	20	30	40

(Ref#1) T49P – MDO – Location 2: WINTER

15% of total shoreline cleanup in a day

Winter Resources Required

Total Oiled Shoreline (km)	118.44
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	2.83
Rocky Shorelines (Sheltered)	34.98
Rocky Platform / Cliff Face (Exposed)	3.59
Sandy Beach (mixed sand/shell)	58.6
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active cleanup strategies **51**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	9	18	18	18	18
Worker	88	176	176	176	176
Specialised Operators	2	4	4	4	4
Total People	**98**	**198**	**198**	**198**	**198**
Vehicles/Vessels					
ATV	6	6	6	6	6
Truck/Vehicle	7	7	7	7	7
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	1	1	1	1	1
Oil Spill Equipment					
Pump	2	2	2	2	2
Skimmer w/pump	1	1	1	1	1
Inshore Boom (m)	228	228	228	228	228
Sorbent Boom/snares (m)	228	228	228	228	228
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	1	1	1	1	1
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	33	33	33	33	33
Manual Equipment					
Shovels	125	250	500	750	1000
Rakes	125	250	500	750	1000
Picks	125	250	500	750	1000
Plastic Bags	6247	12494	24988	37482	49976
Wheel Barrows	25	50	100	150	200

(Ref#2) T/49P - Condensate – Location 1

Modelling - MAQ1155J Xodus COP T49P Oil Spill Modelling Final
Location 1 – T49P – Scenario 2
Summer - No Sectors affected > 10%
Winter - Sectors Affected
King Island (North) KI153 - KI161
King Island (South) - KI440 - KI451
South Gippsland (Waratah Bay & Wilsons Promontory West) CPL07 - WPS-05

Winter Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	84.77	78.31
Rocky Shoreline	4.52	4.17
Artificial Shoreline	0.00	0.00
Cliffs	2.04	1.89
Pebble, Cobble or Boulder or Shoreline	0.85	0.79
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	7.82	7.22
Unclassified	0.00	0.00
Total	**100.00**	**92.38**

Winter – King Island

Winter – South Gippsland

(Ref#2) T/49P - Condensate – Location 1: WINTER

15% of total shoreline clean up in a day

Winter Resources Required

Total Oiled Shoreline (km)	92.38
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0
Rocky Shorelines (Sheltered)	4.52
Rocky Platform / Cliff Face (Exposed)	2.04
Sandy Beach (mixed sand/shell)	93.44
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **60**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	10	22	22	22	22
Worker	104	208	208	208	208
Specialised Operators	1	4	4	4	4
Total People	**115**	**234**	**234**	**234**	**234**
Vehicles/Vessels					
ATV	8	8	8	8	8
Truck/Vehicle	8	8	8	8	8
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	1	1	1	1	1
Oil Spill Equipment					
Pump	3	3	3	3	3
Skimmer w/pump	1	1	1	1	1
Inshore Boom (m)	233	233	233	233	233
Sorbent Boom/snares (m)	233	233	233	233	233
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	39	39	39	39	39
Manual Equipment					
Shovels	155	312	624	936	1248
Rakes	155	312	624	936	1248
Picks	155	312	624	936	1248
Plastic Bags	7769	15538	31076	46614	62152
Wheel Barrows	31	64	128	192	256

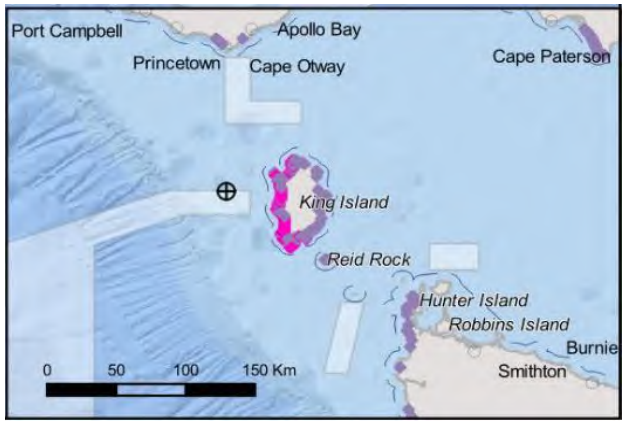
(Ref#3) T/49P - Condensate – Location 2

Modelling - MAQ1155J Xodus COP T49P Oil Spill Modelling Final
Location 2 – T49P – Scenario 2
Summer - Sectors affected
King Island (KI173 - KI01, KI526 - KI375, All SKI)
Christmas Island (all)
New Years Island (all)
Winter - Sectors Affected
King Island (KI173 - KI01, KI526 - KI 382, All SKI)
Christmas Island (all)
New Years Island (all)

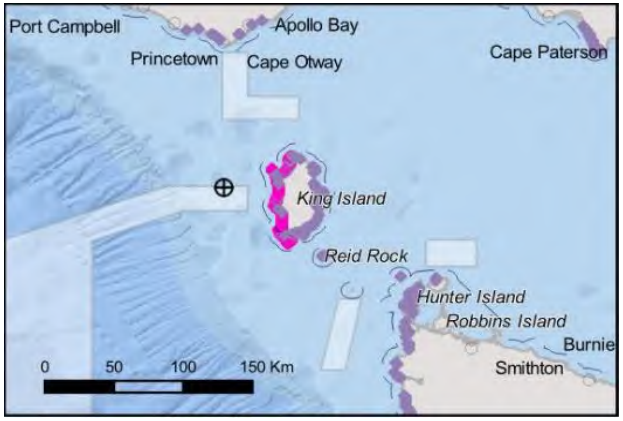
Summer Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	25.03	36.05
Rocky Shoreline	60.14	86.62
Artificial Shoreline	0.28	0.40
Cliffs	9.96	14.35
Pebble, Cobble or Boulder or Shoreline	4.26	6.14
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	0.08	0.11
Unclassified	0.25	0.36
Total	**100.00**	**144.04**

Winter Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	23.81	33.28
Rocky Shoreline	60.90	85.11
Artificial Shoreline	0.29	0.40
Cliffs	10.27	14.35
Pebble, Cobble or Boulder or Shoreline	4.39	6.14
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	0.08	0.11
Unclassified	0.26	0.36
Total	**100.00**	**139.76**

Summer



Winter



(Ref#3) T/49P - Condensate – Location 2: SUMMER

15% of total shoreline clean up in a day

Summer Resources Required

Total Oiled Shoreline (km)	144.04
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0.28
Rocky Shorelines (Sheltered)	60.14
Rocky Platform / Cliff Face (Exposed)	9.96
Sandy Beach (mixed sand/shell)	29.37
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0.25
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **30**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	5	12	12	12	12
Worker	51	104	104	104	104
Specialised Operators	1	2	2	2	2
Total People	**57**	**118**	**118**	**118**	**118**
Vehicles/Vessels					
ATV	4	4	4	4	4
Truck/Vehicle	4	4	4	4	4
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	1	1	1	1	1
Oil Spill Equipment					
Pump	1	1	1	1	1
Skimmer w/pump	1	1	1	1	1
Inshore Boom (m)	119	119	119	119	119
Sorbent Boom/snares (m)	119	119	119	119	119
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	19	19	19	19	19
Manual Equipment					
Shovels	76	154	308	462	616
Rakes	76	154	308	462	616
Picks	76	154	308	462	616
Plastic Bags	3807	7616	15232	22848	30464
Wheel Barrows	15	32	64	96	128

(Ref#3) T/49P - Condensate – Location 2: WINTER

15% of total shoreline clean up in a day

Winter Resources Required

Total Oiled Shoreline (km)	139.76
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0.29
Rocky Shorelines (Sheltered)	60.9
Rocky Platform / Cliff Face (Exposed)	10.27
Sandy Beach (mixed sand/shell)	28.28
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0.26
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **28**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	5	10	10	10	10
Worker	48	96	96	96	96
Specialised Operators	1	2	2	2	2
Total People	**53**	**108**	**108**	**108**	**108**
Vehicles/Vessels					
ATV	4	4	4	4	4
Truck/Vehicle	4	4	4	4	4
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	1	1	1	1	1
Oil Spill Equipment					
Pump	1	1	1	1	1
Skimmer w/pump	1	1	1	1	1
Inshore Boom (m)	112	112	112	112	112
Sorbent Boom/snares (m)	112	112	112	112	112
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	18	18	18	18	18
Manual Equipment					
Shovels	71	144	288	432	576
Rakes	71	144	288	432	576
Picks	71	144	288	432	576
Plastic Bags	3557	7116	14232	21348	28464
Wheel Barrows	14	30	60	90	120

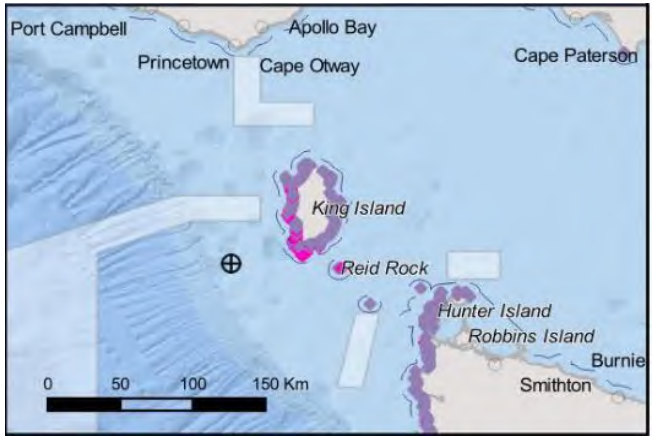
(Ref#4) T/49P - Condensate – Location 3

Modelling - MAQ1155J Xodus COP T49P Oil Spill Modelling Final
Location 3 – T49P – Scenario 2
Summer - Sectors affected
King Island (KI126 - KI01)
King Island (KI526 - KI375)
King Island (All SKI)
Winter - Sectors Affected
King Island (KI126 - KI01)
King Island (KI526 - KI375)
King Island (All SKI)

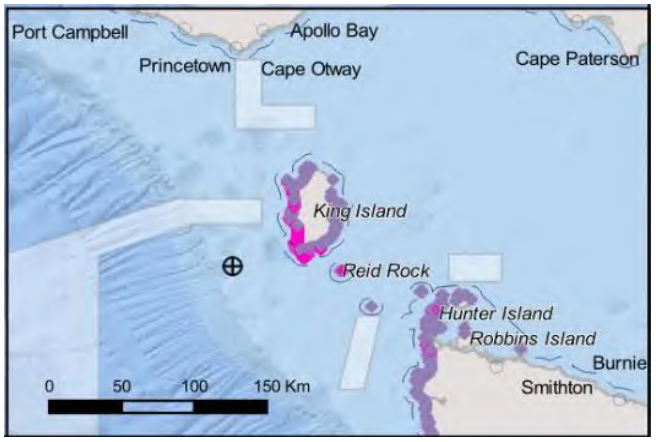
Summer Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	20.11	21.90
Rocky Shoreline	62.97	68.57
Artificial Shoreline	0.37	0.40
Cliffs	12.24	13.33
Pebble, Cobble or Boulder or Shoreline	3.87	4.21
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	0.10	0.11
Unclassified	0.33	0.36
Total	**100.00**	**108.89**

Winter Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	20.11	21.90
Rocky Shoreline	62.97	68.57
Artificial Shoreline	0.37	0.40
Cliffs	12.24	13.33
Pebble, Cobble or Boulder or Shoreline	3.87	4.21
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	0.10	0.11
Unclassified	0.33	0.36
Total	**100.00**	**108.89**

Summer



Winter



(Ref#4) T/49P - Condensate – Location 3: SUMMER

15% of total shoreline clean up in a day

Summer Resources Required

Total Oiled Shoreline (km)	108.89
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0.37
Rocky Shorelines (Sheltered)	62.97
Rocky Platform / Cliff Face (Exposed)	12.24
Sandy Beach (mixed sand/shell)	24.09
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0.33
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **19**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	3	8	8	8	8
Worker	32	66	66	66	66
Specialised Operators	0	2	2	2	2
Total People	**36**	**76**	**76**	**76**	**76**
Vehicles/Vessels					
ATV	2	2	2	2	2
Truck/Vehicle	2	2	2	2	2
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	0	0	0	0	0
Oil Spill Equipment					
Pump	1	1	1	1	1
Skimmer w/pump	0	0	0	0	0
Inshore Boom (m)	76	76	76	76	76
Sorbent Boom/snares (m)	76	76	76	76	76
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	12	12	12	12	12
Manual Equipment					
Shovels	47	96	192	288	384
Rakes	47	96	192	288	384
Picks	47	96	192	288	384
Plastic Bags	2361	4722	9444	14166	18888
Wheel Barrows	9	20	40	60	80

(Ref#4) T/49P - Condensate – Location 3: WINTER

15% of total shoreline clean up in a day

Winter Resources Required

Total Oiled Shoreline (km)	108.89
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0.37
Rocky Shorelines (Sheltered)	62.97
Rocky Platform / Cliff Face (Exposed)	12.24
Sandy Beach (mixed sand/shell)	24.09
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0.33
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **19**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	3	8	8	8	8
Worker	32	66	66	66	66
Specialised Operators	0	2	2	2	2
Total People	**36**	**76**	**76**	**76**	**76**
Vehicles/Vessels					
ATV	2	2	2	2	2
Truck/Vehicle	2	2	2	2	2
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	0	0	0	0	0
Oil Spill Equipment					
Pump	1	1	1	1	1
Skimmer w/pump	0	0	0	0	0
Inshore Boom (m)	76	76	76	76	76
Sorbent Boom/snares (m)	76	76	76	76	76
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	12	12	12	12	12
Manual Equipment					
Shovels	47	96	192	288	384
Rakes	47	96	192	288	384
Picks	47	96	192	288	384
Plastic Bags	2361	4722	9444	14166	18888
Wheel Barrows	9	20	40	60	80

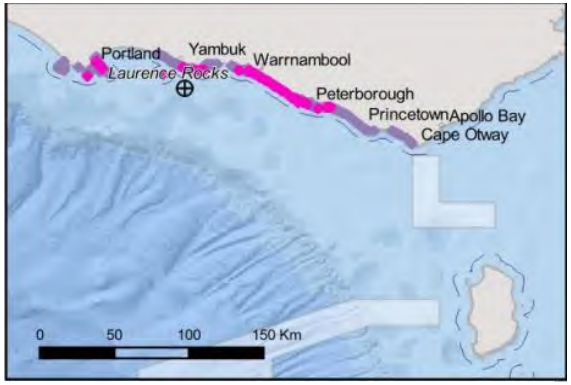
(Ref#5) – VIC/P79 – MDO – Location 4

Modelling - MAQ1203J Xodus COP VIC79 Oil Spill Modelling Rev0
Location 4 – VIC/P79 – Scenario 1
Summer - Sectors affected
Moyne (YBK-02 - PTF-10)
Moyne 2 (All)
Winter - Sectors Affected
Moyne (YBK-06 - CRM-07)
Moyne 2 (All)

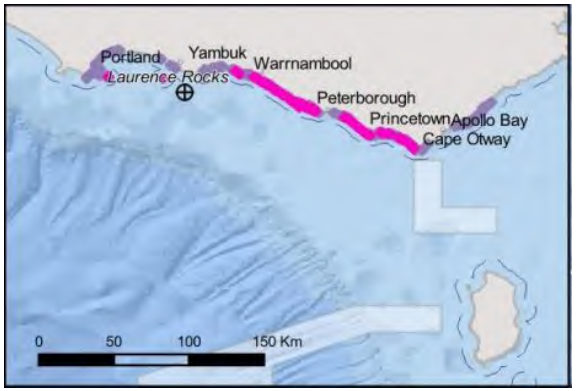
Summer Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	6.24	4.77
Rocky Shoreline	39.78	30.43
Artificial Shoreline	0.00	0.00
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	53.99	41.30
Unclassified	0.00	0.00
Total	**100.00**	**76.49**

Winter Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	16.07	10.62
Rocky Shoreline	26.45	17.49
Artificial Shoreline	0.00	0.00
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	57.48	38.00
Unclassified	0.00	0.00
Total	**100.00**	**66.10**

Summer



Winter



(Ref#5) – VIC/P79 – MDO – Location 4: SUMMER

15% of total shoreline clean up in a day

Summer Resources Required

Total Oiled Shoreline (km)	76.49
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0
Rocky Shorelines (Sheltered)	39.78
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	60.22
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **32**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	6	12	12	12	12
Worker	55	112	112	112	112
Specialised Operators	1	2	2	2	2
Total People	**61**	**126**	**126**	**126**	**126**
Vehicles/Vessels					
ATV	4	4	4	4	4
Truck/Vehicle	4	4	4	4	4
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	1	1	1	1	1
Oil Spill Equipment					
Pump	1	1	1	1	1
Skimmer w/pump	1	1	1	1	1
Inshore Boom (m)	124	124	124	124	124
Sorbent Boom/snares (m)	124	124	124	124	124
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	21	21	21	21	21
Manual Equipment					
Shovels	83	166	332	498	664
Rakes	83	166	332	498	664
Picks	83	166	332	498	664
Plastic Bags	4146	8292	16584	24876	33168
Wheel Barrows	17	34	68	102	136

(Ref#5) – VIC/P79 – MDO – Location 4: WINTER

15% of total shoreline clean up in a day

Winter Resources Required

Total Oiled Shoreline (km)	66.1
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0
Rocky Shorelines (Sheltered)	26.45
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	73.55
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **34**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	6	12	12	12	12
Worker	58	118	118	118	118
Specialised Operators	1	2	2	2	2
Total People	**65**	**132**	**132**	**132**	**132**
Vehicles/Vessels					
ATV	4	4	4	4	4
Truck/Vehicle	4	4	4	4	4
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	1	1	1	1	1
Oil Spill Equipment					
Pump	1	1	1	1	1
Skimmer w/pump	1	1	1	1	1
Inshore Boom (m)	131	131	131	131	131
Sorbent Boom/snares (m)	131	131	131	131	131
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	22	22	22	22	22
Manual Equipment					
Shovels	88	176	352	528	704
Rakes	88	176	352	528	704
Picks	88	176	352	528	704
Plastic Bags	4375	8752	17504	26256	35008
Wheel Barrows	18	36	72	108	144

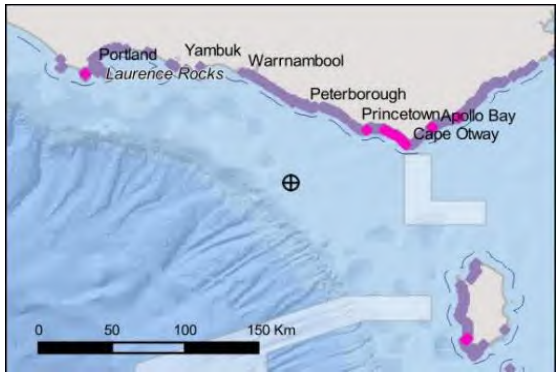
(Ref#6) VIC/P79 – Condensate – Location 1

Modelling - MAQ1203J Xodus COP VIC79 Oil Spill Modelling Rev0
Location 1 – VIC/P79 – Scenario 2
Summer - Sectors affected
Colac Otway LGA includes:
Cape Otway West LGA (All Sectors)
Apollo Bay LGA (PFL-01 - PFL-02, APB01 - APB-04)
Cape Paton LGA (GRR01 - GRR-04)
Winter - Sectors Affected
Colac Otway (Cape Otway West LGA, Cape Patton & Lorne LGA)
King Island (Sectors KI517 - KI443)
South Gippsland (Waratah Bay LGA, Wilsons Prom West LGA)

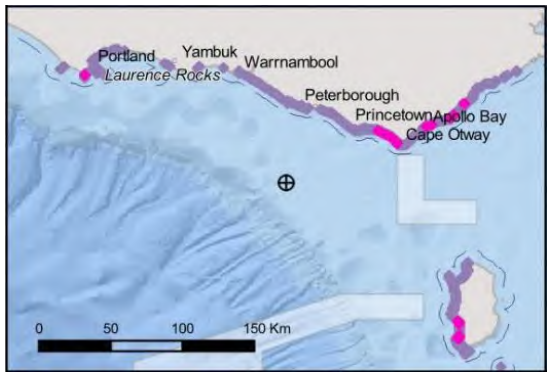
Summer Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	6.75	3.25
Rocky Shoreline	40.32	19.42
Artificial Shoreline	0.52	0.25
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	52.41	25.24
Unclassified	0.00	0.00
Total	**100.00**	**48.15**

Winter Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	36.49	94.58
Rocky Shoreline	45.37	117.57
Artificial Shoreline	0.00	0.00
Cliffs	0.65	1.67
Pebble, Cobble or Boulder or Shoreline	0.41	1.06
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	17.08	44.27
Unclassified	0.00	0.00
Total	**100.00**	**259.15**

Summer



Winter



(Ref#6) VIC/P79 – Condensate – Location 1: SUMMER

15% of total shoreline clean up in a day

Summer Resources Required

Total Oiled Shoreline (km)	48.15
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0.52
Rocky Shorelines (Sheltered)	40.32
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	59.16
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **20**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	3	8	8	8	8
Worker	35	70	70	70	70
Specialised Operators	0	2	2	2	2
Total People	**38**	**80**	**80**	**80**	**80**
Vehicles/Vessels					
ATV	3	3	3	3	3
Truck/Vehicle	3	3	3	3	3
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	0	0	0	0	0
Oil Spill Equipment					
Pump	1	1	1	1	1
Skimmer w/pump	0	0	0	0	0
Inshore Boom (m)	80	80	80	80	80
Sorbent Boom/snares (m)	80	80	80	80	80
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	13	13	13	13	13
Manual Equipment					
Shovels	51	104	208	312	416
Rakes	51	104	208	312	416
Picks	51	104	208	312	416
Plastic Bags	2564	5128	10256	15384	20512
Wheel Barrows	10	22	44	66	88

(Ref#6) VIC/P79 – Condensate – Location 1: WINTER

15% of total shoreline clean up in a day

Winter Resources Required

Total Oiled Shoreline (km)	259.15
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0
Rocky Shorelines (Sheltered)	45.37
Rocky Platform / Cliff Face (Exposed)	0.65
Sandy Beach (mixed sand/shell)	53.98
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **98**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	17	34	34	34	34
Worker	168	336	336	336	336
Specialised Operators	2	6	6	6	6
Total People	**187**	**376**	**376**	**376**	**376**
Vehicles/Vessels					
ATV	13	13	13	13	13
Truck/Vehicle	13	13	13	13	13
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	2	2	2	2	2
Oil Spill Equipment					
Pump	4	4	4	4	4
Skimmer w/pump	2	2	2	2	2
Inshore Boom (m)	378	378	378	378	378
Sorbent Boom/snares (m)	378	378	378	378	378
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	63	63	63	63	63
Manual Equipment					
Shovels	252	504	1008	1512	2016
Rakes	252	504	1008	1512	2016
Picks	252	504	1008	1512	2016
Plastic Bags	12590	25182	50364	75546	100728
Wheel Barrows	50	102	204	306	408

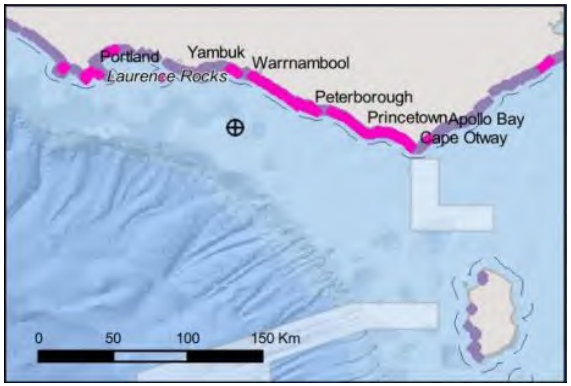
(Ref#7) VIC/P79 – Condensate – Location 2

Modelling - MAQ1203J Xodus COP VIC79 Oil Spill Modelling Rev0
Location 2 – VIC/P79 – Scenario 2
Summer - Sectors affected
Moyne (Sectors CRM-04 - PTF-10)
Warrnambool (WNB-09 - WNB-05)
Moyne 2 (All)
Corangamite (PCB-03 - CVN-02)
Colac Otway (CVN-02 - COW-01)
Winter - Sectors Affected
Moyne (CRM-05 - WNB-09)
Warrnambool (All)
Moyne 2 (All)
Corangamite (All)
Colac Otway (CVN-02 - PLW-01)

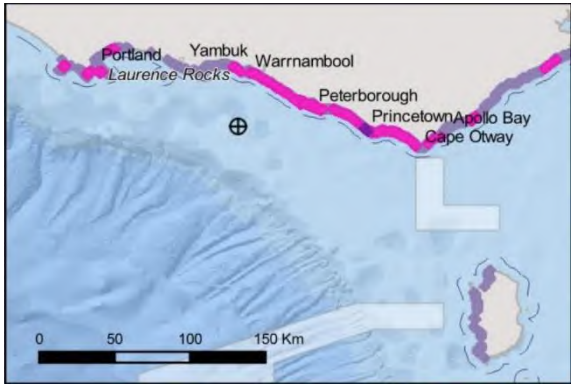
Summer Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	5.74	8.80
Rocky Shoreline	46.54	71.39
Artificial Shoreline	0.00	0.00
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	47.72	73.19
Unclassified	0.00	0.00
Total	**100.00**	**153.38**

Winter Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	13.20	29.35
Rocky Shoreline	43.90	97.61
Artificial Shoreline	0.00	0.00
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	42.90	95.38
Unclassified	0.00	0.00
Total	**100.00**	**222.34**

Summer



Winter



(Ref#7) VIC/P79 – Condensate – Location 2: SUMMER

15% of total shoreline clean up in a day

Summer Resources Required

Total Oiled Shoreline (km)	153.38
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0
Rocky Shorelines (Sheltered)	46.54
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	53.46
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **57**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	10	20	20	20	20
Worker	98	198	198	198	198
Specialised Operators	1	4	4	4	4
Total People	**109**	**222**	**222**	**222**	**222**
Vehicles/Vessels					
ATV	7	7	7	7	7
Truck/Vehicle	7	7	7	7	7
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	1	1	1	1	1
Oil Spill Equipment					
Pump	2	2	2	2	2
Skimmer w/pump	1	1	1	1	1
Inshore Boom (m)	221	221	221	221	221
Sorbent Boom/snares (m)	221	221	221	221	221
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	37	37	37	37	37
Manual Equipment					
Shovels	148	296	592	888	1184
Rakes	148	296	592	888	1184
Picks	148	296	592	888	1184
Plastic Bags	7380	14760	29520	44280	59040
Wheel Barrows	30	60	120	180	240

(Ref#7) VIC/P79 – Condensate – Location 2: WINTER

15% of total shoreline clean up in a day

Winter Resources Required

Total Oiled Shoreline (km)	222.34
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	0
Rocky Shorelines (Sheltered)	43.9
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	56.1
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **87**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	15	30	30	30	30
Worker	150	300	300	300	300
Specialised Operators	2	4	4	4	4
Total People	**167**	**334**	**334**	**334**	**334**
Vehicles/Vessels					
ATV	11	11	11	11	11
Truck/Vehicle	11	11	11	11	11
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	2	2	2	2	2
Oil Spill Equipment					
Pump	4	4	4	4	4
Skimmer w/pump	2	2	2	2	2
Inshore Boom (m)	337	337	337	337	337
Sorbent Boom/snares (m)	337	337	337	337	337
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	0	0	0	0	0
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	56	56	56	56	56
Manual Equipment					
Shovels	225	450	900	1350	1800
Rakes	225	450	900	1350	1800
Picks	225	450	900	1350	1800
Plastic Bags	11226	22452	44904	67356	89808
Wheel Barrows	45	90	180	270	360

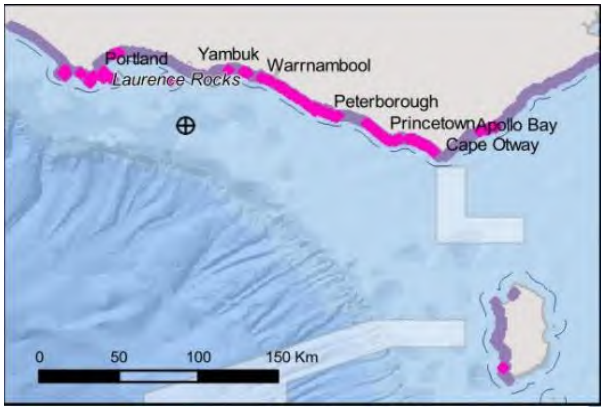
(Ref#8) VIC/P79 – Condensate – Location 3

Modelling - MAQ1203J Xodus COP VIC79 Oil Spill Modelling Rev0
Location 3 – VIC/P79 – Scenario 2
Summer - Sectors affected
Glenelg
Moyne
Moyne 2 (All)
Corangamite
Colac Otway
Winter - Sectors Affected
Glenelg
Moyne
Warrnambool
Moyne 2 (All)
Corangamite
Colac Otway

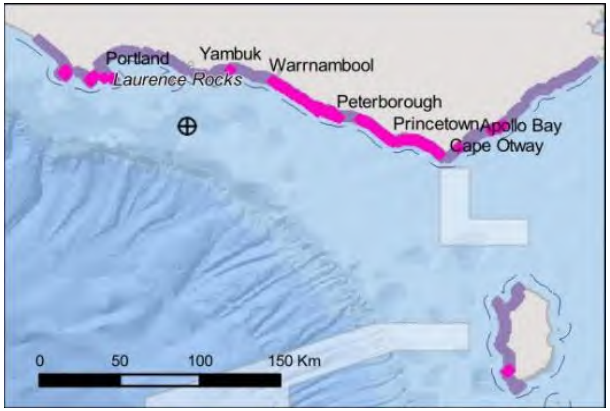
Summer Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	15.57	42.69
Rocky Shoreline	38.38	105.22
Artificial Shoreline	3.62	9.91
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	42.43	116.30
Unclassified	0.00	0.00
Total	**100.00**	**274.12**

Winter Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	7.74	16.00
Rocky Shoreline	46.26	95.66
Artificial Shoreline	1.50	3.11
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	44.50	92.01
Unclassified	0.00	0.00
Total	**100.00**	**206.78**

Summer



Winter



(Ref#8) VIC/P79 – Condensate – Location 3: SUMMER

15% of total shoreline clean up in a day

Summer Resources Required

Total Oiled Shoreline (km)	274.12
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	3.62
Rocky Shorelines (Sheltered)	38.38
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	58
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **119**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	20	42	42	42	42
Worker	204	410	410	410	410
Specialised Operators	4	10	10	10	10
Total People	**229**	**462**	**462**	**462**	**462**
Vehicles/Vessels					
ATV	14	14	14	14	14
Truck/Vehicle	15	15	15	15	15
Vac Truck	1	1	1	1	1
Tank Truck	1	1	1	1	1
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	3	3	3	3	3
Oil Spill Equipment					
Pump	6	6	6	6	6
Skimmer w/pump	4	4	4	4	4
Inshore Boom (m)	550	550	550	550	550
Sorbent Boom/snares (m)	550	550	550	550	550
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	3	3	3	3	3
Steam Cleaner	1	1	1	1	1
Shoreline flushing pipe length (m)	76	76	76	76	76
Manual Equipment					
Shovels	286	574	1148	1722	2296
Rakes	286	574	1148	1722	2296
Picks	286	574	1148	1722	2296
Plastic Bags	14309	28620	57240	85860	114480
Wheel Barrows	57	116	232	348	464

(Ref#8) VIC/P79 – Condensate – Location 3: WINTER

15% of total shoreline clean up in a day

Winter Resources Required

Total Oiled Shoreline (km)	206.78
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	1.5
Rocky Shorelines (Sheltered)	46.26
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	52.24
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **78**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	13	28	28	28	28
Worker	134	268	268	268	268
Specialised Operators	2	6	6	6	6
Total People	**149**	**302**	**302**	**302**	**302**
Vehicles/Vessels					
ATV	10	10	10	10	10
Truck/Vehicle	10	10	10	10	10
Vac Truck	0	0	0	0	0
Tank Truck	0	0	0	0	0
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	2	2	2	2	2
Oil Spill Equipment					
Pump	4	4	4	4	4
Skimmer w/pump	2	2	2	2	2
Inshore Boom (m)	329	329	329	329	329
Sorbent Boom/snares (m)	329	329	329	329	329
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	1	1	1	1	1
Steam Cleaner	0	0	0	0	0
Shoreline flushing pipe length (m)	50	50	50	50	50
Manual Equipment					
Shovels	194	390	780	1170	1560
Rakes	194	390	780	1170	1560
Picks	194	390	780	1170	1560
Plastic Bags	9722	19444	38888	58332	77776
Wheel Barrows	39	78	156	234	312

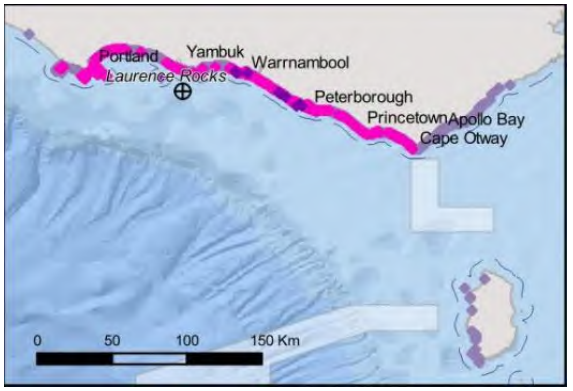
(Ref#9) VIC/P79 – Condensate – Location 4

Modelling - MAQ1203J Xodus COP VIC79 Oil Spill Modelling Rev0
Location 4 – VIC/P79 – Scenario 2
Summer - Sectors affected
Glenelg (All)
Moyne (All)
Warrnambool (All)
Moyne 2 LGA (All)
Lady Julia Percy Islands (All)
Laurence Rocks (All)
Corangamite (All)
Colac Otway (CVN-02 - PFL-02)
Winter - Sectors Affected
Glenelg (All)
Moyne (All)
Warrnambool (All)
Moyne 2 (All)
Lady Julia Percy Islands (All)
Laurence Rocks (All)
Corangamite (All)
Colac Otway (CVN-02 - PFL-02)
South Gippsland (VEB-13 - CPL-10, WPW-04 - WPS-17)

Summer

Summer Shoreline breakdown	%	Length (km)
Sandy Beach or Shoreline	31.93	128.23
Rocky Shoreline	33.88	136.09
Artificial Shoreline	2.47	9.91
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	31.72	127.42
Unclassified	0.00	0.00
Total	**100.00**	**401.66**
Winter Shoreline breakdown	**%**	**Length (km)**
Sandy Beach or Shoreline	28.19	142.11
Rocky Shoreline	41.89	211.19
Artificial Shoreline	1.97	9.91
Cliffs	0.00	0.00
Pebble, Cobble or Boulder or Shoreline	0.00	0.00
Mixed Sandy and Pebble, cobble or boulder, beach or shoreline	27.95	140.92
Unclassified	0.00	0.00
Total	**100.00**	**504.13**

Winter



(Ref#9) VIC/P79 – Condensate – Location 4: SUMMER

15% of total shoreline clean up in a day

Summer Resources Required

Total Oiled Shoreline (km)	401.66
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	2.47
Rocky Shorelines (Sheltered)	33.88
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	63.65
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **187**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	32	66	66	66	66
Worker	320	642	642	642	642
Specialised Operators	6	12	12	12	12
Total People	**358**	**720**	**720**	**720**	**720**
Vehicles/Vessels					
ATV	23	23	23	23	23
Truck/Vehicle	24	24	24	24	24
Vac Truck	1	1	1	1	1
Tank Truck	1	1	1	1	1
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	4	4	4	4	4
Oil Spill Equipment					
Pump	9	9	9	9	9
Skimmer w/pump	5	5	5	5	5
Inshore Boom (m)	811	811	811	811	811
Sorbent Boom/snares (m)	811	811	811	811	811
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	3	3	3	3	3
Steam Cleaner	1	1	1	1	1
Shoreline flushing pipe length (m)	120	120	120	120	120
Manual Equipment					
Shovels	460	922	1844	2766	3688
Rakes	460	922	1844	2766	3688
Picks	460	922	1844	2766	3688
Plastic Bags	23009	46020	92040	138060	184080
Wheel Barrows	92	186	372	558	744

(Ref#9) VIC/P79 – Condensate – Location 4: WINTER

15% of total shoreline clean up in a day

Winter Resources Required

Total Oiled Shoreline (km)	504.13
% of shoreline cleaned in 1 day.	15

Shoreline Type	**%**
Manmade Structures	1.97
Rocky Shorelines (Sheltered)	41.89
Rocky Platform / Cliff Face (Exposed)	0
Sandy Beach (mixed sand/shell)	56.14
Tidal Flats (Mud/Sand) and Vegetative salt/Brackish Marsh	0
Shallow Seagrass	0
Reef	0
Mangroves	0
Unclassified	0
Shoreline Total	100.00%

Total Shoreline length with active clean up strategies **206**

Resources Needed					
Personnel	**14 days**	**28 days**	**56 days**	**84 days**	**112 days**
Foreman	35	72	72	72	72
Worker	353	708	708	708	708
Specialised Operators	6	14	14	14	14
Total People	**395**	**794**	**794**	**794**	**794**
Vehicles/Vessels					
ATV	25	25	25	25	25
Truck/Vehicle	26	26	26	26	26
Vac Truck	1	1	1	1	1
Tank Truck	1	1	1	1	1
Front End Loader/Dozer	0	0	0	0	0
Scraper/Grader	0	0	0	0	0
Dump Truck	0	0	0	0	0
Landing Craft/Barge	4	4	4	4	4
Oil Spill Equipment					
Pump	10	10	10	10	10
Skimmer w/pump	5	5	5	5	5
Inshore Boom (m)	885	885	885	885	885
Sorbent Boom/snares (m)	885	885	885	885	885
Washing Unit (Low Pressure)	0	0	0	0	0
Pressure Washer	3	3	3	3	3
Steam Cleaner	1	1	1	1	1
Shoreline flushing pipe length (m)	132	132	132	132	132
Manual Equipment					
Shovels	509	1020	2040	3060	4080
Rakes	509	1020	2040	3060	4080
Picks	509	1020	2040	3060	4080
Plastic Bags	25472	50944	101888	152832	203776
Wheel Barrows	102	204	408	612	816

Appendix 2: Shoreline Treatment Recommendation Guides

This section provides Shoreline Treatment Recommendations (STRs) for generic shoreline types. It offers operational guidance on preferred techniques and outlines the constraints associated with their implementation. This section is relevant for shoreline that has or is soon to be impacted by oil, and where the site is not covered by a Primary or Secondary Shoreline Tactical Response Plan.

The primary objective of shoreline clean-up is to restore normal usage of the area by removing oil where possible and enhancing natural recovery of shoreline resources. Shoreline clean-up is usually carried out in three stages:

- **Stage 1:** Collection of floating oil and heavily contaminated beach material.
- **Stage 2:** Removal of stranded oil and moderately oiled beach materials.
- **Stage 3:** Final clean-up of lightly contaminated shorelines and removal of oily stains.

Shoreline clean-up needs to be carried out in accordance with a clear strategy that takes account of the characteristics of the oil, the level of contamination, the difficulty of access, the safety of clean-up crews and the relative environmental, economic and amenity sensitivities of different locations.

Figure A1-1 outlines the process to follow when using the Shoreline Treatment Recommendation Guide.

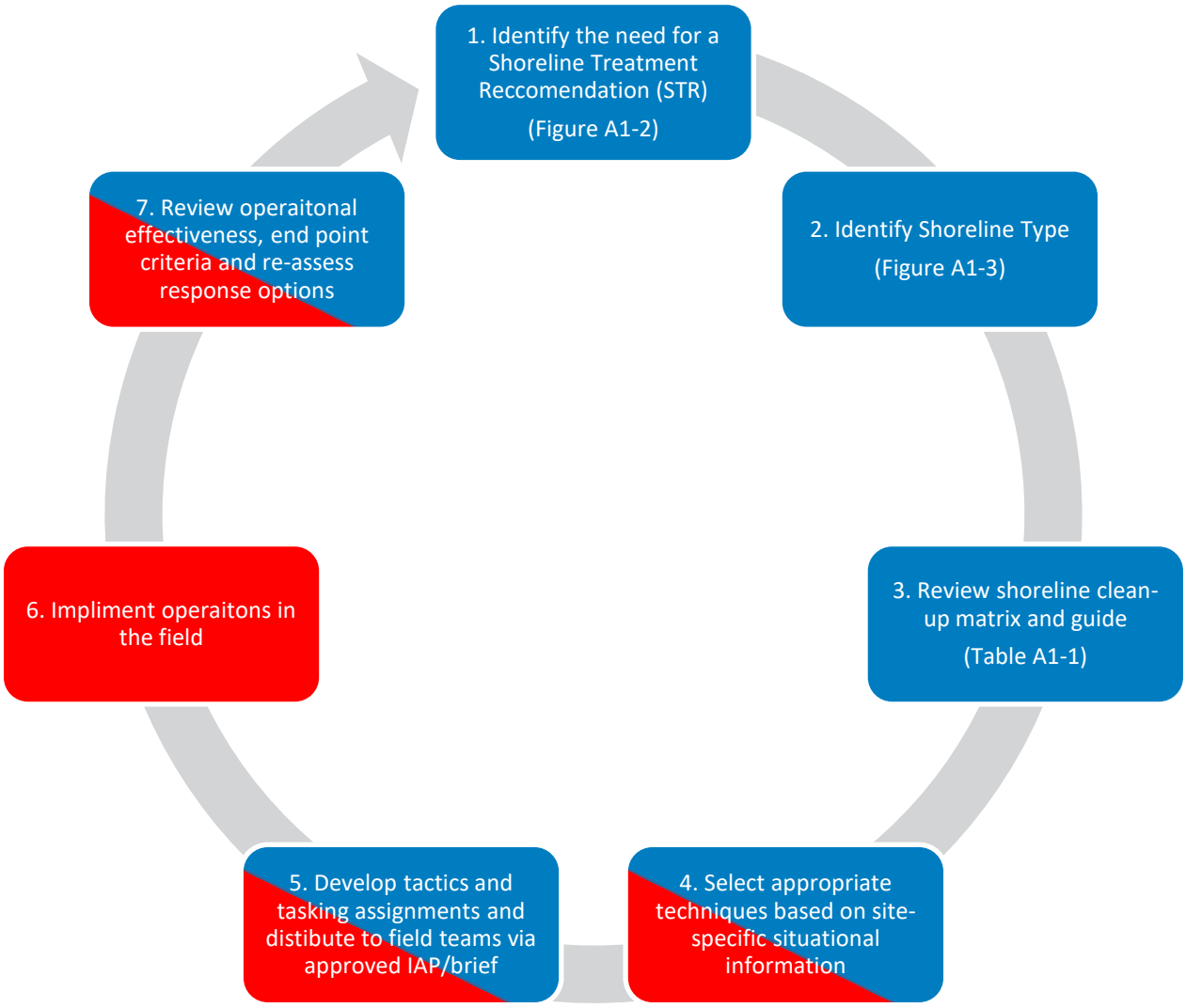


Figure A1-1: Shoreline treatment process

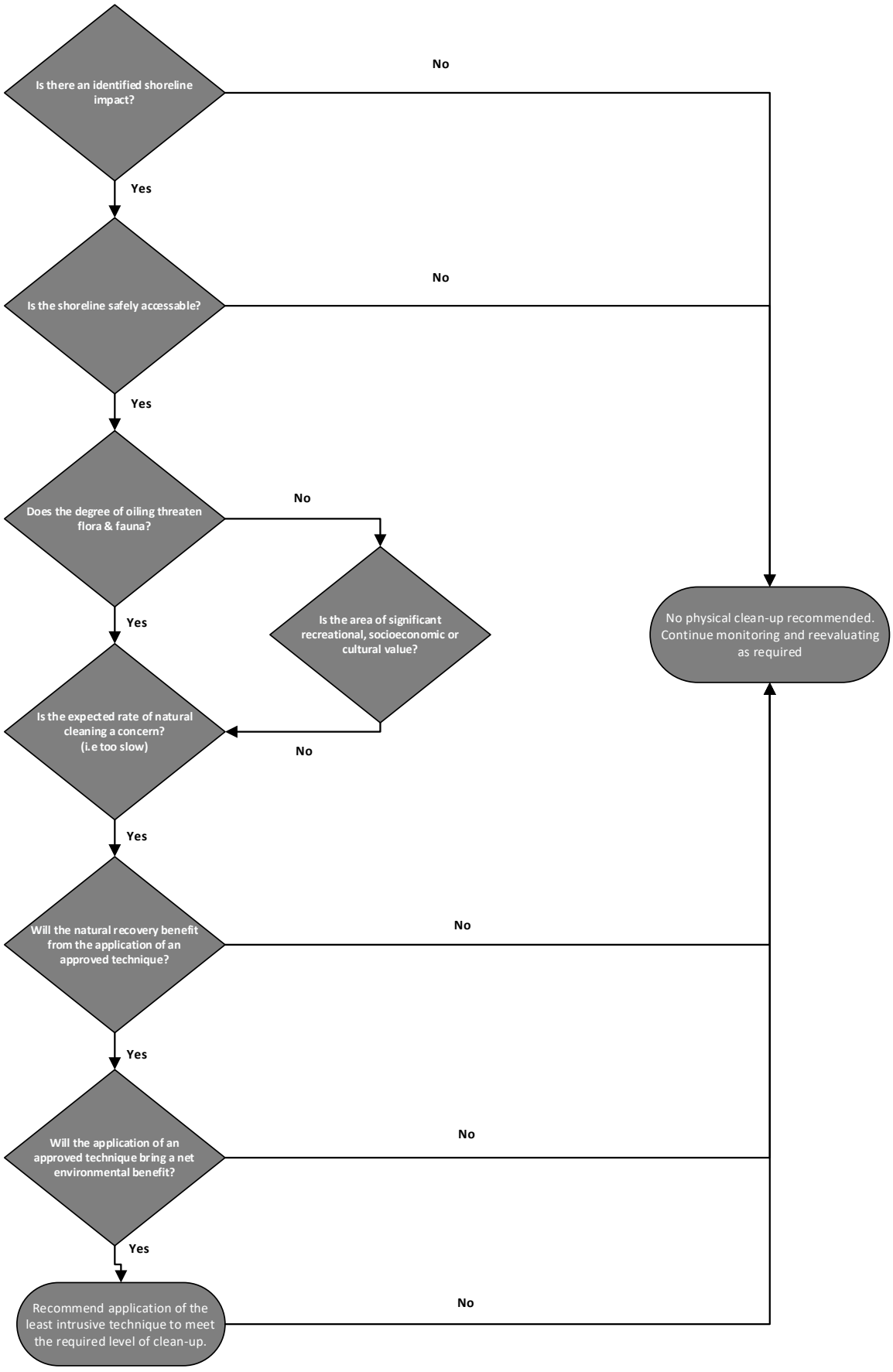


Figure A1-2: Shoreline treatment plan recommendation flowchart

Step 2: Choose shoreline type

Eight (8) shoreline types have been identified along the coastlines of the LGAs, as outline in Figure A1-3.

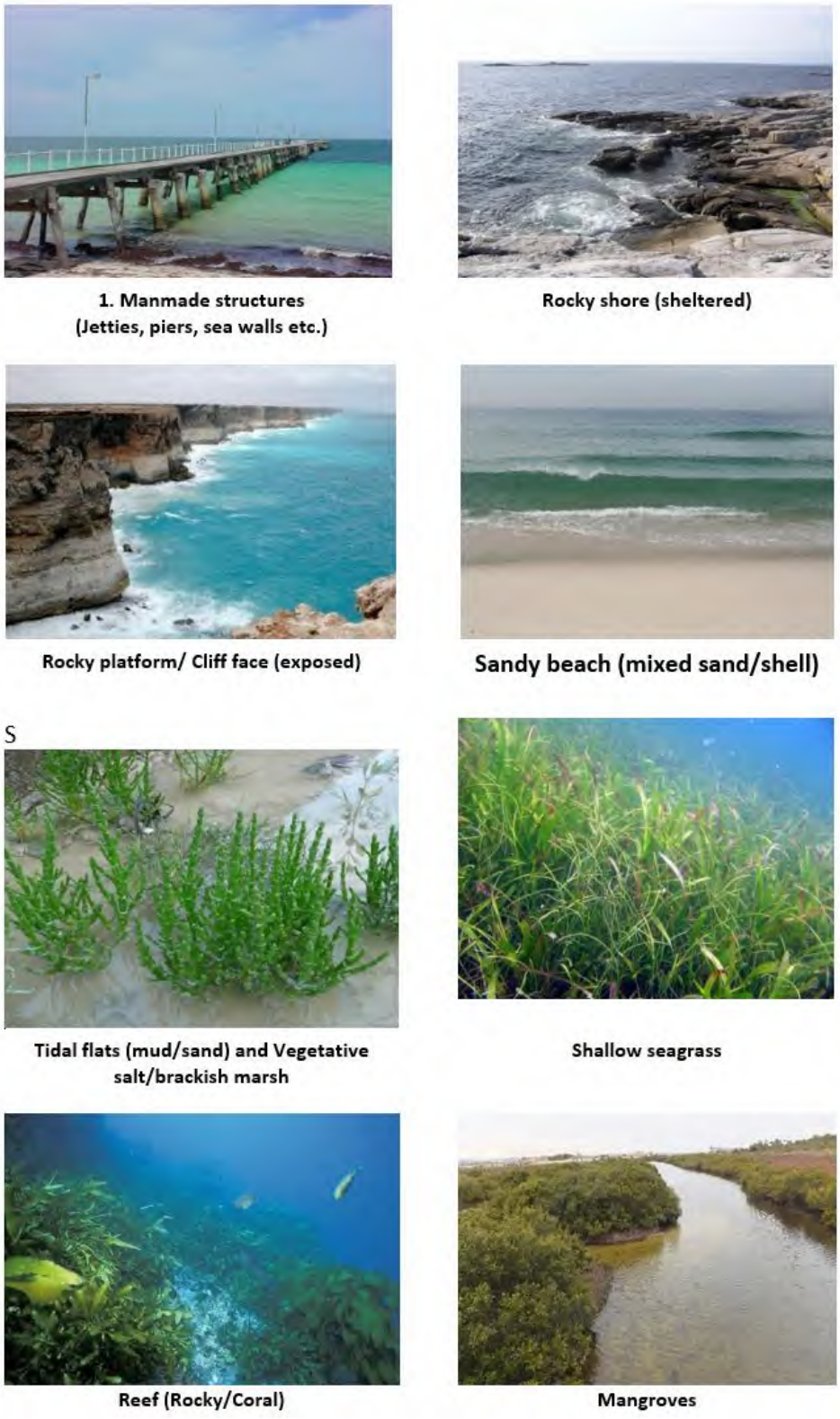


Figure A1-3: Shoreline types

Step 3: . Review shoreline clean-up technique matrix (Table A1-1) and guide

The following matrix outlines the shoreline types present and the shoreline clean-up techniques available for shoreline response.

A three-tiered criteria has been used to identify preferred and possible techniques and those to avoid to minimise secondary damage to the shoreline.

Table A1-1: Shoreline clean-up technique matrix

	Manmade structures (Jetties, piers, sea walls etc.)	Rocky shore (sheltered)	Rocky platform/ Cliff face (exposed)	Sandy beach (mixed sand/shell)	Tidal flats (mud/sand) and Vegetative salt/brackish marsh	Shallow seagrass	Reef (rocky/coral)	Mangroves
Natural Recovery								
Manual Oil Removal								
Mechanical Oil Removal								
Barrier (Onshore/Nearshore boom)								
Sorbents								
Vacuum								
Sediment Tiling								
Debris Removal								
Vegetation Removal								
Low-Pressure, Ambient-Water Flushing								
High-Pressure, Ambient-Water Flushing								
Hot-Water Flushing								
Chemical Dispersants								

Preferred **Possible** **Avoid**

Recommended shoreline treatments are described below.

Table A1-1a: Shoreline treatment recommendation – Manmade structures

Oiled Areas for Treatment: **Description:** • Solid, man-made structures such as seawalls, groynes, piers, jetties, port facilities and residential marinas. • Constructed of concrete, wood, or metal. • Built to protect the shore from erosion by waves, boat wakes, and currents. **Predicted Oil Behaviour** • Both MDO and Condensate are Class I/II hydrocarbons • Class I/II hydrocarbons spread rapidly, disperse, and evaporate quickly. • Gas Condensate is predicted once weathered to leave a waxy substance that will require manual removal. For detailed oil behaviour see OPEP page 17.	

Clean up Recommendations:

Tactical: Where appropriate, the following response strategies are recommended.		
Natural Recovery		Allow tidal action to flush stranded hydrocarbon off the structure. The spilt hydrocarbon will continue to weather, degrading and gradually reducing in volume and toxicity. Natural recovery is appropriate in situations where alternative clean up techniques would cause more harm than benefit, or where access is restricted.
Sorbents		Sorbent material (boom, pads, snares) may be placed on the floating Hydrocarbon or water surface, allowing it to absorb or can be used to wipe or dab stranded Hydrocarbon. Recovery of all sorbent material is mandatory. Sorbent materials must be placed and removed carefully to minimise disturbance to the surrounding area. Likewise, they must be carefully monitored to prevent entanglement.
Vacuum		Vacuuming can be used to remove pooled and/or surface oil from impacted structures. Vacuum equipment ranges from small portable units to large vacuum trucks.
High-Pressure, Ambient-Water Flushing		High -pressure, ambient-temperature flushing can be used to flush trapped oil out to open water for collection using booms and sorbents. Considerations should be given to tidal currents (flush on a falling tide) and wind (an onshore wind will push any released hydrocarbon back onto the structure).
People and Resources: Personnel and resource requirements should be assessed on a case-by-case basis.		

Staging and/or Logistics Constraints/Waste Issues:

- Access to these sites should be easily available due to being manmade.
- Mobile Phone coverage may be limited in remote areas, a contingency with a Satellite Phone should be scoped prior to deployment to site.
- Sorbents will create larger volumes of waste and a higher contamination risk; this should be considered within the Waste Plan for any response.

Ecological Concerns:

A NEBA or SIMA should be undertaken to ensure the most appropriate response options and any sensitivities are identified.

Cultural/Historical Concerns:

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Risk assessments should be conducted for each individual site with site safety plans and a Job Safety Analysis undertaken prior to commencement of response activity.

Table A1-1b: Shoreline treatment recommendation – Rocky shore (sheltered)

Oiled Areas for Treatment:

Description:

- Rocky substrate that varies widely in permeability.
- Some sediment accumulation may occur on the bedrock surface in particularly sheltered areas.
- Species density and diversity vary greatly, tidal zonation may be present.

Predicted Oil Behaviour

- Both MDO and Condensate are Class I/II hydrocarbons
- Class I/II hydrocarbons spread rapidly, disperse, and evaporate quickly.
- Gas Condensate is predicted once weathered to leave a waxy substance that will require manual removal.

For detailed oil behaviour see OPEP page 17.

Clean up Recommendations:

Tactical: Where appropriate, the following response strategies are recommended.

Natural Recovery		Allow tidal action to flush stranded hydrocarbon off the rocky shore. The spilt hydrocarbon will continue to weather, degrading and gradually reducing in volume and toxicity. Natural recovery is appropriate in situations where alternative clean up techniques would cause more harm than benefit, or where access is restricted.

People and Resources:

Personnel and resource requirements should be assessed on a case-by-case basis.

Staging and/or Logistics Constraints/Waste Issues:

- Access will be dependent on location, with natural recovery being the preferred response strategy the use of vessel or aviation observations is recommended.
- Mobile Phone coverage may be limited in remote areas, a contingency with a Satellite Phone should be scoped prior to deployment to site.

Ecological Concerns:

A NEBA or SIMA should be undertaken to ensure the most appropriate response options and any sensitivities are identified.

Cultural/Historical Concerns:

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Risk assessments should be conducted for each individual site with site safety plans and a Job Safety Analysis undertaken prior to commencement of response activity.

Table A1-1c: Shoreline treatment recommendation – Rocky platform/cliff face

Oiled Areas for Treatment: **Description:** • The intertidal zone is steep and narrow. • Sediment accumulation is uncommon. • Access to these areas is highly restricted and dangerous. • Often strong vertical zonation of biological communities, which vary in density and diversity. **Predicted Oil Behaviour** • Both MDO and Condensate are Class I/II hydrocarbons • Class I/II hydrocarbons spread rapidly, disperse, and evaporate quickly. • Gas Condensate is predicted once weathered to leave a waxy substance that will require manual removal. For detailed oil behaviour see OPEP page 17.	

Clean up Recommendations:

Tactical: The following response strategy is recommended.		
Natural Recovery		Allow tidal action to flush stranded hydrocarbon off the platform or cliff face. The spilt hydrocarbon will continue to weather, degrading and gradually reducing in volume and toxicity. Natural recovery is appropriate in situations where alternative clean up techniques would cause more harm than benefit, or where access is restricted.
People and Resources: Personnel requirements should be assessed on a case-by-case basis.		

Staging and/or Logistics Constraints/Waste Issues:

Access for observation of these sites via aircraft is recommended due to the danger of vessel operations and lack of physical access.

Ecological Concerns:

A NEBA or SIMA should be undertaken to ensure the most appropriate response options and any sensitivities are identified.

Cultural/Historical Concerns:

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Access to these areas is difficult and can be dangerous – no physical clean-up recommended.

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Access to these areas is difficult and can be dangerous – no physical clean-up recommended.

Table A1-1d: Shoreline treatment recommendation – Sandy beach (mixed sand/shell)

Oiled Areas for Treatment: **Description:** • These beaches are flat to moderately sloping and relatively hard packed. Some beaches may have softer sediments – reducing access by people and vehicles. • There can be heavy accumulations of wrack (seagrass/debris) present. • Beaches support a diversity of animal and plant species. **Predicted Oil Behaviour** • Both MDO and Condensate are Class I/II hydrocarbons • Class I/II hydrocarbons spread rapidly, disperse, and evaporate quickly. • Gas Condensate is predicted once weathered to leave a waxy substance that will require manual removal. For detailed oil behaviour see the Otway Exploration Drilling OPEP page 17.	

Clean up Recommendations:

Tactical: Where appropriate, the following response strategies are recommended.		
Natural Recovery		Allow tidal action to flush stranded hydrocarbon off the beach. The spilt hydrocarbon will continue to weather, degrading and gradually reducing in volume and toxicity. Natural recovery is appropriate in situations where alternative clean up techniques would cause more harm than benefit, or where access is restricted.
Manual Oil Removal (incl. debris removal)		The removal of bulk hydrocarbon and contaminated sediment by manual methods including shovels, heavy duty plastic bags and buckets. Often used where substrate is insufficient for mechanical operations and/or where the beach is too far for pumps or suction hoses to reach the water's edge. Only suitable where there is safe access/egress for personnel and support facilities to manually recover oil.
Barrier (Onshore/ Nearshore boom)		Onshore/Nearshore booms may be deployed to contain and recover oil released from the contaminated area either naturally or concurrently with flooding/flushing operations. Booms must be placed and removed carefully to minimise disturbance to the surrounding area. Likewise, they must be carefully monitored to prevent stranding, entanglement or failure.
Low-Pressure, Ambient-Water Flushing		Low -pressure, ambient-temperature flushing can be used to flush trapped oil out to open water for collection using booms and sorbents. Considerations should be given to tidal currents (flush on a falling tide) and wind (an onshore wind will push any released hydrocarbon back onto the beach).
People and Resources: Personnel requirements should be assessed on a case-by-case basis, for guidance refer to Appendix 2.		

Staging and/or Logistics Constraints/Waste Issues:

- Access to some beaches will require permission from the relevant LGA or Land Manager
- Mobile Phone coverage may be limited in remote areas, a contingency with a Satellite Phone should be scoped prior to deployment to site.
- Manual and debris removal will generate waste and have decontamination requirements.
- Manual removal will require personal and support facilities.

Ecological Concerns:

A NEBA or SIMA should be undertaken to ensure the most appropriate response options and any sensitivities are identified.

Cultural/Historical Concerns:

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Risk assessments should be conducted for each individual site with site safety plans and a Job Safety Analysis undertaken prior to commencement of response activity.

Table A1-1e: Shoreline treatment recommendation – Tidal flats (mud/sand) and vegetative salt/brackish marsh

Oiled Areas for Treatment:

Description:

- Wetlands consisting of emergent herbaceous vegetation that are regularly, frequently, or continually flooded.
- Highly productive ecosystems that support a diversity of animal and plant species.
- Vary widely in type of vegetation, substrate (mud/sand), salt tolerance and seasonality.

Predicted Oil Behaviour

- Both MDO and Condensate are Class I/II hydrocarbons
- Class I/II hydrocarbons spread rapidly, disperse, and evaporate quickly.
- Gas Condensate is predicted once weathered to leave a waxy substance that will require manual removal.

For detailed oil behaviour see the Otway Exploration Drilling OPEP page 17.

Clean up Recommendations:

Tactical: Where appropriate, the following response strategies are recommended.		
Natural Recovery		Allow tidal action to flush stranded hydrocarbon off the tidal flats or marsh. The spilt hydrocarbon will continue to weather, degrading and gradually reducing in volume and toxicity. Natural recovery is appropriate in situations where alternative clean up techniques would cause more harm than benefit, or where access is restricted.
Barrier (Onshore/ Nearshore Boom)		Onshore/Nearshore booms may be deployed to contain and recover oil released from the contaminated area either naturally or concurrently with flooding/flushing operations. Booms must be placed and removed carefully to minimise disturbance to the

		surrounding area. Likewise, they must be carefully monitored to prevent stranding, entanglement or failure.
Low-Pressure, Ambient-Water Flushing		Low -pressure, ambient-temperature flushing can be used to flush trapped oil out to open water for collection using booms and sorbents. Considerations should be given to tidal currents (flush on a falling tide) and wind (an onshore wind will push any released hydrocarbon back onto the beach).
People and Resources: Personnel requirements should be assessed on a case-by-case basis, for guidance refer to Appendix 2.		

Staging and/or Logistics Constraints/Waste Issues:

- Mobile Phone coverage may be limited in remote areas, a contingency with a Satellite Phone should be scoped prior to deployment to site.
- Contaminated boom will require cleaning and removal with decontamination options to be considered

Ecological Concerns:

A NEBA or SIMA should be undertaken to ensure the most appropriate response options and any sensitivities are identified.

Cultural/Historical Concerns:

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Risk assessments should be conducted for each individual site with site safety plans and a Job Safety Analysis undertaken prior to commencement of response activity.

Table A1-1f: Shoreline treatment recommendation – Shallow seagrass

Oiled Areas for Treatment:

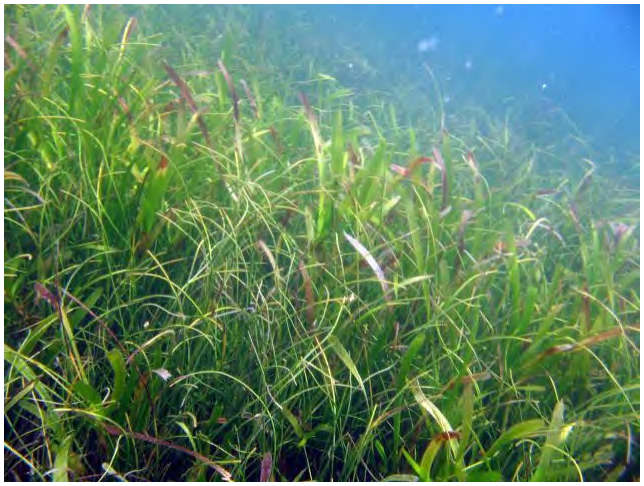
Description:

- Flowering plants that grow in shallow or sheltered coastal waters, anchored in sand or mud bottoms.
- Provide habitat for a variety of marine, estuarine and beach-dwelling animals.

Predicted Oil Behaviour

- Both MDO and Condensate are Class I/II hydrocarbons
- Class I/II hydrocarbons spread rapidly, disperse, and evaporate quickly.
- Gas Condensate is predicted once weathered to leave a waxy substance that will require manual removal.

For detailed oil behaviour see the Otway Exploration Drilling OPEP page 17.



Clean up Recommendations:

Tactical: Where appropriate, the following response strategies are recommended.		
Natural Recovery		Allow tidal action to flush stranded hydrocarbon out of contaminated seagrass beds. The hydrocarbon will continue to weather, degrading and gradually reducing in volume and toxicity. Natural recovery is appropriate in situations where alternative cleanup techniques would cause more harm than benefit to the seagrass beds.

Barrier (Onshore/ Nearshore boom)		Onshore/Nearshore booms may be deployed to contain and recover oil released from the contaminated area naturally or concurrently with flooding/flushing operations.
People and Resources: Personnel requirements should be assessed on a case-by-case basis, for guidance refer to Appendix 2.		

Staging and/or Logistics Constraints/Waste Issues:

- Mobile Phone coverage may be limited in remote areas, a contingency with a Satellite Phone should be scoped prior to deployment to site.
- Boom used may require decontamination.

Ecological Concerns:

A NEBA or SIMA should be undertaken to ensure the most appropriate response options and any sensitivities are identified.

Cultural/Historical Concerns:

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Risk assessments should be conducted for each individual site with site safety plans and a Job Safety Analysis undertaken prior to commencement of response activity.

Table A1-1g: Shoreline treatment recommendation – Reef (rocky/coral)

Oiled Areas for Treatment:

Description:

- Subtidal rocky/coral reefs provide habitat for a variety of plant and animal species.
- Coral reefs are important economic and natural resources. They protect shorelines and support fisheries, recreation, and tourism.

Predicted Oil Behaviour

- Both MDO and Condensate are Class I/II hydrocarbons
- Class I/II hydrocarbons spread rapidly, disperse, and evaporate quickly.
- Gas Condensate is predicted once weathered to leave a waxy substance that will require manual removal.
- For detailed oil behaviour see the Otway Exploration Drilling OPEP page 17.

Clean-up Recommendations:

Tactical: The following response strategy is recommended.		
Natural Recovery		Allow natural tidal action to flush stranded/deposited oil. Oil will continue to weather, degrading and gradually reducing in volume and toxicity. Natural recovery is appropriate in situations where alternative clean up techniques would cause more harm than benefit, or where access is restricted.
People and Resources:		

Personnel requirements should be assessed on a case-by-case basis, for guidance refer to Appendix 2.

Staging and/or Logistics Constraints/Waste Issues:

• SMV will be the primary response option for this area with the use of vessel or aviation observations

Ecological Concerns:

A NEBA or SIMA should be undertaken to ensure the most appropriate response options and any sensitivities are identified.

Cultural/Historical Concerns:

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Risk assessments should be conducted for each individual site with site safety plans and a Job Safety Analysis undertaken prior to commencement of response activity.

Table A1-1h: Shoreline treatment recommendation – Mangroves

Oiled Areas for Treatment: **Description:** • Roots and trunks are mostly intertidal**;** the lower leaves are flooded at high tide. • Substrate type can vary between mud, sand and leaf debris. • They are highly productive, serve as nursery habitat, and support a diversity of animal and plant species. **Predicted Oil Behaviour** • Both MDO and Condensate are Class I/II hydrocarbons • Class I/II hydrocarbons spread rapidly, disperse, and evaporate quickly. • Gas Condensate is predicted once weathered to leave a waxy substance that will require manual removal. For detailed oil behaviour see the Otway Exploration Drilling OPEP page 17.	

Clean-up Recommendations:

Tactical: Where appropriate, the following response strategies are recommended.		
Natural Recovery		Allow tidal action to flush stranded oil out of contaminated mangrove areas. Oil will continue to weather, degrading and gradually reducing in volume and toxicity. Natural recovery is appropriate in situations where alternative clean-up techniques would cause more harm than benefit to the mangroves and associated habitat.
Barrier (Onshore/ Nearshore boom)		Onshore/Nearshore booms may be deployed to contain and recover oil released from the contaminated area either naturally or concurrently with flooding/flushing operations.
Sorbents		Sorbent material (boom, pads, snares) may be placed on the floating hydrocarbon or water surface, allowing it to absorb or used to wipe or dab stranded hydrocarbon.

		Recovery of all sorbent material is mandatory. Sorbent materials must be placed and removed carefully to minimise disturbance to the surrounding area. Likewise, they must be carefully monitored to prevent stranding, entanglement and failure
Low-Pressure, Ambient-Water Flushing		Low-pressure flushing with ambient seawater can be used to wash hydrocarbon from the sediment surface and mangrove vegetation in to areas where it can be collected. Flushing operations are most feasible from the outer fringe of the mangrove habitat and considerations should be given to tidal currents (flush on a falling tide) and wind (an onshore wind will push any released hydrocarbon back onto the shoreline).
People and Resources: Personnel requirements should be assessed on a case-by-case basis, for guidance refer to Appendix 2.		

Staging and/or Logistics Constraints/Waste Issues:

- Access to some beaches will require permission from the relevant LGA or Land Manager
- Mobile Phone coverage may be limited in remote areas, a contingency with a Satellite Phone should be scoped prior to deployment to site.
- Manual and debris removal will generate waste and have decontamination requirements.
- Manual removal will require personal and support facilities.

Ecological Concerns:

A NEBA or SIMA should be undertaken to ensure the most appropriate response options and any sensitivities are identified.

Cultural/Historical Concerns:

Consultation with Traditional Owner Groups and relevant government departments should be sought prior to mounting a response to cover any cultural or historical concerns.

Safety Concerns:

Risk assessments should be conducted for each individual site with site safety plans and a Job Safety Analysis undertaken prior to commencement of response activity.

Shoreline Treatment Recommendation Guide – Additional Information

The following table provides additional information to assist with planning decisions around the use of individual shoreline clean-up techniques. Key elements including objective, description, applicable habitat types, when to use, biological constraints, environmental effects and waste generation have been provided for each of the twelve shoreline clean-up techniques.

Table A1-2: Additional information to support shoreline treatment recommendation guide. Note. This table is based on the information provided in the NOAA Shoreline Assessment Manual.

	Objective	Description	Applicable Habitat Types	When to Use	Biological Constraints	Environmental Effects	Waste Generation
Natural Recovery	No stranded oil is removed in order to minimise impact to the environment, or because no there is no effective/safe method for cleanup.	Oil is left in place to degrade naturally. Monitoring of the contaminated area may be required.	Manmade Structures Rocky Shore Sandy Beach Tidal Flats Shallow Seagrass Reef Mangroves	When natural removal rates are fast (high evaporation, high energy coastline), when the degree of oiling is light or when cleanup actions will do more harm than natural recovery.	Natural recovery may be inappropriate for area used by high numbers of mobile animals (birds, marine mammals) or endangered species.	Same as from the oil alone.	None.
Manual Oil Removal	Removal of oil with hand tools and manual labour.	Removal of surface oil using hands, rakes, shovels, buckets, scrapers, sorbents, etc., and placing in containers. Includes underwater recovery of submerged oil by divers.	Preferred: Rocky Shore Sandy Beach Possible: Tidal Flats Mangroves	Light to moderate oiling conditions for stranded oil. Submerged heavy oils that have formed semi-solid/solid masses on the bottom.	Foot traffic over sensitive areas (wetlands, tidal pools, etc.) should be restricted or prevented. Shoreline access may need to be restricted/closed at times (i.e. during bird nesting/ turtle hatching). Permission to work in culturally significant sites.	Minimal, if surface disturbance by responders and waste generation is controlled.	Collection of oil mixed with sand. Oily wastewater following decontaminati on. Oiled personal protective gear. All must be properly treated and/or disposed.

	Objective	Description	Applicable Habitat Types	When to Use	Biological Constraints	Environmental Effects	Waste Generation
Mechanical Oil Removal	Removal of oil from shorelines using mechanical equipment.	Oil is collected using equipment such as graders, bulldozers, dredges, beach cleaners, etc. Requires systems for temporary storage, transport and treatment/disposal of collected material.	Possible: Sandy Beach	When large amounts of oiled materials must be removed. Care should be taken to remove sediments only to the depth of oil penetration. Excessive sediment removal will cause erosion and significantly increase waste volume.	Use of heavy equipment in sensitive habitats (i.e. wetlands, soft substrates) should be restricted. Permission requested for use in culturally significant areas. Site area must be controlled to prevent physical disturbance to adjacent, unoiled areas. The noise generated by the mechanical equipment may present a constraint as well.	May be detrimental if excessive sediments are removed without replacement. Organisms in the sediment will be affected, although the need to remove oil may make this response method the best overall alternative. Resuspension of exposed oil and fine-grained, oil sediments can affect adjacent bodies of water.	Can generate large quantities of contaminated sediment debris that requires treatment and/or disposal.
Sorbents	Removal of surface oil by absorption by oleophilic material placed at the waterline.	Sorbent material (boom, pads, snares) is placed on the floating oil or water surface, allowing it to absorb oil or is used to wipe or dab stranded oil. Recovery of all sorbent material is mandatory - they need to be firmly anchored in areas exposed to wave action/currents, to prevent stranding on the shoreline.	Preferred: Rocky shore Possible: Tidal Flats Shallow Seagrass Mangroves	When oil is free-floating in small rocky pools, or stranded on shore. As a secondary treatment method after gross oil removal, and in sensitive areas where access is restricted (i.e mangroves). Note. Heavy oil will only coat the surface – therefore requires a large surface area to be effective.	Access for deploying and retrieving sorbents should not adversely affect wildlife. Application is soft or sensitive habitats will require deployment by boat or use of walking boards. Sorbent material left in place too long can break apart and present an ingestion hazard to wildlife.	Physical disturbance of habitat during deployment and retrieval.	All sorbent material must be collected and disposed appropriately. Caution should be taken to prevent overuse and the generation of large amounts of lightly oiled sorbents.

	Objective	Description	Applicable Habitat Types	When to Use	Biological Constraints	Environmental Effects	Waste Generation
Vacuum	Removal of oil pooled on a shoreline substrate or subtidal sediments.	Vacuum unit is attached via a flexible hose to a suction head that recovers free oil. May be mounted on vessels for water-based operations, on trucks driven to recovery areas, or hand-carried to remote sites.	Preferred: Rocky shore Possible: Manmade Structures Sandy Beach Tidal Flats Shallow Seagrass Mangroves	When oil is stranded on the substrate, pooled against a shoreline, concentrated in rocky trenches or trapped in vegetation. May be used in combination with low-pressure flushing to lift the oil off the substrate and vegetation.	Restrictions should be established for areas where foot traffic and equipment operation may be damaging, such as soft substrates.	Minimal, if foot and vehicle traffic are controlled and minimal substrate/vegetation is damaged or removed. Site restrictions and procedures should be developed and implemented.	Collected oil and or oil/water mix will need to be stored temporarily prior to treatment/disposal. Large amounts of water are often recovered, requiring separation and treatment.
Debris Removal	Removal of debris in path of spill prior to oiling and to remove contaminated debris from the shoreline and water surface.	Manual or mechanical removal of debris (seaweed, driftwood, wreckage, trash) from the shore or water surface.	Possible: Sandy Beach Tidal Flats Mangroves	When debris is heavily contaminated and provides a potential source of secondary oil release and/or contamination for other resources that use the area such as birds and small mammals. Removal of non-oiled debris (beach wrack) may be considered to reduce potential oiled waste; or likely clogging of recovery skimmers; or if it is likely to cause safety problems for responders.	Foot traffic over sensitive areas (wetlands, spawning grands) must be restricted/controlled. Debris may be a habitat and an important source of prey (i.e. shorebirds feeding in wrack on beaches).	Physical disruption of substrate.	Potential to generate large volumes of contaminated debris. Waste disposal options should be less restrictive for debris collected pre-spill.

	Objective	Description	Applicable Habitat Types	When to Use	Biological Constraints	Environmental Effects	Waste Generation
Vegetation Removal	To remove portions of oiled vegetation or oil trapped in vegetation to prevent oiling of wildlife or secondary oil releases.	Oiled vegetation is cut (weed trimmers, blades), picked or raked up and bagged for disposal.	Possible: Tidal Flats Mangroves	When the risk of oiled vegetation contaminating wildlife is greater than the value of the vegetation that is to be cut, and there is no less-destructive method that removes or reduces the risk to acceptable levels. Also, to remove thick oil residues under the oiled vegetation.	Cutting only the oiled portions of the plants and leaving roots and stems (as much as possible) will reduce impact to plants. Operations must be strictly monitored to minimise the degree of root destruction and mixing oil deeper into the sediments.	Vegetation removal/unnecessary trampling will destroy habitat for many animals. Cut areas will have reduced plant growth and, in some instances, plants may be killed. Along exposed sections of shoreline, the vegetation may not recover, resulting in erosion and habitat loss.	Cut portions of oiled plants must be collected and disposed of properly.
Sediment Tiling	To break up oily sediments and surface oil deposits, increasing their surface area, and bringing deeper subsurface oil layers to the surface, enhancing the rate of degradation by aeration. Also, to increase the rate sediment re-working by wave action.	Oil sediments are mixed (i.e. rototilled) using mechanical equipment or manual tools. Along beaches, oiled sediments may be pushed to the lower intertidal zone to enhance natural cleanup by wave activity (surf washing). On gravel beaches, the process may be aided with high-volume flushing.	Possible: Sandy Beach Sedimentary substrate that can support mechanical equipment or foot traffic and hand tiling.	On sand to gravel beaches with subsurface oil where sediment removal is not feasible (due to erosion, transportation or disposal problems). On sand beaches where the sediment is stained or lightly oiled. May be appropriate for sites where the oil is stranded above the normal high waterline, so that the sediments can be reworked by wave action.	Avoid use on shores near sensitive wildlife habitats, such as fish-spawning areas or bird-nesting and adjacent to subtidal habitats such as shellfish beds, seagrass, or coral reefs.	Mixing of oil into sediments could further expose organisms that live below the original layer of oil. Repeated reworking could delay re-establishing of these organisms. Refloated oil and oily suspended sediments from treated sites could contaminate adjacent waterbodies and shorelines.	None.
Flooding	To lift and wash oil stranded on land to the water's edge for collection.	A perforated hose is placed above the oiled shore. Sea water is pumped through the hose at low pressure and flows downwards	Preferred: Sandy Beach Possible:	In heavily oiled areas when the oil is still fluid and adheres loosely to the substrate, and where oil has penetrated into gravel sediments. Can be	Care should be taken to recover oil where nearshore habitats contain rich biological communities. Not	Habitat may by physically disturbed by foot traffic during operations and smothered by sediments washing. If containment methods are not	Depends on the effectiveness of the collection method.

	Objective	Description	Applicable Habitat Types	When to Use	Biological Constraints	Environmental Effects	Waste Generation
		to the water where any released oil is collected by booms and recovered by skimmers or vacuum. On porous sediments, water flows through the substrate, pushing loose oil ahead of it. On saturated, fine-grained sediments, the technique will lift and flush the oil.	Manmade Structures Rocky shore Tidal Flats Shallow Seagrass	used with other washing techniques (i.e. low or high-pressure flushing).	appropriate for soft, muddy substrates.	sufficient, oil and oiled sediments may be flushed into adjacent areas. Flooding may cause sediment loss and erosion of the shoreline and shallow rooted vegetation. Oiled sediment may be transported to nearshore areas, contaminating them and burying benthic organisms.	
Low-Pressure, Ambient-Water Flushing	Removal of fluid oil that has adhered to the substrate or man-made structures, pooled on the surface, or become trapped in vegetation.	Ambient-temperature water (sea water) is sprayed at low pressure (<72 kilopascals (kpa)) from a hand-held hose, to lift oil from the substrate and float it to the water's edge for recovery by skimmers, vacuum or sorbents. Can be conducted from barges or flat-bottom vessels with long-reach spray systems. Usually used with a flooding systems to prevent released oil from re-adhering to the substrate downstream of the treatment area.	Preferred: Sandy Beach Possible: Manmade Structures Rocky shore Tidal Flats Shallow Seagrass	Where fluid oil is stranded onshore or floating on shallow intertidal areas.	May need to restrict use so that the oil/water effluent does not drain across sensitive intertidal habitats, and the mobilised sediments do not affect rich subtidal communities. Use from boats will reduce the need for foot traffic in soft substrates and vegetation. Flushed oil must be recovered to prevent further oiling of adjacent areas.	If containment methods are not sufficient, oil and oiled sediments may be flushed into adjacent areas. Flooding may cause sediment loss and erosion of the shoreline and shallow rooted vegetation. Some trampling of substrate and attached biota may occur.	Depends on the effectiveness of the collection method.

	Objective	Description	Applicable Habitat Types	When to Use	Biological Constraints	Environmental Effects	Waste Generation
High-Pressure, Ambient-Water Flushing	To remove oil that has adhered to hard substrates or man-made structures.	Similar to low-pressure flushing, except that water pressure is 720-7,200 kpa. High-pressure spray will more effectively remove sticky or viscous oils.	Preferred: Manmade Structures	When low-pressure flushing is not effective at removing adhered oil, which must be removed to prevent continued oil release or for aesthetic reasons. When a directed water jet can remove oil from hard to reach sites.	May need to restrict flushing so that the oil does not drain across sensitive habitat. Flushed oil must be recovered to prevent further oiling of adjacent areas. Should not be used directly on attached algae nor rich, intertidal areas.	All attached animals and plants in the direct spray zone will be removed, even when used properly. If containment methods are not sufficient, oil and oiled sediments may be flushed into adjacent areas. Some trampling of substrate and attached biota may occur. Inappropriate use may drive oil deeper into the substrate or erode fine sediments from shorelines.	Depends on the effectiveness of the collection method
Hot-Water Flushing	To mobilise weathered and viscous oil strongly adhered to surfaces.	Hot water (32ºC up to 77 ºC) is sprayed with hand-held wands at low (<72 kpa) pressure/high (>720kpa) pressure – where appropriate. Requires immediate use of a vacuum/ sorbents or used with a flooding system, using booms and a skimmer/vacuum for collection.	Possible: Manmade Structures	Low-pressure flushing where heavy, relatively fresh oil is stranded onshore. High-pressure flushing on heavily weathered oil that is not effected by low-pressure flushing.	Use should be restricted so that the oil/water effluent does not drain across habitats sensitive to exposure by oil, oily sediments and hot water. Should not be used directly on attached algae nor rich, intertidal areas. Released oil must be recovered to prevent further oiling of adjacent habitats.	All attached animals and plants in the direct spray zone will be removed, even when used properly. Oiled sediment may be transported to shallow nearshore areas, contaminating them and burying benthic organisms.	Depends on the effectiveness of the collection method

Appendix 3: AMOSC Current Equipment List

Product Totals by Location Report

Friday, 24 March 2023
8:17:59 AM

Quantity	Available	Length	Product#	Product Name	Product Category	Bay Location
Broome						
2	2		G-033	Dispersant Spray-Afedo System 200-TS	Dispersant Spray Equipment	Supply Base 3
1	1		G-041	Power Pack-Lamor Hydraulic LPP 14	Power Packs, Pumps & Accessories	Supply Base 3
1	1		G-052	Skimmer-Minimax 12-Brush	Skimmer	Supply Base 3
2	2	400	G-092	Boom-Lamor HDB 1300 (200m)on Reel	Boom	Supply Base 3
4	4	100	G-110	Boom-Beach Guardian Shoreseal (20m)	Boom	Supply Base 3
8	8	200	G-111	Boom-Zoom Boom (25m)	Boom	Supply Base 3
1	1		G-130	Boom Accessories-Beach Guardian Deployment Kit	Boom Accessories	Supply Base 3
4	4		G-133	Boom Accessories-Zoom Boom Anchor Kit	Boom Accessories	Supply Base 3
1	1		G-141	Waste (Land)-Vikotank (13000Ltr)	Waste Storage	Supply Base 3
13	13		G-150	Sorbent-Boom	Sorbents	Supply Base 3
4	4		G-151	Sorbent-Squares	Sorbents	Supply Base 3
3	3		G-184	Shipping Container	General	Supply Base 3
1	1		G-330	Wildlife-Oiled fauna kit	Decontamination	Supply Base 3
1	1		G-331	Decontamination-Kit (PPE)	Decontamination	Supply Base 3
1	1		G-400	Boom Cage	Misc	Supply Base 3
1	1		G-401	Boom Cage	Misc	Supply Base 3
1	1		G-500	Response tool box	General	Supply Base 3
14	14		G-607	Dispersant-Ardrox 6120	Dispersant	DG Shed
Exmouth						
1	1		G-030	Dispersant Spray-Viko Spray	Dispersant Spray Equipment	Harold Holt
1	1		G-033	Dispersant Spray-Afedo Ecospray 80W	Dispersant Spray Equipment	Harold Holt
1	1		G-040	Power Pack-Desmi Ro-Boom	Power Packs, Pumps & Accessories	Harold Holt
1	1		G-051	Skimmer-Komara 12K-Disc	Skimmer	Harold Holt
1	1		G-052	Skimmer-Minimax 12-Brush	Skimmer	Harold Holt
1	1		G-054	Skimmer-Passive-Weir	Skimmer	Harold Holt
1	1		G-070	Skimmer-Ro-Vac-Vacuum	Skimmer	Harold Holt
1	1		G-079	Skimmer-Desmi GT 185-Brush/Weir	Skimmer	Harold Holt
2	2		G-090	Hydraulic Powered reel Winder- Roboom	Boom Accessories	Harold Holt
2	2	400	G-091	Boom-Desmi Ro-Boom 1500 (200m)	Boom	Harold Holt

Quantity	Available	Length	Product#	Product Name	Product Category	Bay Location
20	20	500	G-110	Boom-Beach Guardian Shoreseal (20m)	Boom	Harold Holt
20	20	500	G-111	Boom-Zoom Boom (25m)	Boom	Harold Holt
3	3		G-130	Boom Accessories-Beach Guardian Deployment Kit	Boom Accessories	Harold Holt
1	1		G-132	Boom Accessories-Shoreline Boom Anchoring kit	Boom Accessories	Harold Holt
10	10		G-133	Boom Accessories-Zoom Boom Anchor Kit	Boom Accessories	Harold Holt
2	2		G-140	Waste (Land)-Fastank Temporary Storage (9000Ltr)	Waste Storage	Harold Holt
1	1		G-150	Sorbent-Boom	Sorbents	Harold Holt
1	1		G-160	Skimmer-Desmi Ro Mop 240-Oil Mop	Skimmer	Harold Holt
1	1		G-181	Trailer-General Support	Trailer	Harold Holt
2	2		G-184	Shipping Container	General	Harold Holt
10	10		G-186	Shoreline Accessories-Wheelbarrow	General	Harold Holt
1	1		G-260	Genarator-Hatz 15kva (12kw)	Trailer	Harold Holt
1	1		G-330	Wildlife-Oiled fauna kit	Decontamination	Harold Holt
1	1		G-335	Decontamination-Kit (PPE)	Decontamination	Harold Holt
1	1		G-336	Decontamination-Kit Locker	Decontamination	Harold Holt
1	1		G-337	Shoreline Accessories-Hand Tool Accessories Cage	General	Harold Holt
3	3		G-400	Boom Cage	Misc	Harold Holt
5	5		G-401	Boom Cage	Misc	Harold Holt
30	30		G-604	Dispersant-Slickgone NS	Dispersant	Harold Holt
45	45		G-605	Dispersant-Slickgone NS	Dispersant	Harold Holt
1	1		G-610	Dispersant-Agitator	General	Harold Holt
1	1		G-888	Miscellaneous Items	General	Harold Holt
Fremantle						
1	1		G-029	Dispersant Spray-Boom Vane (Containerised)	Dispersant Spray Equipment	Outside Warehouse
1	1		G-030	Dispersant Spray-Viko Spray	Dispersant Spray Equipment	
1	1		G-032	Dispersant Spray-Transfer Pump	Dispersant Spray Equipment	ABM Container
5	5		G-033	Dispersant Spray-Afedo System 100-TS	Dispersant Spray Equipment	Outside Warehouse
1	1		G-034	Dispersant Spray-Global Boat Spray	Dispersant Spray Equipment	Outside Warehouse
1	1		G-035	Pump-Lamor GTA 30 Oil Transfer	Power Packs, Pumps & Accessories	2D
4	4		G-037	Pump-Honda GX-160 Water (2")	Power Packs, Pumps & Accessories	Outside Warehouse
5	5		G-039	Boom Accessories-Air Blower-2 Stroke	General	Outside Warehouse
1	1		G-040	Power Pack-Desmi Ro-Boom	Power Packs, Pumps & Accessories	4B

Quantity	Available	Length	Product#	Product Name	Product Category	Bay Location
3	3		G-042	Power Pack-Lamor Hydraulic LPP 36	Power Packs, Pumps & Accessories	12, 13, 14
1	1		G-043	Power Pack-Lamor Hydraulic LPP 7	Power Packs, Pumps & Accessories	
1	1		G-044	Boom Accessories-Lamor Control Stand for LPP36	Power Packs, Pumps & Accessories	2A
3	3		G-045	Boom Accessories-Lamor Air Blower-Hydraulic	General	12, 13, 14
1	1		G-051	Skimmer-Komara 12K-Disc	Skimmer	3B, 3E
2	2		G-052	Skimmer-Minimax 12-Brush	Skimmer	2C, 2F, 2B, 2E
1	1		G-053	Skimmer-Komara 20K-Disc	Skimmer	3C, 3F
1	1		G-054	Skimmer-Passive-Weir	Skimmer	4C, 4F
2	2		G-060	Skimmer-Lamor Rock Cleaner-Brush	General	1C, 1F, 1B, 1E
3	3		G-081	Skimmer-Lamor LWS500-Brush/Weir	Skimmer	12, 13, 14
6	6		G-090	Hydraulic Powered reel Winder- Roboom	Boom Accessories	14, 13, 12
6	6	1200	G-091	Boom-Desmi Ro-Boom 1500 (200m)	Boom	14, 13, 12
1	1	36	G-093	Boom-Lamor HDB 1500 (100m)	Boom	Bay A
19	19	475	G-110	Boom-Beach Guardian Shoreseal (20m)	Boom	Outside Warehouse
34	34	850	G-111	Boom-Zoom Boom (25m)	Boom	4 A/D, Outside Warehouse, Bay L
18	18	540	G-112	Boom-Lamor SFB-18 GP Solid Floatation (30m)	Boom	Outside Warehouse
2	2		G-130	Boom Accessories-Beach Guardian Deployment Kit	Boom Accessories	4E
3	3		G-131	Boom Accessories-Ro-Boom Anchoring System	Boom Accessories	12, 13, 14
28	28		G-133	Boom Accessories-Zoom Boom Anchor Kit	Boom Accessories	Outside Warehouse
1	1		G-139	Waste (Land)-Fastank Temporary Storage (3000Ltr)	Waste Storage	Outside Warehouse
1	1		G-140	Waste (Land)-Fastank Temporary Storage (9000Ltr)	Waste Storage	Outside Warehouse
2	2		G-142	Waste (On-Water)-Lancer Storage Barge (25000Ltr)	Waste Storage	Outside Warehouse
3	3		G-143	Waste (On-Water)-Deck Bladder Storage (25000Ltr)	Waste Storage	Outside Warehouse
4	4		G-144	Waste (Land)-Lamor TemporaryStorage (11400Ltr)	Waste Storage	Outside Warehouse
1	1		G-161	Skimmer-Desmi Ro Mop 260-Oil Mop	Skimmer	Warehouse 2
2	2		G-172	Forklift - Crown 2.5 Tonne	Vehicle	Warehouse, Fremantle Warehouse
1	0		G-180	Trailer-Mobile Workshop	Trailer	Warehouse 3
2	2		G-181	Trailer-Tandem (Galvanised)	Trailer	Outside Warehouse
5	5		G-183	Aluminium Container	General	Outside Warehouse
8	8		G-184	Shipping Container	General	Outside Warehouse
4	4		G-188	Monitoring/Surveillance-Voyager Drift Buoy	Communications	Bay 1A
1	1		G-199	Wildlife-Bird Scarer	Wildlife Support	1D
1	1		G-200	Vessel-Zodiac Pro 500 (4.7Mtr)	Vessel	Warehouse

Quantity	Available	Length	Product#	Product Name	Product Category	Bay Location
1	1		G-251	PPE- Inflatable PFD Set of 24	General	12 C/F
3	3		G-259	Generator	General	Warehouse, Wildlife Container, ABM Container
1	1		G-262	Decontamination-Vehicle Washdown Trailer	Trailer	Warehouse 2
1	1		G-325	Wildlife-Fauna Hazing & Exclusion Kit	Wildlife Support	
3	3		G-326	Wildlife-Fauna Hazing & Exclusion Kit	Wildlife Support	Warehouse
1	1		G-332	Wildlife-Washdown Container	Wildlife Support	Outside Warehouse
1	1		G-333	Shoreline-Support Kit	General	3A
1	1		G-334	Shoreline-Flushing Kit (3")	Power Packs, Pumps & Accessories	3D
1	1		G-336	Decontamination-Kit Locker	Decontamination	7 C/F
1	1		G-339	PPE-PPE Response Container (SCFU 1114735)	General	Outside Warehouse
1	1		G-350	Airbase Management Container	Misc	
2	2		G-400	Boom Cage	Misc	5 A/D, 4 A/D
8	8		G-605	Dispersant-Slickgone NS	Dispersant	Outside Warehouse, Dispersant Area
27	27		G-606	Dispersant-Corexit 9500	Dispersant	Outside Warehouse, Dispersant Area
1	1		G-610	Dispersant-Agitator	General	Warehouse
1	1		G-700	Monitoring/Surveillance-Phantom 4 Drone	General	Head Office
1	1		G-750	Monitoring/Surveillance-Aerial Surveillance Kit	General	Head Office
1	1		G-755	Backpack-Response Backpacks	General	
2	2		G-808	Monitoring/Surveillance-4-1 Personnal Gas Monitor	General	Warehouse
1	1		G-809	Monitoring/Surveillance-Air Quality Monitoring Kit	Misc	Head Office
4	4		G-850	Ancilliaries box 1	General	Outside Warehouse
4	4		G-851	Ancilliaries Box 2	General	Outside Warehouse
2	2		G-889	Oil sampling kit	General	Outside Warehouse
3	3		G-890	Sorbent-Boom	Sorbents	Outside Warehouse
3	3		G-891	Sorbent-Squares	Sorbents	Outside Warehouse
1	1		G-950	AMOSC Vehicles	Vehicle	Warehouse
1	1		G-960	Vehicle-ATV- CF Moto u550 (1GQM058)	Vehicle	Warehouse
Nth Geelong						
1	1		G-029	Dispersant Spray-Boom Vane (Containerised)	Dispersant Spray Equipment	Outside Warehouse
2	2		G-030	Dispersant Spray-Viko Spray	Dispersant Spray Equipment	Bay D
1	1		G-032	Dispersant Spray-Transfer Pump	Dispersant Spray Equipment	ABM Container
4	4		G-033	Dispersant Spray-Afedo System 100-TS	Dispersant Spray Equipment	Outside Warehouse, Bay D

Quantity	Available	Length	Product#	Product Name	Product Category	Bay Location
1	1		G-035	Pump-Lamor GTA 30 Oil Transfer	Power Packs, Pumps & Accessories	Bay P
1	1		G-040	Power Pack-Desmi Ro-Boom	Power Packs, Pumps & Accessories	Bay A
3	3		G-042	Power Pack-Lamor Hydraulic LPP 36	Power Packs, Pumps & Accessories	Bay A, Container G-184-20 (STS)
1	1		G-044	Boom Accessories-Lamor Control Stand for LPP36	Power Packs, Pumps & Accessories	Bay K
3	3		G-045	Boom Accessories-Lamor Air Blower-Hydraulic	General	Bay A
2	1		G-050	Skimmer-Komara 30K-Disc	Skimmer	Bay J
2	2		G-051	Skimmer-Komara 12K-Disc	Skimmer	Bay J
1	1		G-052	Skimmer-Minimax 12-Brush- SDS	Skimmer	Bay G
1	1		G-054	Skimmer-Passive-Weir	Skimmer	Bay K
2	2		G-060	Skimmer-Lamor Rock Cleaner-Brush	General	Bay O
3	3		G-070	Skimmer-Ro-Vac-Vacuum	Skimmer	Bay P
1	1		G-079	Skimmer-Desmi GT 185-Brush/Weir	Skimmer	Bay C
1	1		G-080	Skimmer-Desmi 250-Weir	Skimmer	Outside Warehouse
3	3		G-081	Skimmer- Lamor LWS500-Brush/Weir	Skimmer	Bay A, Container G-184-02 (STS)
1	1		G-083	Skimmer-Canadyne Multi Head-Brush/Disc/Drum	Skimmer	Bay K
1	1		G-084	Skimmer-Versatech Multi Head-Brush/Disc/Drum	Skimmer	Bay C
11	11		G-090	Hydraulic Powered reel Winder- Roboom	Boom Accessories	Bay A
10	10	2000	G-091	Boom-Desmi Ro-Boom 1500 (200m)	Boom	Bay A
134	134	3350	G-110	Boom-Beach Guardian Shoreseal (20m)	Boom	Bay L, Training Trailer
131	131	3275	G-111	Boom-Zoom Boom (25m)	Boom	Bay L, Training Trailer, Outside Warehouse
40	39	1200	G-112	Boom-Lamor SFB-18 GP Solid Floatation (30m)	Boom	Outside Warehouse, Bay L, Training Trailer
1	1		G-113	Boom System- NOFI Current Buster 2	Boom	
1	1		G-114	Boom System-Desmi Speed Sweep	Boom	Bay E
34	34	408	G-115	Boom-Harrier Shoreseal (12m)	Boom	Bay L
3	3		G-120	Pump-General Purpose Diaphragm (3")	Power Packs, Pumps & Accessories	Bay P
1	1		G-121	Pump-Desmi DOP 250 Transfer	Power Packs, Pumps & Accessories	Bay P
8	8		G-130	Boom Accessories-Beach Guardian Deployment Kit	Boom Accessories	Training Trailer, Bay M
3	3		G-131	Boom Accessories-Ro-Boom Anchoring System	Boom Accessories	Bay A
4	4		G-132	Boom Accessories-Shoreline Boom Anchoring kit	Boom Accessories	Bay M
30	30		G-133	Boom Accessories-Zoom Boom Anchor Kit	Boom Accessories	Training Trailer, Bay K
2	2		G-135	Boom Accessories-Dual Hull magnet (1000Kg)	Boom Accessories	Charging Station Area
1	1		G-139	Waste (Land)-Fastank Temporary Storage (3000Ltr)	Waste Storage	Bay M
3	3		G-140	Waste (Land)-Fastank Temporary Storage (9000Ltr)	Waste Storage	Training Trailer, Bay M

Quantity	Available	Length	Product#	Product Name	Product Category	Bay Location
1	1		G-141	Waste (Land)-Vikotank (13000Ltr)	Waste Storage	Bay M
2	2		G-142	Waste (On-Water)-Lancer Storage Barge (25000Ltr)	Waste Storage	Bay F, Container G-184-20 (STS)
3	3		G-143	Waste (On-Water)-Deck Bladder Storage (25000Ltr)	Waste Storage	Bay G
65	65		G-150	Sorbent-Boom	Sorbents	Bay N
40	40		G-151	Sorbent-Squares	Sorbents	Bay N
96	96		G-152	Sorbent-Viscous Oil Snares	Sorbents	Bay N
11	11		G-153	Sorbent-Roll	Sorbents	Bay N
1	1		G-160	Skimmer-Desmi Ro Mop 240-Oil Mop	Skimmer	Trailer Bay
1	1		G-161	Skimmer-Desmi Ro Mop 260-Oil Mop	Skimmer	Trailer Bay
1	1		G-162	Vessel-Egmopol Barge w/t Brush Skimmer-AMOSC 1	Skimmer	Warehouse
2	2		G-172	Forklift-Hyster 2 Tonne	Vehicle	Warehouse
1	1		G-180	Decontamination-Decon Support Trailer	Trailer	Trailer Bay
3	3		G-181	Trailer-General Support	Trailer	Trailer Bay
1	1		G-182	Trailer-Egmopol	Trailer	Warehouse
1	1		G-183	Aluminium Container	General	
12	12		G-184	Shipping Container	General	Outside Warehouse, Dispersant Area
18	18		G-185	Waste (Land/Onwater)-IBC	Waste Storage	North Wall
4	4		G-188	Monitoring/Surveillance-Voyager Drift Buoy	Communications	
1	1		G-201	Vessel-Aluminium Catamaran (9Mtr)AMOSC 3	Vessel	Warehouse
1	1		G-251	PPE- Inflatable PFD Set of 32	General	Warehouse
4	4		G-259	Generator	General	Bay, Wildlife Container, ABM Container
1	1		G-260	Cleaning-Generator/Karcher Pressure Washer Unit	Trailer	Trailer Bay
1	1		G-261	Shoreline-Flushing Kit (4")	General	Bay O
1	1		G-262	Decontamination-Vehicle Washdown Trailer	Trailer	Trailer Bay
2	2		G-263	Cleaning-Diesel Pressure Washer	Power Packs, Pumps & Accessories	Bay O
1	1		G-325	Wildlife-Fauna Hazing & Exclusion Kit	Wildlife Support	
2	2		G-330	Wildlife-Oiled fauna kit	Decontamination	Bay H
1	1		G-332	Wildlife-Washdown Container	Wildlife Support	Outside Warehouse
1	1		G-334	Shoreline-Flushing Kit (3")	Power Packs, Pumps & Accessories	Bay O
1	1		G-335	Decontamination-PPE Kit (First Strike Support)	Decontamination	Bay I
1	1		G-336	Decontamination-Kit Locker	Decontamination	Bay I
1	1		G-338	Shoreline-Impact Lance Kit	Power Packs, Pumps & Accessories	Bay O
1	1		G-339	PPE-PPE Response Container (TCIU 1962281)	General	Outside Warehouse

Quantity	Available	Length	Product#	Product Name	Product Category	Bay Location
1	1		G-350	Airbase Management Container	Misc	Outside Warehouse
27	27		G-400	Boom Cage	Misc	Bay 12, Bay L
18	18		G-401	Boom Cage	Misc	Bay L, Bay K
1	1		G-500	Response tool box	General	Warehouse Store
8	8		G-604	Dispersant-Slickgone NS	Dispersant	Bay 0
67	67		G-605	Dispersant-Slickgone NS	Dispersant	Bay 0
62	62		G-606	Dispersant-Corexit 9500	Dispersant	Bay 0, Outside Warehouse
1	1		G-610	Dispersant-Agitator	General	Dispersant
2	2		G-700	Monitoring/Surveillance-DJI Spark	General	Head Office
1	1		G-750	Monitoring/Surveillance-Aerial Surveillance Kit	General	Head Office
2	2		G-755	Backpack-Response Backpacks	General	Head Office
1	1		G-760	Dispersant-Effectiveness Field Test Kit	Dispersant	Head Office
1	1		G-770	Monitoring/Surveillance-Shoreline Surveillance Kit	Misc	Head Office
6	6		G-808	Monitoring/Surveillance-4-1 Personnal Gas Monitor	General	Warehouse
1	1		G-889	Oil sampling kit	General	Outside warehouse
2	2		G-890	Sorbent-Boom	Sorbents	Outside warehouse
2	2		G-891	Sorbent-Squares	Sorbents	Outside warehouse
3	3		G-950	AMOSC Vehicles	Vehicle	Warehouse, Head Office
1	1		G-960	Vehicle-ATV- CF Moto u550	Vehicle	Warehouse

Appendix 4: Contact Directory

Contact	Phone	Email	Notes
AMSA Marine Pollution	Within Aus: 1300 641 792 Outside Aus: +61 2 6230 6811		Online POLREP: https://amsa-forms.nogginoca.com/public/polrep.html
AMSA Rescue Coordination Centre – Aviation	Within Aus: 1800 815 257 Outside Aus: +61 2 6230 6889		
AMSA Rescue Coordination Centre – Maritime	Within Aus: 1800 641 792 Outside Aus: +61 2 6230 6811		
Australian Marine Oil Spill Centre	Office: +61 3 5272 1555 Duty Officer: +61 438 379 328	amosc@amosc.com.au spills@amosc.com.au	
ConocoPhillips Emergency Call Centre	+61 8 6324 0341		
ConocoPhillips Brisbane	+61 7 3182 7302		
TasPorts King Island	+61 3 6461 1155		
TasPorts Head Office	1300 366 742	reception@tasports.com.au	
Port of Portland – After Hours & Emergencies	+61 3 5525 2450		
Port of Portland Office	+61 3 5525 2450	info@portofportland.com.au	
Port of Portland Pilots After Hours	+ 61 3 5525 2499		
Port of Apollo Bay	+61 3 5232 9475		
NOPSEMA Incident Notification	1300 674 472	submissions@nopsema.gov.au	
NOPSEMA General enquiries	+61 8 6188 8700	communications@nopsema.gov.au	
VIC Department of Transport State Duty Officer	+61 409 858 715		No text messages
VIC Maritime Incident Emergency Contact	1300 965 784	maritimeincidents@transportsafety.vic.gov.au	
Ports Victoria Harbour Master	+61 3 9644 9777		
Ports Victoria Melbourne VTS	+61 3 9644 9700		
Port of Hastings Duty Officer (Incident Notifications)	+61 437 645 026		
Port of Hastings Office	+61 3 5979 5500	enquiries@portofhastings.vic.gov.au	
Gippsland Ports On-Call officer	+61 408 185 591	feedback@gippslandports.vic.gov.au	Marine Pollution contact number
Gippsland Ports Head Office	+61 3 5150 0500		
Warrnambool City Council	+61 3 5559 4800		Warrnambool Airport and Harbour contact number.
Department of Energy, Environment and Climate Action (DEECA) State Agency Commander	1300 13 44 44	Sccvic.scmdr.delwp@scc.vic.gov.au	

Contact	Phone	Email	Notes
DEECA State Duty Officer Wildlife Emergencies	1300 114 828	Sccvic.sdo.delwpwildlife@scc.vic.gov.au	
Parks Victoria Duty Officer	13 19 63		
First Peoples State Relations – Victoria	1800 762 003	Aboriginalaffairs@dpc.vic.gov.au	Previously Aboriginal Affairs
Tasmanian Office of Aboriginal Affairs	+61 3 6232 7569	oaa@dpac.tas.gov.au	
TasEPA – Pollution Incident Reporting	1800 005 171 Business Hrs: +61 3 6165 4599	incidentresponse@epa.tas.vic.gov.au	Also contactable via Radio: TasPorts Vessel Traffic Services VHF radio channel 16/14/12 Call sign “relevant port name VTS"
TasEPA – General Number	+61 3 6165 4599	enquiries@epa.tas.gov.au	
King Island Airport	+ 61 3 6462 9000		
King Island Council	+ 61 3 6462 9000	kicouncil@kingisland.tas.gov.au	
Tasmanian Department of Natural Resources and Environment (Tas NRE)	1300 368 550		General Information
MCP Wildlife Co-ordinator (Tas) – 24 hours	+ 61 427 942 597 (0427 WHALES)		Contact in the event of an oil spill of any size
Tasmania Parks and Wildlife – General Enquiries	1300 827 727		
Tasmania Parks and Wildlife – King Island	+61 3 6462 1608	KingIsland@parks.tas.gov.au	
Beach Energy	+61 8 8338 2833		
Cooper Energy	+61 8 8100 4900		
Victorian State Control Centre	1300 287 289	Sccvic.reception@scc.vic.gov.au	
Geelong Port Head Office	1800 979 717		

Appendix 5: Oil Spill Trajectory Modelling Request Form

Oil Spill Trajectory Modelling (OSTM)

Computer based OSTM is used to help estimate the track of an oil slick in real time using live wind, weather, and current data. This service is provided by RPS Group and is accessible directly via the Conoco Phillips or AMOSC membership contracts. RPS has been used extensively to help run the predictive modelling used in this OPEP.

To predict the early movement of a level 2 or level 3 oil spill, real time OSTM will be generated by RPS. This information is typically available within 4 hours of request and can be constantly improved by feeding in real time observational data from aerial surveillance and satellite tracking buoys.

Incident ☐ Exercise ☐

PROCEDURE FOR INITIATING SPILL MODELLING – FOR OIL SPILLS

Clear form

1. Complete the form with all details – provide estimates and detail uncertainties.
2. Call the RPS Response duty officer on (**0408 477186**) to alert them of the requirement for spill modelling explaining the general details and seeking clarification as required.
3. Send the form to **RPSresponse@rpsgroup.com** (click on the email address).

If new information becomes available, inform the duty officer by telephone and then email updates.

Date and time of this notification:

Contact details

Name of the company	
Name of contact person	
Contact number (include country/area codes)	
Email address for return communications	

Details of spilled material (include oil assay if available)

Oil name				
Type or description				
Latitude of source	Degrees:		Minutes:	Seconds:
Longitude of source	Degrees:		Minutes:	Seconds:
Date and time spill started				
Time zone (+ or - from UTC)				
If slicks have been observed from an unknown source, provide map information to define the bounds				
Do you want forecasting forward in time from this location or back-track to an unknown source?	☐ Forward from slick area		Geographic bounds of slick area(s) and time of observation must be supplied	
	☐ Back-track from slick area			
	☐ Forward and back-track			

Depth, type of discharge

Depth of release	☐ Surface	☐ Subsurface – specify the depth (m)
If from subsurface, describe the discharge energy	☐ Low turbulence e.g. low-pressure leak	
	☐ Medium turbulence e.g. intermediate-pressure leak	
	☐ High turbulence e.g. well blow out, ruptured pipeline	

Volume or rate of release

Short spills that have ended	Volume:		Units:	Duration (hours):
Ongoing spills	Rate:		Units:	per hour

Notes (describe special details of the incident, special concerns, landmarks, doubts about information, etc.)

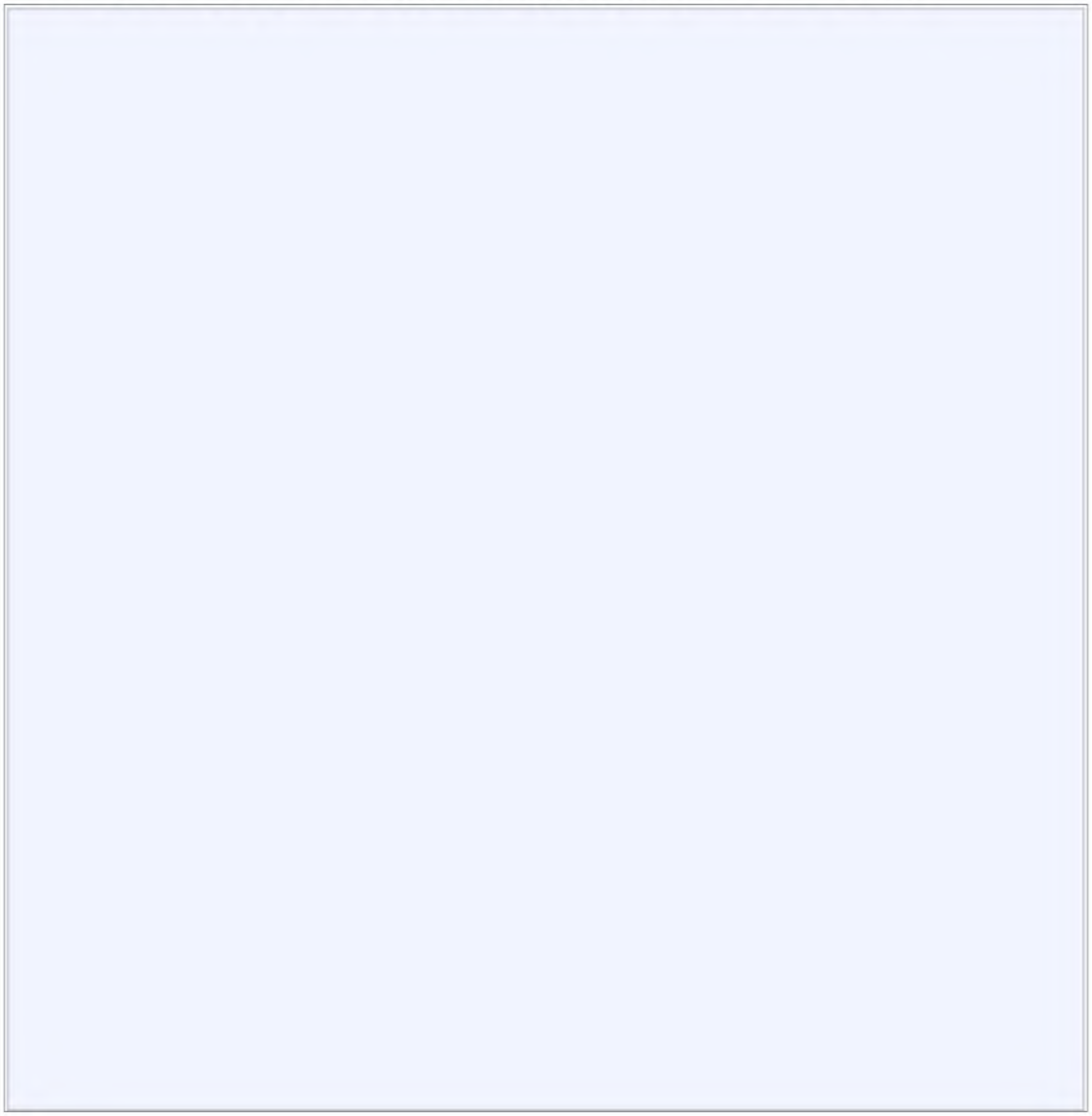
Documents attached

☐ Oil Assay sheet ☐ Safety data sheet ☐ Local wind measurements
☐ Spill site photos ☐ Aerial surveillance maps ☐ Line drawings showing oil distribution
☐ Others (specify):

Page 1

PROCEDURE FOR REQUESTING UPDATED OIL SPILL MODELLING

1. Revise the input form for any changes.
2. If surveillance is available to define the observed location of slicks, this information should be provided to the duty officer in a form that can be translated to define the spatial distribution and relative thickness of the oil. Formats that would be useful include:
   a. A GIS (shp) file defining the oil distribution (including the datum format)
   b. Satellite imagery that includes spatial references
   c. Photographs with location references
   d. A line drawing marked with estimated centre and edge locations, length and width dimensions, and relative thickness contours (use the space below making sure to provide spatial references)
   e. Location of tracking buoys (confirm first that these are marking the slick location).
3. Call the RPS Response duty officer on (**0408 477186**) to request an update to the spill modelling for changed details, explaining what has changed and seeking clarification as required.
4. Send the form and any files to **RPSresponse@rpsgroup.com** (click on email address).



Appendix 6: Status Board

Typical status boards to support common operating picture:

Status Board 1	Initial Incident Details
Status Board 2	Initial Assessment (10 Q's) (Appendix 8)
Status Board 3	IAP Template
Status Board 4	Notifications
Status Board 5	Action Tracker
Status Board 6	NEBA Template
Status Board 7	Resources at Risk
Status Board 8	SMEACS template

Appendix 7: SITREP Form

Sitrep number	**#1**	**Date and time**					
Section 1 – CALL OUT DETAILS							
Member Company		*Name of spiller*					
Contact details	**Name:**						
	IMT Position:	*If assigned*					
	Location:						
	Mobile:						
	Landline:						
	Email:						
Call Out Authorised by:		*If different from above*					
Call Out Authority Confirmed:		***YES***		***NO***			
Current AMOSC status:		***Advice Only***		***Forward Notice***		***Stand-By***	***Mobilise***
EXERCISE ONLY							
Section 2 – SPILL DETAILS							
Date / time of incident							
Description of incident		*Source? Cause of spill? Type of facility (installation, vessel, rig, pipeline)?*					
First Strike Actions:		*If any.* *IMT in place? Resources deployed?*					
Description of hydrocarbon on water		*Colour, weathering, slick dimensions, approximate area of coverage?*					
Situation	Estimated volume						
	Source contained	***YES***		***NO***			
	Flow rate						
Location	**Name / Description**						
		Latitude:		**Longitude:**			
Hydrocarbon properties		**Name**		**Pour Point**	°C/ °F		
		API/SG		**Wax Content**	%		
		Viscosity		**Asphaltene %**	%		
		Sample Available:	*Yes / no*	**MSDS Available:**	*Yes / no*		
Section 3 – AMOSC RESPONSE							
Initial resources requested		**QRG / OPEP Referenced?**					
Advice		*Liaison*					
OSTM		*FWADC*					
SFRT		*Core Group*					
SCAT		*Equipment*					
OWR							
Resources deployed (if any)							
Sensitivities at risk (if known) *Estimated time of contact*							
Section 4 – EXTERNAL CONDITIONS							
Weather		*Wind speed / direction, sea state, sea temp, air temp, high tide, low tide, currents*					
Safety/Security Considerations							

Appendix 8: POLREP Form

Australian Government
Australian Maritime Safety Authority

HARMFUL SUBSTANCES REPORT (POLREP)

Marine Order 91 *(Marine pollution prevention – Oil)*

To: General Manager, Response
through Joint Rescue Coordination Centre (JRCC) Australia

Telephone: +61 (0)2 6230 6811
Freecall: 1800 641 792 (within Australia)
AFTN: YSARYCYX
E-mail: rccaus@amsa.gov.au

Note: If any of the following items of the vessel reporting format are inappropriate they should be omitted from the report. These items of the standard reporting format are referred to in IMO Resolution A.851(20).

A. Name of vessel | Call sign | Flag

B. Date and time of event *(Note: Time must be expressed as Coordinated Universal Time (UTC))*

C. Position: latitude and longitude
or
D. Position: true bearing and distance

E. True course (as a three digit group)

F. Speed (in knots and tenths of a knot as a 3-digit group)

L. Route information – details of intended track

M. Full details of radio stations and frequencies being guarded

N. Time of next report *(Note: Time must be expressed as Coordinated Universal Time (UTC))*

P. Type and quantities of cargo and bunkers on board

Q. Brief details of defects, damage, deficiencies or other limitations.
These must include the condition of the vessel and the ability to transfer cargo, ballast or fuel

AMSA 197 (10/14) Page 1 of 2

R. Brief details of actual pollution. These should include the type of oil, an estimate of the quantity discharged, whether the discharge is continuing, the cause of the discharge and, if possible, an estimate of the movement of the slick

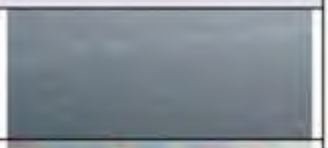
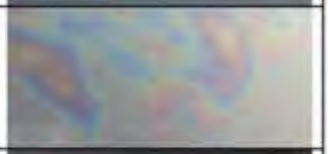
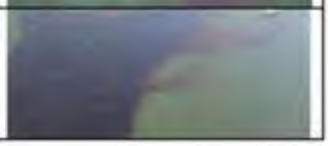
Appendix 9: Initial Assessment Checklist

STATUS BOARD 2 — INITIAL ASSESSMENT

10 Questions of Spill Assessment

What is it?	*Oil Type* *Oil Name* *Oil Properties* *Specific Gravity/Viscosity/Pour Point* *Asphaltenes/Wax Content/Boiling Point @ 200C*
Where is it?	*Lat/Long* *Distance and Bearing*
How big is it?	*Area* *Volume* *Colour Appearance*
Where is it going?	*Weather Conditions* *Currents and Tides*
Is the source contained?	*Instantaneous or Continuous Release*
What is in the way?	*Resources/Sensitivities at risk*
When will it get there?	*How much time do you have to respond?* *Basic spill trajectory modelling*
What is happening to it?	*Weathering process*
What is the worst credible scenario?	*What if?* *So what?*
What can we do?	

Appendix 10: Bonn Agreement Reference Diagrams

Code	Description / Appearance	Layer Thickness Interval (Microns)	Litres per km^2	Typical Appearance
1	Sheen (silver / grey)	0.04-0.30	40-300	
2	Rainbow	0.30-5.0	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	

Appendix 11: Aerial Surveillance Form

Aerial Surveillance

Aerial Surveillance is one of the quickest most effective ways of providing the IMT with real time information surrounding an oil spill. Aircraft provide a much better platform than vessels to observe, quantify and position the spill. Aerial Surveillance gives the IMT the ability to plan for and decide on response strategies early. It is the quickest way of providing the IMT with situational awareness surrounding an oil spill.

Fixed wing or rotary wing aircraft can be utilised to perform aerial surveillance; however some aircraft are better suited to further offshore than others. Considerations will need to be made prior to selecting an observation platform based on distance from shore, weather conditions and flight duration.

In order to properly quantify the oil on water, trained aerial observers are required to implement the Bonn Agreement Oil Appearance Code (BAOAC) (See Appendix 9).

This technique allows a trained aerial observer to accurately estimate the quantity of oil on water based on how it looks. The different appearance corresponds with different thicknesses, combined with area calculations and coverage estimates, equates to a volume estimation.

Trained aerial observers are available via the AMOSC membership and can be stood up within 4 hours of activation. Aerial Observation is typically performed twice a day to get current, accurate positional data of the oil spill, along with up-to-date quantification data. This data can be used to help improve Oil Spill Trajectory Modelling predictions and help guide operational and planning decisions in the IMT.

Incident		**Date**		**Observers**	
Aircraft Type		**Call Sign**		**Area of Survey**	
Survey Start Time		**Survey End Time**		**Average Altitude**	
Wind Speed (knots)		**Wind Direction**		**Notes**	
Cloud Base (feet)		**Visibility (nm)**			
Time High Water		**Time Low Water**			
Current Speed (nm)		**Current Direction**			

SLICK DETAILS

Slick	TIME local	SLICK (CNTR or START)		SLICK (END)		SLICK ORIENT Degrees	OIL SLICK LENGTH			OIL SLICK WIDTH			AREA km²	COVERAGE %	OILED AREA km²
		LAT N/S	LONG E/W	LAT N/S	LONG E/W		SOG kt	TIME Seconds	DISTANCE km	SOG kt	TIME Seconds	DISTANCE km			
A															
B															
C															
D															
E															

Slick	OIL APPEARANCE COVERAGE - %						MINIMUM VOLUME - m³	MAXIMUM VOLUME - m³	TYPE OF DETECTION (etc. visual, IR)
	1	2	3	4	5	OTH			
A									
B									
C									
D									
E									

THE BONN AGREEMENT OIL APPEARANCE CODE (BAOAC)			
No	OIL APPEARANCE	MIM. VOLUME m3 / km2	MAX. VOLUME m3 / km2
1	SHEEN	0.04	0.30
2	RAINBOW	0.30	5.00
3	METALLIC	5.00	50.0
4	DISCONTINUOUS TRUE COLOUR	50.0	200
5	TRUE COLOUR	200	>200

NOTE: *Ground Speed (SOG) is the speed of the aircraft relative to the ground (sea) measured in knots (kt). One knot is one nautical mile (nm) per hour.*

1 kt = 1 nm per hour = 1.85 Kilometres (km) per hour = 0.03 km (31m) per minute = 0.0005 km per second

EXAMPLE: A helicopter, flying at 80 knots, takes 120 seconds to fly along the length of an oil slick.

(Speed x Time = Distance) 80 knots x 120 seconds =/ 80 x 1.85 x 120 / 60 / 60 = 148 kph x 0.03 hr = 4.9 km

Appendix 12: Shoreline Assessment Guide and Form

Shoreline Assessment Form

Please ensure that a hazard risk assessment has been carried out prior to commencing the activity.

1. ASSESSMENT DETAILS:				
Incident name:		**Location:**		
Survey Date:	*(DD/MM/YY)*	**Survey Time:**	**From:**	**To:**
Team Leader:		**Team Members:**		
Reporting to:		**Position/Organisation:**		
Date rec'd (FOB/IMT):		**Time received:**		
2. LOCATION DETAILS				
Sector:		**Segment:**		
Survey Start GPS:		**Survey End GPS:**		
Access:	Ensure Traditional Owners have been consulted and requirements met for access			
	☐ Foot ☐ Road ☐ 4WD ☐ Boat ☐ Helicopter ☐ UAV ☐ ATV			
Weather:	☐ Sun ☐ Clouds ☐ Rain ☐ Snow ☐ Fog ☐ Windy ☐ Calm			
Site Exposure:	☐ Exposed ☐ Semi-exposed ☐ Semi-protected ☐ Protected ☐ Unsure			
3. TIMING				
First Assessment:	☐ **Yes** ☐ **No**	**Last Assessment:**	☐ **Yes** ☐ **No**	
Timing:	☐ **Pre-Impact** – No oil on shoreline yet ☐ **Post-Impact** – Before clean-up ☐ **Post-Impact** – After or during clean-up			
Time Since:	**Impact (days/hrs):**		**Last Clean-up (days/hrs):**	

4. SHORELINE ASSESSMENT				
Parameter	**Shoreline Tidal Zones**			
	LITZ	**MITZ**	**UITZ**	**Supratidal**
Shoreline Description				
Shoreline Type:				
Substrate Type:				
Length of Shoreline (m):				
Width of Shoreline (m):				
Oil Distribution and Character				
Oil Cover Length (m):				
Oil Cover Width (m):				
Oil Cover (%):				
Oil Thickness:				
Oil Appearance:				
Depth of Buried Oil (cm):				
Buried Oil Description:				
Other				
Oiled Debris (Y/N?):				
Wildlife Observed (Y/N?):				

5. SENSITIVITIES		
Biological *e.g., species & habitat types*	**Economical** *e.g., profitable amenities/business*	**Sociological** *e.g., community/cultural sites*

Sketch Map: Please include North arrow and scale.

Comments: e.g. access, amenities, operational restrictions, wildlife, car-parks, lay-down facilities.

Appendix 13: KSAT Emergency Request Form

KSAT KONGSBERG SATELLITE SERVICES

Emergency Order Form

Call **+4777661300** ***AND*** email this form to: **emergency@ksat.no**

Customer Info

Client Name	Project Name	Contract Ref.	TEOS Procedure
AMOSC	AMOSC	Con-19-215	AMOSC 2019

Order form date (DD/MM/YYYY)

Client point of contact #1	Email	Phone

Client point of contact #2	Email	Phone

Area of Interest (AOI)

Shape file / kml file **OR** Center position – Lat / Lon — Coordinate format

Image acquisition time

☐ Order first possible image* **OR/AND** ☐ Generate feasibility study for approval – specify start /stop dates (max 5 days) / Additional comments on time, frequency, etc.

***NB: Order first possible image** constitutes a purchase order. Emergency orders carry additional fees as detailed in the contract # UI164285

Preferred satellites and modes to cover current emergency (select 1 per satellite)

1.Radarsat-2
- ☐ ScanSAR Narrow
- ☐ Wide
- ☐ Wide Fine
- ☐ Standard
- ☐ Fine
- ☐ Spotlight

2.TerraSAR-X/PAZ
- ☐ ScanSAR Wide
- ☐ ScanSAR
- ☐ Stripmap
- ☐ Spotlight (SL)
- ☐ HR Spotlight (HR)

3.Cosmo-SkyMED*
- ☐ ScanSAR - Huge Region
- ☐ ScanSAR – Wide Region
- ☐ StripMap - HIMAGE
- ☐ Spotlight – 2 (10x10)
- ☐ Spotlight – 2 (7x7)

Oil Season Services
- ☑ Oil Spill detection report

4.GAOFEN-3
- ☐ NSC
- ☐ SS
- ☐ FS-2
- ☐ FS-1
- ☐ UFS-1
- ☐ SL

5. SENTINEL 1A/B**
- ☐ Check short term availability

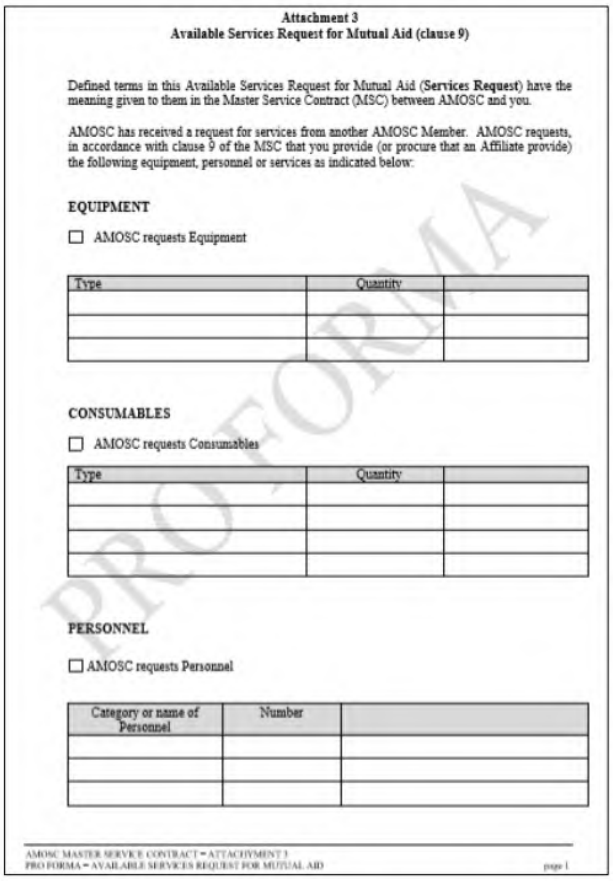
*2/3 DTO's are recommended per ordering of Cosmo-SkyMED
**Sentinel-1A/B cannot be tasked

Any other comments

Order Approval — Date — Place

Order Approved by:

Appendix 14: AMOSC Mutual Aid Request Form



Attachment 3
Available Services Request for Mutual Aid (clause 9)

Defined terms in this Available Services Request for Mutual Aid (**Services Request**) have the meaning given to them in the Master Service Contract (MSC) between AMOSC and you.

AMOSC has received a request for services from another AMOSC Member. AMOSC requests, in accordance with clause 9 of the MSC that you provide (or procure that an Affiliate provide) the following equipment, personnel or services as indicated below:

EQUIPMENT

☐ AMOSC requests Equipment

Type	Quantity	

CONSUMABLES

☐ AMOSC requests Consumables

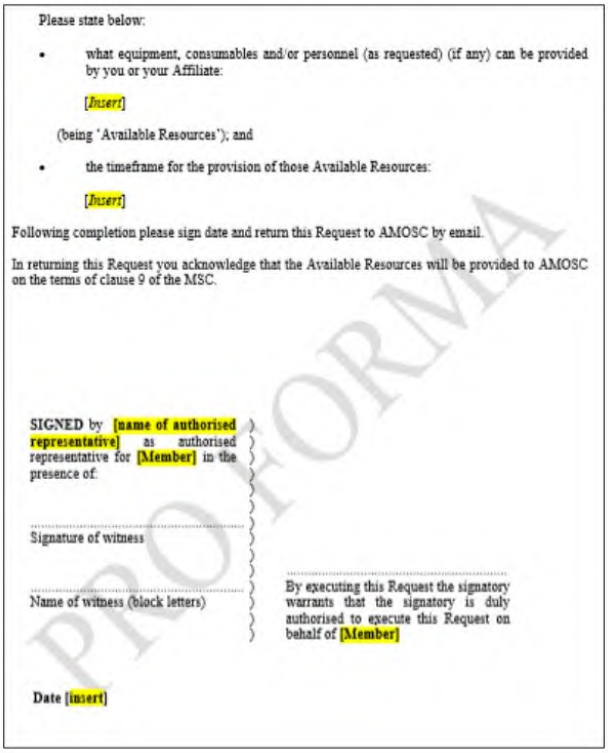
Type	Quantity	

PERSONNEL

☐ AMOSC requests Personnel

Category or name of Personnel	Number	

AMOSC MASTER SERVICE CONTRACT – ATTACHMENT 3
PRO FORMA – AVAILABLE SERVICES REQUEST FOR MUTUAL AID page 1



Please state below:

- what equipment, consumables and/or personnel (as requested) (if any) can be provided by you or your Affiliate:

  [*Insert*]

  (being 'Available Resources'); and

- the timeframe for the provision of those Available Resources:

  [*Insert*]

Following completion please sign date and return this Request to AMOSC by email.

In returning this Request you acknowledge that the Available Resources will be provided to AMOSC on the terms of clause 9 of the MSC.

SIGNED by **[name of authorised representative]** as authorised representative for **[Member]** in the presence of:

.....
Signature of witness

.....
Name of witness (block letters)

.....
By executing this Request the signatory warrants that the signatory is duly authorised to execute this Request on behalf of **[Member]**

Date [insert]