Offshore Victoria Oil Pollution Emergency Plan

Victoria | ER | EMP

ATTENTION: For First Strike (initial 48hrs)
Response Actions see:
Section 2.4 – 'Regulatory Notifications'
Section 2.5 - 'Action Sequence Checklists'

Purpose

To instruct the response to an unplanned release of hydrocarbons

Scope

The OPEP provides response instructions for vessels and facilities including:

Otway Subsea Facilities: Casino, Henry, Netherby, Otway Exploration Drilling

Gippsland Subsea Facilities: Patricia Baleen, Sole

Role	Job Title	Signature	Document Control
Document Originator:	Environment Consultant		**Doc No.** VIC-ER-EMP-0001
Document Reviewer:	Environment Advisor		**Rev:** 11
Document Approver:	Manager Environment & Sustainability		**Rev Date:** August 2024

Health, Safety and Environment Policy

Cooper Energy | HSEC | Policy

This policy describes our approach to managing Health, Safety and Environmental risks at Cooper Energy

Our Commitment

Cooper Energy is committed to taking all reasonably practicable steps to protect the health and safety of our workers, contractors, partners, and the communities in the areas where we operate.

In addition, we will ensure our business is conducted in an environmentally responsible manner.

Our Actions

We will:

- **Integrate** health, safety and environmental requirements into our daily work, our business planning and our decision making
- **Comply** with all relevant health, safety and environmental laws and regulations
- **Provide** resources and systems to enable delivery of our health, safety and environmental objectives
- **Identify, control and monitor** risks that have the potential to harm people and the environment to as low as reasonably practical
- **Empower** our people, regardless of position, to "Stop the Job" if they consider it necessary to prevent harm to themselves, others or the environment
- **Consult, communicate and promote participation** of our workforce to build and maintain a strong health, safety and environment culture
- **Ensure** all employees and contractors are trained, competent and suitably supervised so that works are undertaken in a safe and environmentally responsible manner
- **Collaborate** proactively with our stakeholders and the communities where we operate
- **Investigate and learn** from our incidents and from those in our industry
- **Set, measure and monitor** health, safety and environmental targets to drive continuous improvement in our performance
- **Report** publicly and transparently on our health, safety and environmental performance

Governance

The **HSE Improvement Forum** has oversight of this policy. The Managing Director is accountable for communicating this Policy and for ensuring compliance with its undertakings. All **Executive Leadership Team** members and Managers shall ensure the effective implementation, management and monitoring of our HSE Management System and its subsequent outcomes.

All Staff are responsible for compliance with our policy, standards, and procedures.

This policy will be reviewed at appropriate intervals and revised as necessary to keep it current.

Policy authorised by

Jane Norman
Managing Director & CEO
Date: 13 July 2023 Review Date: 13 July 2026

Contents

List of Tables

List of Figures

1 Scope of OPEP

This Offshore Victoria Oil Pollution Emergency Plan (OPEP) (VIC-ER-EMP-0001) has been prepared to support Cooper Energy's Limited (Cooper Energy) assets and activities in offshore Victorian waters.

The OPEP consolidates Cooper Energy's response to all spill risks across the Patricia-Baleen (PB) and Sole) (Figure 1-1) and Otway (Casino, Netherby and Henry (CHN), and Otway exploration) (Figure 1-2) assets, given the commonality of many of their oil spill risks and resources to respond. Where there are specific requirements for scenarios associated with assets or activities, these are described in this plan.

This OPEP has been prepared in accordance with Regulation 22(8) (9) (10) (11) of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations (OPGGS(E)R) 2023 Commonwealth (Cth) and Regulation 17 of the Offshore Petroleum and Greenhouse Gas Storage Regulations (OPGGSR) 2021 Victoria (Vic).

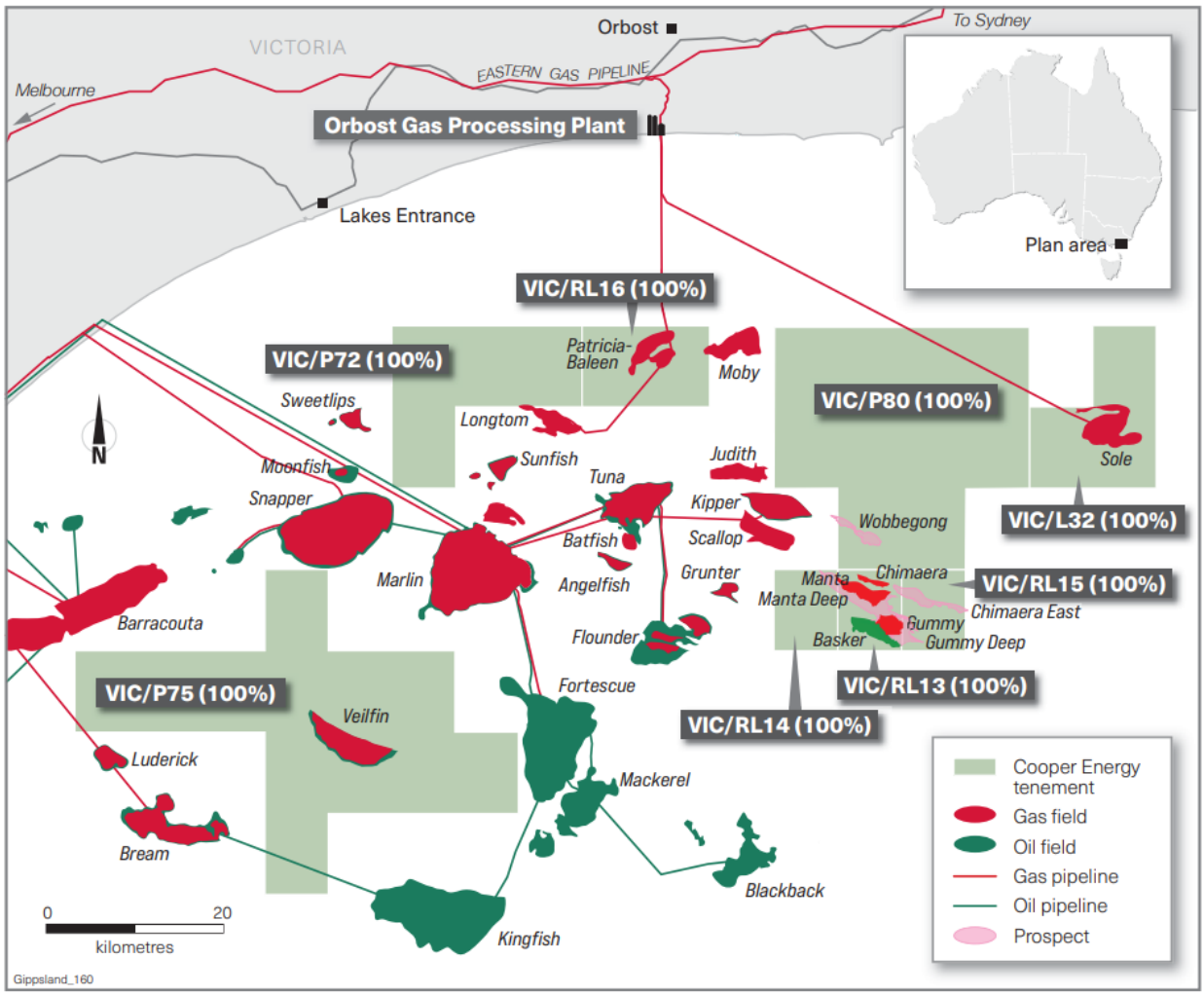


Figure 1-1: Cooper Energy Offshore Gippsland Assets

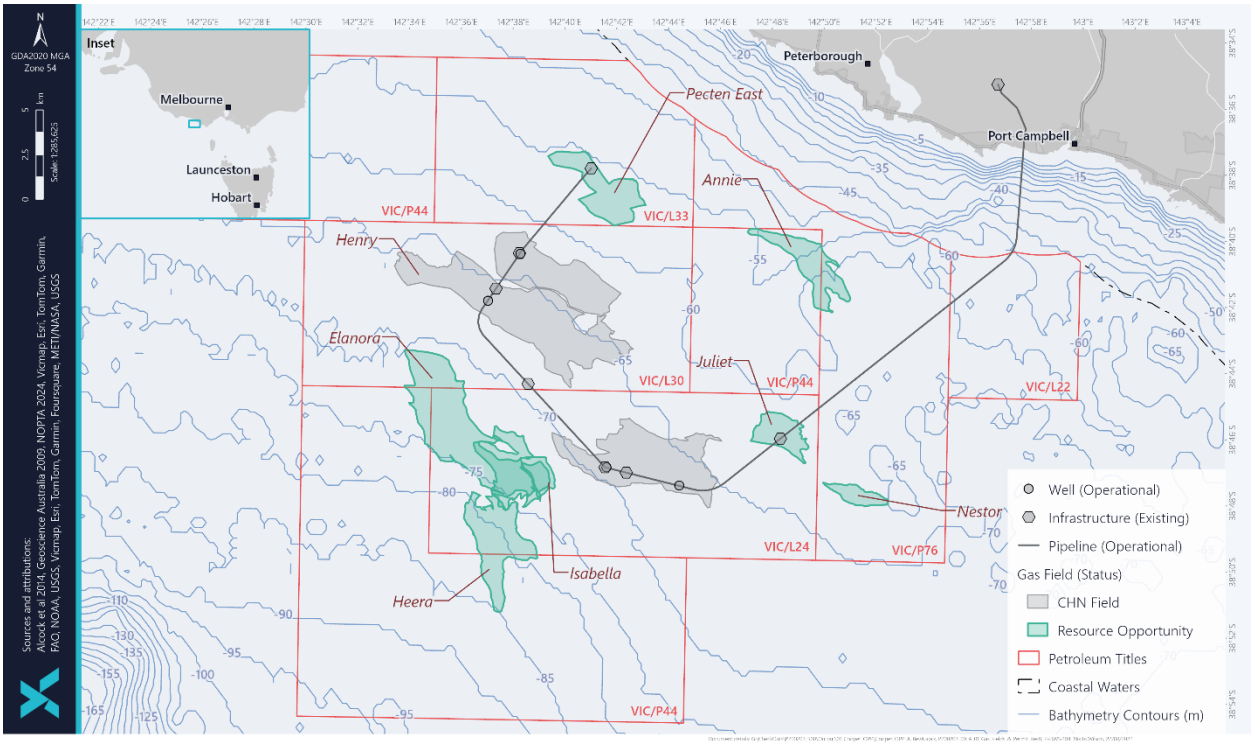


Figure 1-2: Cooper Energy Offshore Otway Assets and resource opportunities

1.1 Facilities and Activities Relevant to the OPEP

The spill scenarios for the assets and activities described in Table 1-1 are identified in the corresponding Environment Plans (EP).

Table 1-1: Facilities and Activities within the Scope of the Offshore Victoria OPEP

Asset	Description	Activities	Fluid Types
PB – Gippsland Basin	Gas and condensate infrastructure (temporary suspended) located in petroleum titles VIC/RL16, VIC/PL31 and VIC/PL31(V) from the VIC/PL31 tie-in point to the Longtom Pipeline (VIC/PL38) to the Victorian shoreline (mean low water mark).	PB non-production phase activities which includes integrity management on the following offshore assets in Commonwealth and Victorian state waters: • two subsea production wells, Patricia -2 and Baleen-4 (currently shut-in) in 54 m water depth • one suspended well (Patricia-1) in 54 m water depth • 24 km x 300 mm (ND) subsea pipeline from Patricia-2 and Baleen-4 wells to shore. The pipeline is non-operational and suspended. It contains nitrogen (4,550 m^3), natural gas (2,700 m^3), residual Longtom condensate (5 m^3) and Mono-ethylene glycol (MEG) / water mixture (150 m^3 in a 40:60 ratio)	Gas and condensate Hydraulic fluid Nitrogen MEG Marine diesel oil (MDO)

Asset	Description	Activities	Fluid Types
		• a subsea umbilical located 20 m to the west of the pipeline running from the gas plant to the subsea wells.	
Sole – Gippsland Basin	An operating gas field located in petroleum title VIC/L32, ~32 km south of the Bemm River in Victoria. Includes Sole wells connected to the Orbost Gas Plant via Licenced Pipeline VIC/PL43 and VIC/PL006401(V), a 65 km subsea pipeline and umbilical cable.	Sole operations activities which include integrity management of the following assets and activities in Commonwealth and Victorian state waters: • two subsea producing wells (Sole-3 and Sole-4) in 124 m water depth • one plugged and abandoned well (Sole-2) in 125 m water depth • operations of pipeline to the Orbost Gas Plant • a subsea umbilical located 20 m to the west of the pipeline running from the gas plant to the subsea wells.	Gas and condensate Hydraulic fluid MEG MDO
Otway stage I & II – Otway Basin	A gas and condensate infrastructure servicing subsea completions in the CHN fields located in petroleum titles VIC/L24 (Casino) and VIC/L30 (Henry and Netherby) and Licensed Pipelines VIC/PL37, VIC/L42 and Vic/PL37 (V) from the gas fields to the Victorian shoreline (shore crossing location).	Operations and maintenance activities on the following facilities in Commonwealth and Victorian state waters: • subsea wells (Netherby-1, Casino-4, Casino-5 and Henry-2) in ~63-70 m water depth • 32.6 km x 300 mm Nominal Diameter (ND) subsea pipeline (Casino-5 well to shore-crossing) • 22 km x 300 mm ND subsea pipeline (Casino-5 to Pecten east pipeline) • 31.2 km x 120 mm Electro-hydraulic umbilical (EHU) cable (Casino-5 to shore crossing) • 22 km x 135 mm EHU cable (Casino-5 to Netherby-1 well).	Gas and condensate Hydraulic fluid MDO
Otway Basin	A proposed scope for the well construction located in the petroleum titles VIC/L24 and VIC/P76 in the Otway Basin in Commonwealth waters.	Well construction activities for the following proposed well locations within Commonwealth waters: • Subsea wells (Juliet-1, Nestor-1, And Elanora-1) in ~ 63-74 m. • One contingent subsea well (Elanora-1 ST1) in ~74 m water depths.	Gas and condensate Hydraulic fluid MDO

1.2 Spill scenarios

Table 1-2 describes the spill scenarios for which this OPEP has been developed.

Table 1-2: Spill scenarios for this OPEP

Spill Risk*	Fluid type	Worst-Case Volume*	PB	Sole	Otway
Loss of Containment (LoC) minor spill (level 1)	MDO, hydraulic oil	Up to 50 m^3	✓	✓	✓
Vessel LoC (collision) (level 1/2)	MDO	250 m^3 surface release over 6 hours. 500 m^3 surface release over 6 hours.	✓	✓	✓
Subsea LoC (pipeline or infrastructure leak) (level 1/2)	Gas / condensate / diesel	PB: 5 m^3 Longtom condensate, 2,700 m^3 gas Sole: 0.5 m^3 Otway: 50 m^3	✓	✓	✓
Loss of well control (LOWC**) (level 1)	Gas / condensate	PB: 24.4 MMscf/d gas (0.4 m^3/d) Sole: 160 MMscf/d gas (1.6 m^3/d) Otway: 41 MMScf/d (0.1 m^3/d)	✓ (Cth)	✓ (Cth)	✓ (Cth)
Loss of well control (LOWC) (level 2/3)	Gas / condensate	Up to 16,740 m^3 subsea release over 102 days			✓ (Cth)

** Further details regarding worst-case discharge volumes, discharge locations, potential release durations and environmental impacts and risks are detailed within each relevant activity-specific EP.*

***These scenarios require unconstrained flow from the well, this is not considered credible during steady state operations (SOL-DC-WMP-0001, CHN-HS-SMP-0001).*

The Environments that May be Affected by worst case scenario spills, as informed by stochastic modelling is shown below for the Otway Visiting Vessel MDO Spill (Figure 1-3), Otway (East Coast Supply Project Drilling) LOWC Spill (Figure 1-4), and Gippsland Facilities MDO Spill (Figure 1-5 to 1-7). Note, due to the low volumes of liquids produced with the gas in the Gippsland fields, stochastic spill modelling has been completed for an MDO spill only; a loss of containment from infrastructure would be expected to be much lower liquids volume and well within the MDO spill scenario EMBA.

Figure 1-3: Combined oil EMBAs for Otway (Visiting Vessel) MDO Spill Scenario

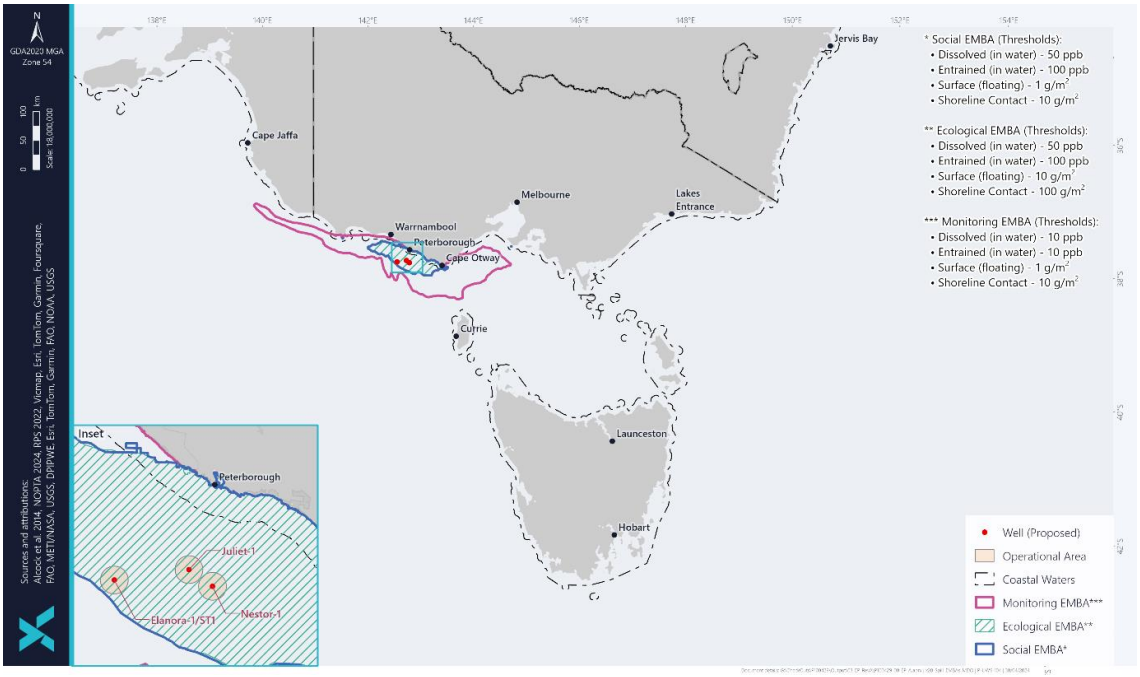


Figure 1-4: Combined condensate EMBAs for Otway (East Cost Supply Project) Drilling LOWC Spill Scenario

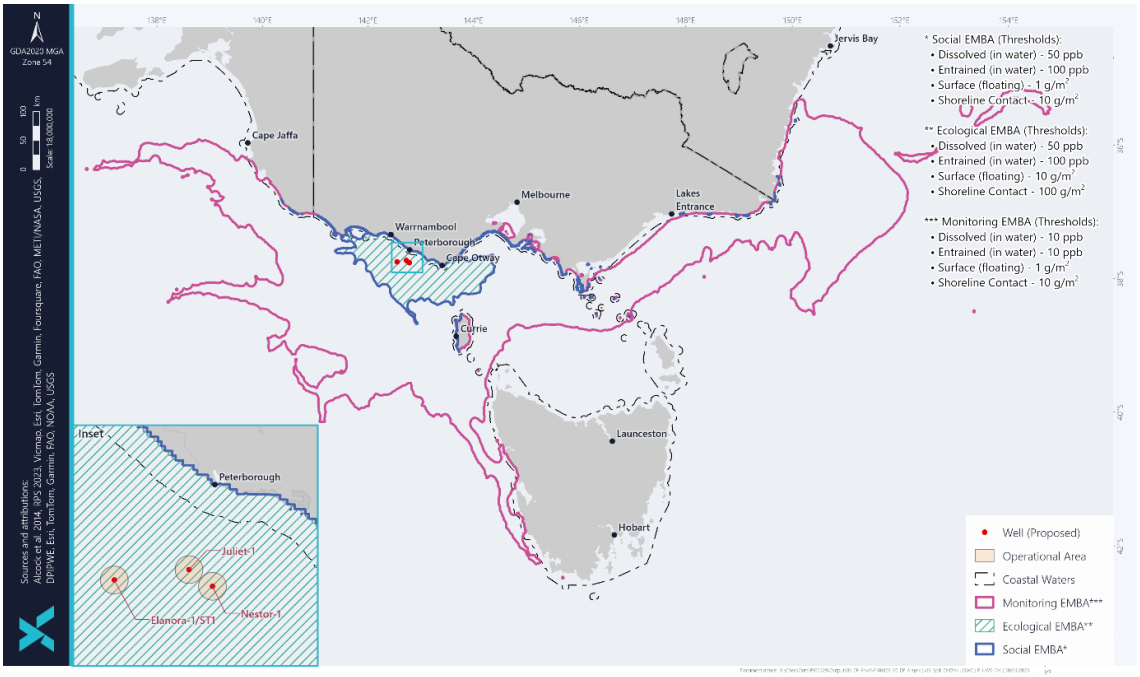


Figure 1-5: Shoreline oil EMBAs for Gippsland (Visiting Vessel) MDO Spill Scenario

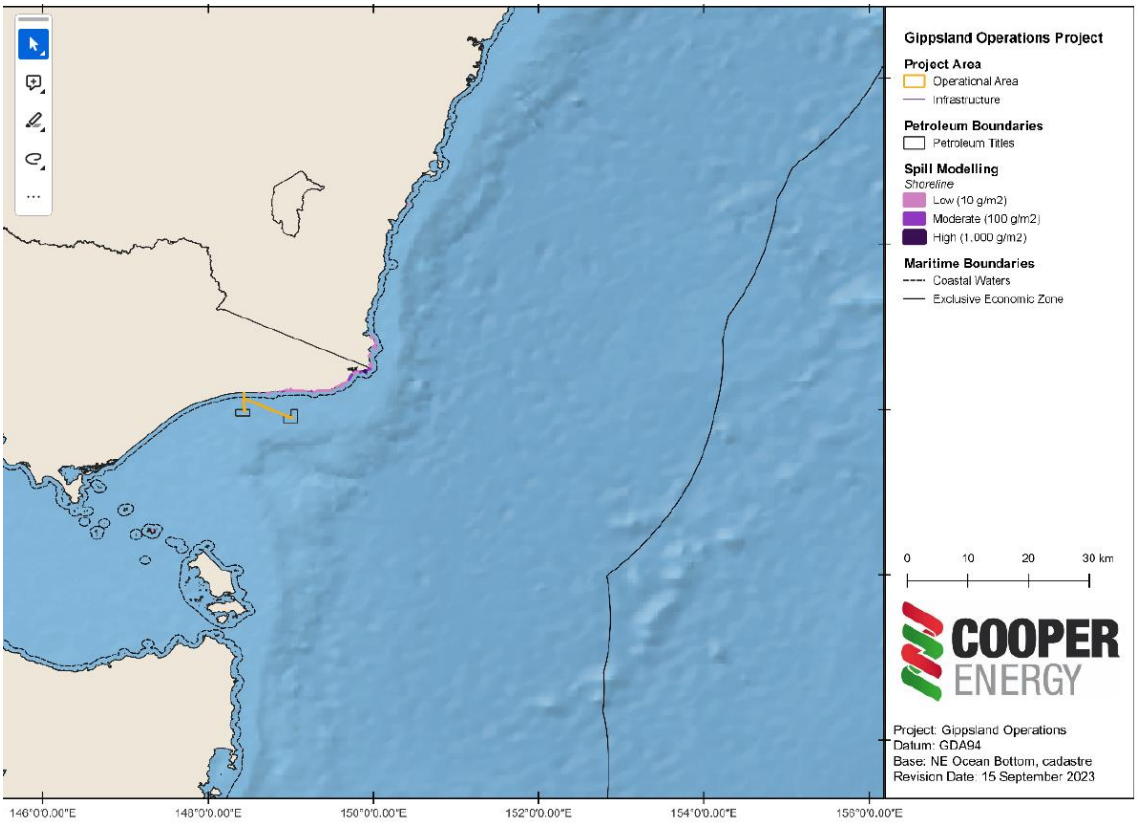


Figure 1-6: Shoreline oil EMBAs for Gippsland (Visiting Vessel) MDO Spill Scenario

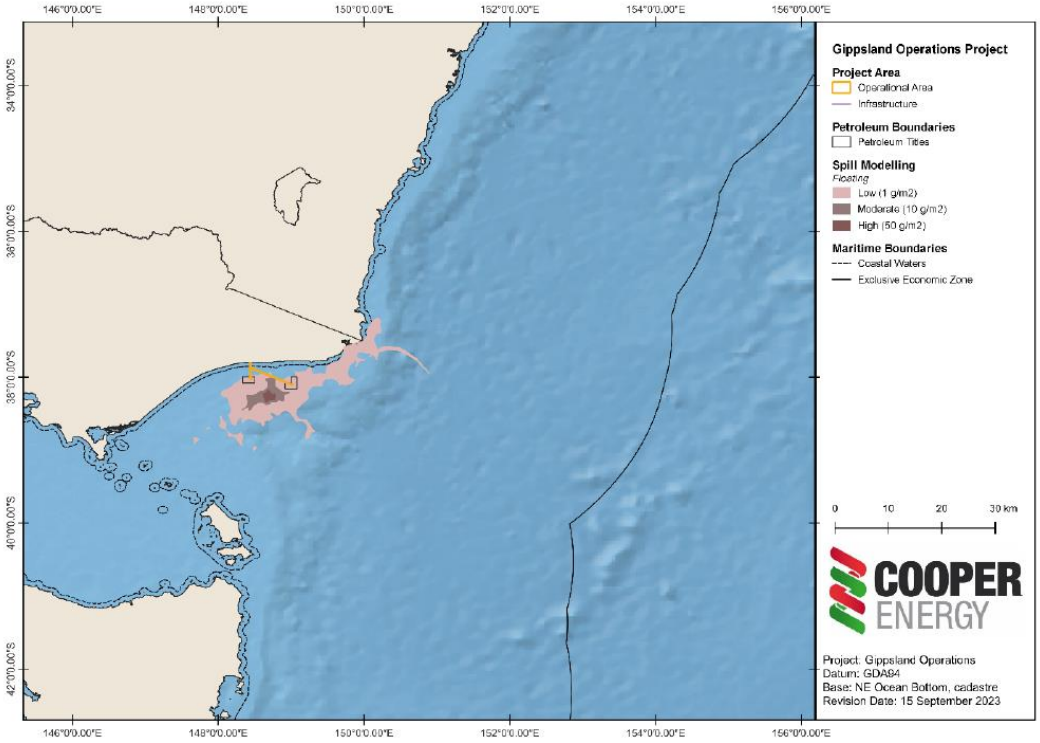
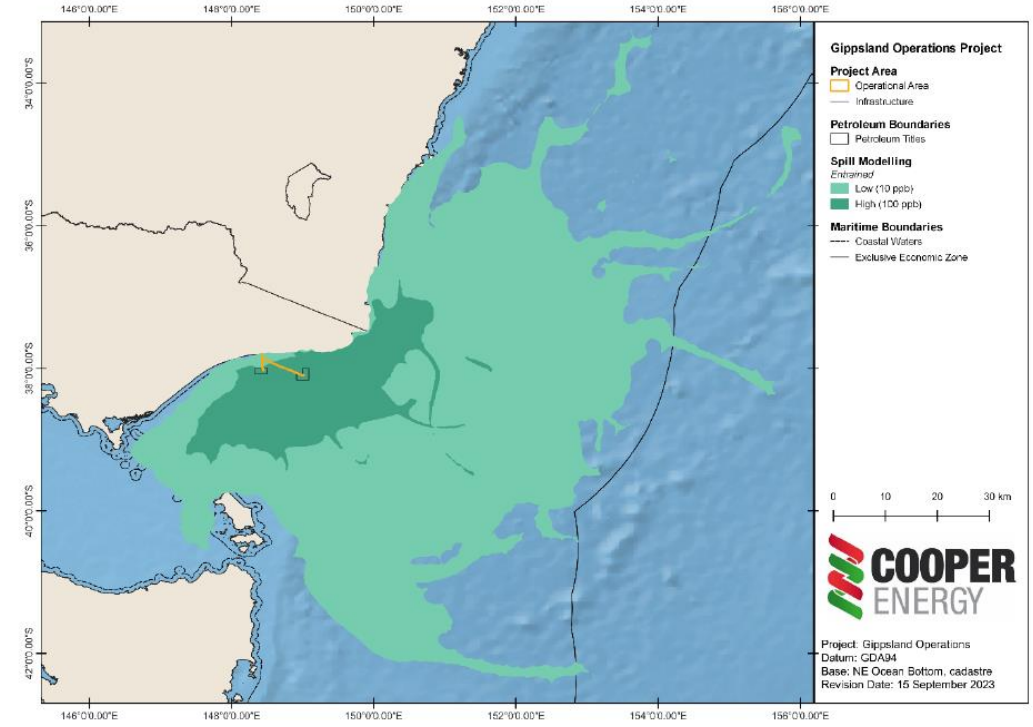


Figure 1-7: Entrained oil EMBAs for Gippsland (Visiting Vessel) MDO Spill Scenario



1.3 OPEP Exclusions

This OPEP does not include the following:

- the Longtom development (consisting of production wells, pipeline and associated subsea infrastructure) tied into the offshore PB assets, these are managed by the Longtom asset owner
- onshore spill scenarios including gas plants
- assets not defined in Section 1.1 of this OPEP.

1.4 Supporting documents

Cooper Energy manages emergencies from the offshore operations and activities in accordance with the Cooper Energy Incident Management Plan (IMP) (COE-ER-ERP-0001). The purpose of the IMP is detailed in Section 2.1.

This OPEP is integrated with the IMP and related documentation and supports the in-force EPs for the offshore Victoria assets and activities. The OPEP should be read in conjunction with the respective EPs as well as the supporting documents:

- Cooper Energy IMP (COE-ER-ERP-0001)
- Cooper Energy Crisis Management Plan (CMP) (COE-ER-ERP-0003)
- Offshore Victoria Source Control Plan (VSCP) (VIC-DC-ERP-0001)
- Offshore Victoria Operational and Scientific Monitoring Plan (OSMP) (VIC-ER-EMP-0002)
- Tactical Response Plan – shoreline protection and clean up
- Tactical Response Plans (site-specific)
- Vessel shipboard marine pollution emergency plan (SMPEP) or equivalent and Emergency Response Plans (ERPs) for vessels undertaking activities on Cooper Energy's behalf.

Additionally, this OPEP has been developed to integrate with the:

- Australian National Plan for Maritime Environmental Emergencies (NatPlan) (AMSA 2020)
- Victorian Maritime Emergencies (non-search and rescue [NSR]) Subplan (State of Victoria 2021)
- New South Wales (NSW) State Waters Marine Oil and Chemical Spill Contingency Plan (NSW Government 2016)
- Tasmanian Marine Oil Spill Contingency Plan (TasPlan) (EPA Tasmania 2022)
- South Australian Marine Spill Contingency Action Plan (SAMSCAP) (Government of South Australia 2022)
- Australian Marine Oil Spill Plan (AMOSPlan) (AMOSC 2021).

Figure 1-8 details the relationship between this plan and other related documentation.

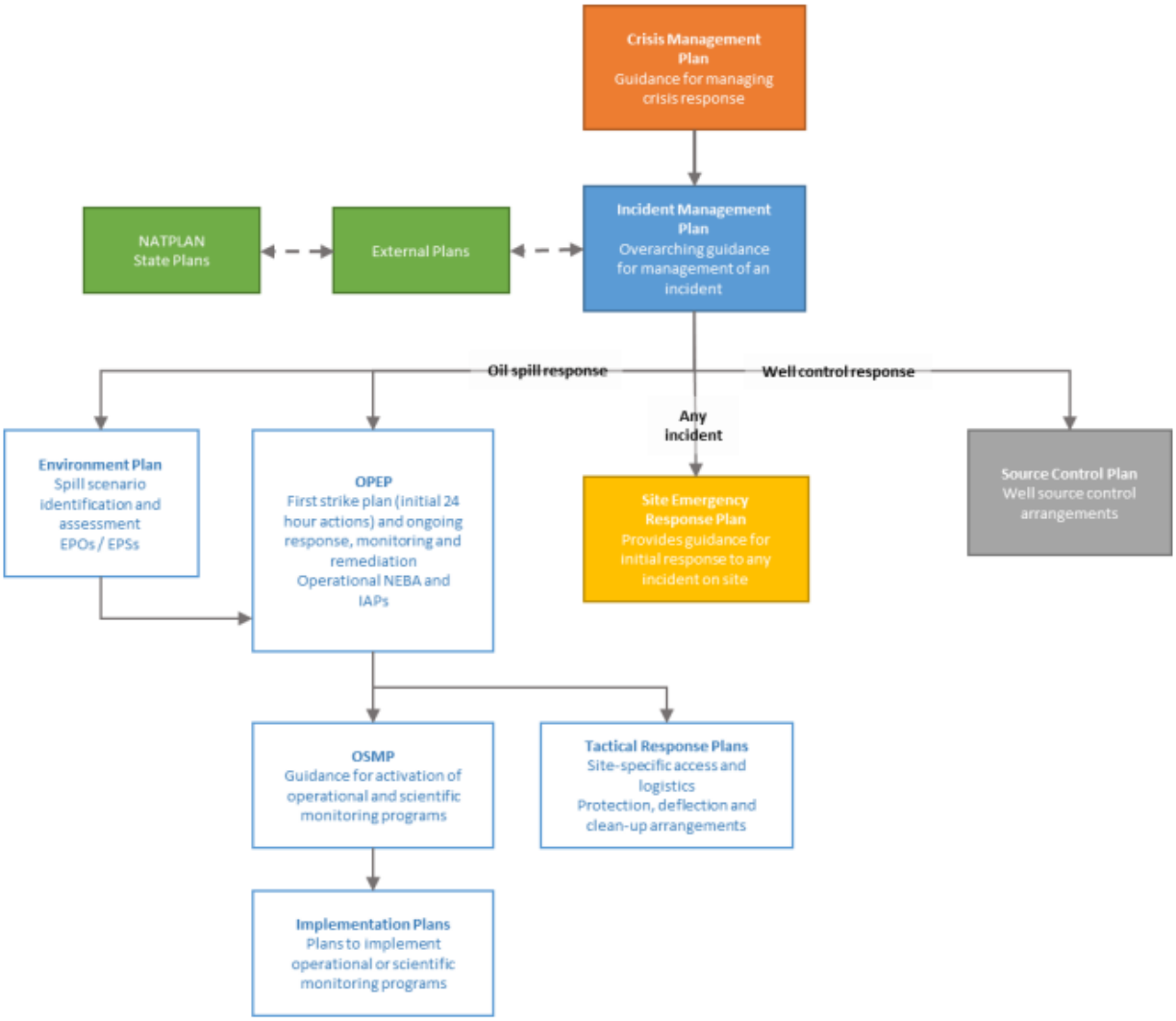


Figure 1-8: Relationship Between Cooper Energy Emergency and Oil Response Plans

1.5 Review of OPEP

Internal OPEP Reviews

The OPEP should be reviewed internally at least annually, in addition to the following circumstances:

- prior to undertaking a new activity not currently provided for, and prior to the submission or re-submission of a new EP for activities, in accordance with the management of change (MoC) process
- following any exercises or other means of testing of the arrangements, as required, to capture learnings
- following activation, to capture lessons learned.

Changes to the OPEP or the OSMP resulting from exercise outcomes, altered contractual arrangements, corrective actions, routine information updates (i.e. contact details change), or other items will be managed as per the MoC process.

State Government OPEP Review Arrangements

From the Victorian Joint Industry and State Oil Pollution Responses Guidance Note (DTP 2023):

It is recognised that after an OPEP is accepted, titleholders may incorporate additional assets and update its OPEP during the 5-year lifespan before re-submission to NOPSEMA. In such circumstances, timely notification and consultation is required should these asset(s) alter or increase the likelihood or threat of pollution, and/or pose a significant difference to the spill scenario modelled in the original OPEP such as including a different product.

Any internal/organisational alterations to titleholder response arrangements detailed in their OPEPs such as emergency management structure amendments, do not necessitate further consultation. However, to promote an ongoing partnership and enhance collaborative engagement, amendments would be useful to share electronically between titleholder and Department of Transport and Planning (DTP).

This process is relevant to New South Wales (NSW), Tasmania (Tas), and South Australia (SA) marine pollution agencies (where relevant), unless otherwise advised by those teams.

1.6 Training and Testing Arrangements

In accordance with Regulation 22(13b) (14) of the OPGGS(E)R, the response arrangements will be tested:

- when they are introduced
- when they are significantly amended
- not later than 12 months after the most recent test
- if a new location for the activity is added to the EP after the response arrangements have been tested, and before the next test is conducted – testing the response arrangement in relation to the new location as soon as practicable after it is added to the plan
- if a facility becomes operational after the response arrangements have been tested and before the next test is conducted – testing the response arrangements in relation to the facility when it becomes operational.

The effectiveness of response arrangements will be measured by the Performance Standards detailed in Table 1-3 for each exercise type. At the completion of the exercise, the observers (where relevant to the test) and participants will hold a debrief session during which the exercise is reviewed, and lessons learned and areas for improvement are identified. All exercises will be documented, and corrective actions/recommendations tracked to closure. For Cooper Energy exercises, lessons learned, and actions will be captured via action tracking system (e.g. Synergi).

Training and testing arrangements appropriate to the nature and scale of Cooper Energy's activities are included in Table 1-4. The arrangements detail those actions which will be undertaken by Cooper Energy and response partners to maintain readiness for the oil spill response scenarios. Position specific training and competency provisions are detailed in Section 3.2. Response organisations such as Australian Marine Oil Spill Centre (AMOSC), State and National response teams also run testing and exercise regimes to maintain preparedness for credible spill events across a broader portfolio of areas and activities; these are outlined below but do not form part of Cooper Energy's specific training and exercise plans for the activity.

Table 1-3: OPEP Testing Performance Outcomes, Standards, and Measurement Criteria

Performance Outcome	Control	Performance Standards	Measurement Criteria
Response personnel are trained and prepared to respond to a worst-case spill scenario for the activity. The OPEP is implemented and is effective in mitigating a spill event.	C1 Response training.	Response personnel are trained according to schedule.	• training records.
	C2 Response exercise and testing.	Exercise and testing are completed according to schedule.	• exercise and testing plan progress tracked via Synergi.
		Lessons from exercises and testing are captured, actioned and integrated into the relevant part of the OPEP.	• exercise report including observations and opportunities for improvement • actions are managed through Synergi.

Table 1-4: OPEP Training and Testing Schedule and Objectives

Aspect	Who	Plan	Timing	Preparedness Activity Scope (Arrangements and Capabilities tested)	Training/Testing Objectives	Indicative duration	Evaluation / lessons learned
Training	Cooper Energy	OPEP	5 years renewal.	International Maritime Organization (IMO) oil spill response training for Incident Management Team (IMT), Forward Operations Base (FOB) and Field Team Lead Roles.	Demonstrated competency to undertake lead role in an IMT.	3-5 days	Feedback during training.
Training	Cooper Energy	OPEP	On joining the IMT, FOB or Field Team.	Offshore Victorian OPEP induction for: • IMT • FOB • Field Team Lead and Support Roles. OPEP induction covers aspects including titleholder obligations, Scenarios, hydrocarbon fate/behaviour, response documents, response organisation, response options, response termination and debrief.	Demonstrated understanding of OPEP responses, roles, and support services.	1.5 hours	Feedback during training.
Training	AMOSC & AMOSC Core Group	AMOSC Plan	Every 2 years.	IMO oil spill response training for IMT, FOB and Field Team Lead Roles, and training of specialist roles such as aerial surveyor. Training provided in accordance with AMOSC core group agreement.	Demonstrated competency to undertake lead role in an IMT.	3-5 days	Feedback during training.
Training	Cooper Energy	Source Control Emergency Response Plan (SCERP)	Valid during well activities.	Current well control training certificate for relevant Source Control Team Leads.	Demonstrated competency to undertake lead role in source control team task groups.	3-5 days	Feedback and testing during training.
Training	Cooper Energy	OPEP	Annually.	Incident control system refresher training for IMT Incident Commander (IC) and Functional Leads.	Understanding of IMT incident control system.	1 hour	Feedback during training.
Exercise	Cooper Energy & AMOSC	OPEP	Annually.	OPEP drill (Desktop): • IMT response teams form and initiate alert and call-out of response teams to respective incident control centres • notifications to regulators undertaken within the regulatory timeframes (simulated) • first-strike response operation activated monitoring and surveillance (simulated) within implementation timeframes • contact external resources to confirm support first strike response • common operating picture established • Incident Action Plan (IAP) generated for the next operational period integrating information from monitoring and surveillance and net environmental benefit assessment (NEBA) recommendations.	IMT Roles are provided for, and responsibilities are understood. IMT communications and systems support coordinated and efficient response. Capability to develop IAP for the next operational phase of a response. Response Option Initiation inside OPEP implementation timeframes. External resources are available to respond.	1 day	Observer for the duration of the drill. Evaluation against the planned scope and objectives.

Aspect	Who	Plan	Timing	Preparedness Activity Scope (Arrangements and Capabilities tested)	Training/Testing Objectives	Indicative duration	Evaluation / lessons learned
Exercise	Cooper Energy & OSMP contractors	OSMP	Annually.	OSMP Drill: • call out of external resources for at least two OSMP module simultaneously (nominally hydrocarbon weathering assessment and coastal shoreline assessment [simulated scenario]) • test of logistical arrangements to meet implementation timeframes form nominated modules • confirm sufficient Principal Investigators for all OSMP Modules.	Response Options are initiated according to OPEP implementation timeframes. IMT-OSMP Contractor communications are established. External resources sufficient for a worst-case scenario for the activity are available to respond.	½ day	Evaluation against the planned scope and objectives.
Exercise	Cooper Energy	OPEP / Crisis Management Plan	Prior to well activities.	Crisis Management Team (CMT) will be notified during a level 2/3 incident and may need to provide support to the IMT: • CMT forms and establishes communications with the IMT IC • CMT obtain situational awareness • external notifications are issued (simulated) including media release.	CMT Roles are provided for, and responsibilities are understood. CMT-IMT Communication protocols are understood. Notifications developed efficiently.	2 hours	Observer for the duration of the drill. Evaluation against the planned scope and objectives.
Exercise	AMOSC, National and State response personnel	AMOSC Plan / NatPlan	Ongoing testing and exercise regime.	IMT Desktop and Operational exercises spanning all potential response strategies both nearshore and offshore including: • monitoring and evaluation • containment and recovery • chemical dispersant application • protection and deflection • shoreline response • wildlife response. These exercises involve field responders and use of response equipment.	In accordance with AMOSC Plan, National Plan and State Response Plan Testing and Exercise priorities.	5-10 days	Evaluation against the planned scope and objectives.

Aspect	Who	Plan	Timing	Preparedness Activity Scope (Arrangements and Capabilities tested)	Training/Testing Objectives	Indicative duration	Evaluation / lessons learned
Exercise	Cooper Energy	SCERP	Prior to well activities.	SCERP Drill: • SCERP Leads availability to implement selected source control options is verified • communications between leads are established • vessel and Mobile Offshore Drilling Unit (MODU) availability and mobilisation times are verified • equipment (reliefwell long leads) availability and mobilisation times are verified.	SCERP source control response times verified. Source control response logistics confirmed.	½ day	Evaluation against the planned scope and objectives.
Exercise	Cooper Energy and Response Contractors	OPEP / OSMP / SCERP	Annually May be undertaken with other exercises or separately.	Callout response contact details and personnel availability verification: • OPEP contractors • OSMP contractors • SCERP contractors.	Personnel required to implement OPEP, OSMP and SCERP are available to respond.	½ day	Evaluation against the planned scope and objectives.
Exercise	Cooper Energy Vessel Service Partners	OPEP	During mobilisation or transit to site.	Communications check between vessel and shore-based response personnel.	Incident notification channels are established.	30 minutes	Improvements are identified, logged and resolved.
Exercise	Vessel Service Partners	SMPEP or equivalent	Prior to and during offshore campaign according to vessel schedule.	Vessel SMPEP drills.	Personnel are familiar in their role and equipment available for SMPEP strategies.	2 hours	Evaluation against the planned scope and objectives.

1.7 Regulatory Responsibilities

This plan recognises that under existing Commonwealth and State Intergovernmental Agreements, authorities have been nominated with statutory and control responsibility for spills within harbours, State waters and Commonwealth waters around Australia.

Based on the spill modelling for the Cooper Energy Assets and activities; hydrocarbon exposure above the actionable contact thresholds for surface and shoreline hydorcarbons were only predicted to impact Victorian State waters and coastlines (Table 1-5). Therefore, it is likely Victorian Statutory and Control Agencies are considered to be the more likely to be involved in the immediate term. In the event that a spill has the potential to impact other State waters, the respective agencies listed below will be notified (Table 1-6).

Table 1-5: Summary of Potential Hydrocarbon Exposure from the Stochastic Modelling Results of the Worst Case Scenario by State Jurisdiction

Hydrocarbon Modelling Results		State			
		Vic	Tas	NSW	SA
Distance from Project		~10	>100	>500	>150
Floating	Is there potential for oil to reach state waters?	Yes	Yes	Yes	Yes
	What is the probability of floating oil in state waters above Low threshold (1g/m^2)?	100%	-	-	-
	What is the probability of floating oil in state waters above Moderate threshold (50 g/m^2)?	-	-	-	-
Entrained	What is the worst potential level of entrained oil in state waters (ppb)?	641	<50	<50	<50
Shoreline	Is there potential for oil to reach state coastline?	Yes	Yes	Yes	Yes
	Probability oil would reach shoreline (%)?	100%	29%	31%	7%
	What is the minimum time for oil to reach the coast (days)?	0.96	17.8	33	22
	What is the peak oil load on the coastline? (g/m^2)*	2,545	74	58	25
	What is the peak volume of oil that could arrive on the coast (m^3)?	406.3	8.9	4.1	6
	How much of the shoreline could be affected (km)?	268.1	21	7.3	9.1

- : No contact at the relevant thresholds.

*Note: Shoreline clean-up is typically only actionable when shoreline hydrocarbon contact threshold levels are >100 g/m^2.

While Cooper Energy remains accountable for spills relating to its petroleum activities, the Control Agency (CA) will vary depending on source, size and location of the spill. Table 1-6 provides a summary of Statutory Agency and CA scenarios in the event of a spill within Victorian waters.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has the regulatory responsibility for any activities in Commonwealth waters covered in this OPEP.

Although Victoria have conferred functions for the regulation of health and safety and structural integrity to NOPSEMA for petroleum activities occurring in State waters, State Authorities (as relevant) retain the regulatory responsibility for any spill response activities in State waters covered in the OPEP. The Department of Transport and Planning (DTP) is the CA for a spill response in Victorian waters. The Department of Energy, Environment, and Climate Action (DEECA) (formerly DELWP) is the lead agency for responding to wildlife impacted by marine pollution in Victorian waters or along the coastline.

The Tasmanian Environmental Protection Authority (EPA) is the CA for for marine pollution incidents within Tasmania, and the Wildlife Health and Marine (WHAM) division of the Department of Natural Resources and Environment Tasmania (NRE Tas) (formerly DPIPWE) will resume responsibilitity for wildlife impacted by pollution within Tasmanian waters.

NSW Maritime, Transport for NSW (or relevant Port Authority) is the CA for a spill response within New South Wales (NSW) waters and the NSW Environment Protection Authority (EPA) is the agency responsible for the oiled wildlife response in NSW waters.

For South Australia, the Department for Infrastructure and Transport (DIT) is the CA for a spill response in South Australian waters and the Department for Environment and Water (DEW) is the agency responsible for the administration and implementation of the wildlife response plan.

Table 1-6: Summary of Victorian Regulatory Responsibilities (Statutory and Control Agencies)

Spill Source	Spill Level	State Waters (<3 nm from coast baseline)	Commonwealth Waters (>3 nm from coast baseline)	Statutory Agency	Control Agency
Subsea LoC or LOWC	1	✓		State CA	Cooper Energy
			✓	NOPSEMA	Cooper Energy
	2/3	✓		State CA	State CA
			✓	NOPSEMA	Cooper Energy
Vessel Collision	1	✓		State CA	Vessel owner / Operator
			✓	Australian Maritime Safety Authority (AMSA)	Vessel owner / Operator
	2/3	✓		State CA	State CA / relevant Port Authority
			✓	AMSA*	AMSA
Wildlife	1	✓		State CA	-
			N/A**	-	-
	2/3	✓		State CA	-
			N/A**	-	-

** Within 500 m petroleum safety zone the statutory agency will be NOPSEMA*

*** Where wildlife is captured in Commonwealth waters and bought to shore for assessment and treatment, they will fall under the responsibility of the Lead Agency for Wildlife impacted by marine and freshwater pollution (e.g. DEECA for Victoria) and all relevant state-based legislation.*

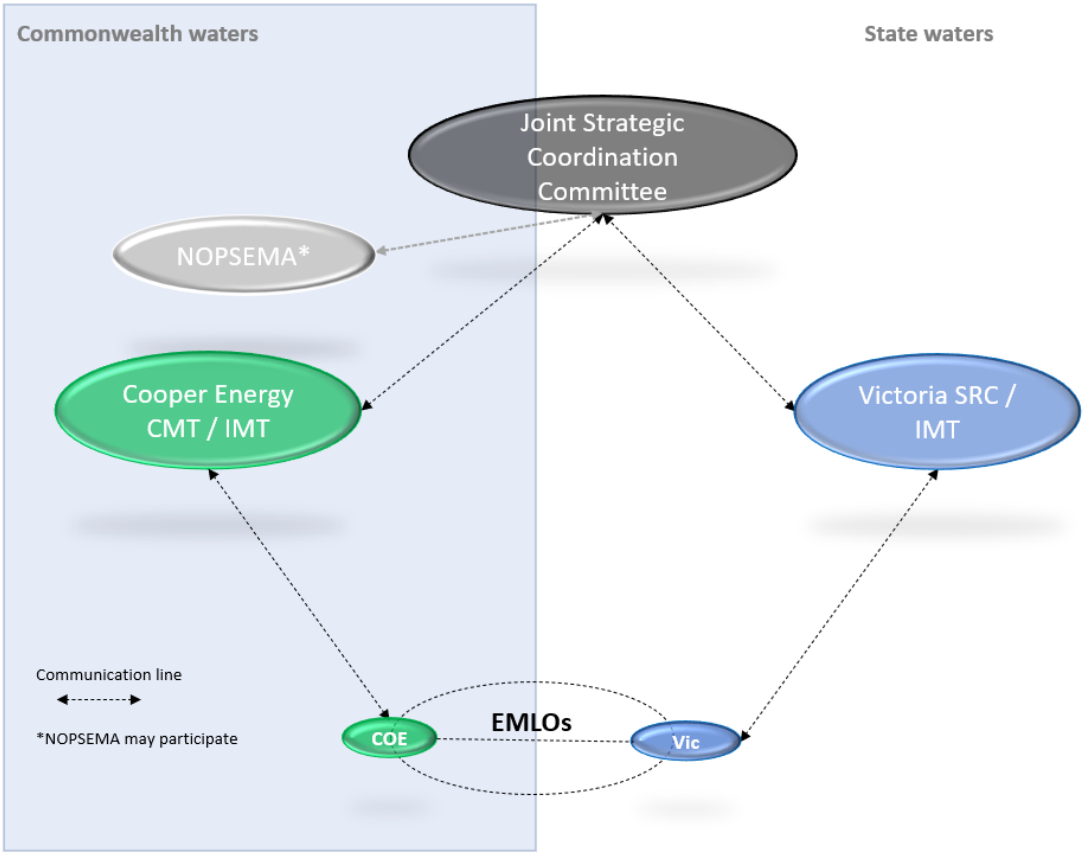
1.7.1 Joint Strategic Coordination Committee (Cooper Energy Interface with State Governments)

Figure 1-8 shows the control and coordination arrangements for cross-jurisdictional maritime emergencies. Transboundary arrangements from state to state is covered by the NatPlan. Where State and Commonwealth waters are impacted by cross-jurisdictional marine pollution incidents, a Joint Strategic Coordination Committee (JSCC) will be established. The role of the JSCC is to facilitate effective coordination between Cooper Energy and the State CA IMTs.

Initiation: Initially, the JSCC would be administered by DTP (or the relevant State agency) and convened by the State Controller Maritime Emergencies (SCME).

Organisation: The JSCC will be jointly chaired by the SCME and Cooper Energy Senior Representative. The JSCC will ensure a coordinated response across the multiple control agencies.

The worst-case scenarios presented within this OPEP demonstrate that it is unlikely that an incident will impact multiple states.



Adapted from DTP Joint Industry and State Oil Pollution Response Guidance Note (2023)

Figure 1-9: Cross-jurisdictional Control and Coordination Structure

2 Response Activation

2.1 Cooper Energy Incident Management Plan and OPEP Activation

Cooper Energy manages emergencies from its offshore activities in accordance with the Cooper Energy IMP. The purpose of the IMP is to provide the IMT with the necessary information to respond to an emergency. The IMP:

- describes the emergency management process
- details the response process
- lists the roles and responsibilities for the IMT members
- includes duty cards for the IMT Members.

All spill events under the scope of this OPEP will be reported to the Cooper Energy Duty Manager by operator/maintainers or by contracted vessel masters. The Cooper Energy Duty Manager will notify the IC of the incident, providing the following information to allow the IC to assess the required response level:

- the source of the spill and the location
- the type of hydrocarbon released
- how much material has been released (e.g. estimated size based on a 'known' hydrocarbon inventory; estimates based on flowrates; or an estimate based upon the appearance and area of oil on the sea surface [refer to Section 7])
- whether the source been contained or whether the spill is continuing
- worst-case scenario
- weather conditions – wind speed and direction, swell and current speed and direction (if available).

Based on the information made available, the IC is responsible for:

- identifying the CA (Section 1.7 provides description of regulator responsibilities)
- determining the response level
- activating the Cooper Energy IMT (either where Cooper Energy is the CA or is directed by the CA)
- implementing the OPEP.

2.2 Control Agency

The CA is determined based on the source of the spill and whether the spill takes place in Commonwealth or State waters. Control agencies for the spill scenarios within the scope of this this OPEP are detailed in Table 1-6.

AMSA is the designated CA for oil spills from vessels within the Commonwealth jurisdiction. Upon notification of an incident involving a vessel, AMSA will assume control of the incident and respond in accordance with AMSA's Marine Pollution Response Plan. Co-ordination of resources under NatPlan will occur through formal request of the appointed IC.

Where a spill originates in Commonwealth waters but has the potential to impact State waters or lands, the State CA will establish an IMT and may assume control of response activities within State jurisdiction. Where response activities are implemented in Commonwealth jurisdiction, the CA remains either AMSA for vessel spills or Cooper Energy for spills relating to petroleum activities.

2.3 Response Level

The level of spill response depends on the nature and scale of the spill, whether on-site resources can manage the response or additional support resources are required, and the environmental sensitivities at risk.

The IC must make an initial assessment of the spill level based upon the initial information provided and NatPlan criteria. Table 2-1 provides NatPlan criteria for spill level classification together with guidance on possible level classifications for credible maximum spill scenarios applicable for to this OPEP.

Throughout the response, the Cooper Energy IC must continue to assess the response level in accordance with the NatPlan criteria, considering factors which may lead to escalation of the response level. Within State boundaries, the State CA will determine the response level.

Table 2-1: NatPlan Guidance on Spill Level Classification

Criteria	Level 1	Level 2	Level 3
Management			
Jurisdiction	Single jurisdiction	Multiple jurisdiction	Multiple jurisdictions including international
Number of Agencies	First Response Agency	Routine multi-agency response	Agencies from across government and industry
Incident Action Plan	Simple/Outline	Outline	Detailed
Resources	Onsite resources required only	Requires intra-state resources	Requires national or international resources
Type of Incident			
Type of response	First Strike	Escalated	Campaign
Duration	Single shift	Multiple shifts Days to weeks	Extended response Weeks to months
Hazard	Single Hazard	Single Hazard	Multiple Hazards
Resources at Risk			
Human	Potential for serious injuries	Potential for loss of life	Potential for multiple loss of life
Environment (Habitat)	Isolated impacts with natural recovery in a few weeks	Significant impacts and recovery may take months. Remediation required.	Significant area and recovery may take months or years. Remediation required.
Wildlife	Individual fauna	Groups of fauna or threatened fauna	Large numbers of fauna
Economy	Business level disruption	Business failure	Disruption to a sector
Social	Reduced services	Ongoing reduced services	Reduced quality of life
Infrastructure	Short term failure	Medium term failure	Severe impairment
Public Affairs	Local and regional media coverage	National media coverage	International media coverage
Cooper Energy Assets – Spill Scenarios – Notional Level Classification			
Offshore Victoria Operations	Vessel LoC Subsea LoC	Vessel LoC Subsea LoC	Subsea LOWC

Criteria	Level 1	Level 2	Level 3
		Subsea LOWC	

2.4 Notification and Ongoing Consultation Requirements

Table 2-2 describes what, who, when, why and how initial and ongoing consultation will be undertaken when the OPEP is activated.

Table 2-2: Initial and Ongoing Consultation Arrangements

What	Who	Why	When	How	Contacts Source
Primary Notifications Information: Incident Details and Actions underway.	Internal, Regulators and CAs and associated support Agencies.	Has jurisdiction for an aspect of the response.	As defined in the OPEP.	Targeted communications. *Calls, Email, Remote and face to face meetings.*	OPEP. Emergency Contacts Register.
Secondary Notifications Information: Incident Details and Actions underway.	Relevant Persons including those newly identified during an incident.	May be impacted by the spill or the response.	As soon as practicable if within the predicted spill impact zone.	Broad communications (media and dynamic website or as directed by CA). *Direct contact via agreed / available contact details, and / or as directed by the CA.*	Emergency Contacts Register. Relevant persons database.
Ongoing Consultation Incident Details Actions Underway and Completed	Internal, Regulators and CAs and associated support Agencies.	Has jurisdiction for an aspect of the response.	As defined in the OPEP or as agreed for the next operational period.	Targeted communications. *Calls, Email, Remote and face to face meetings.*	OPEP. Emergency Contacts Register.
Ongoing Consultation	Relevant Persons including those newly identified during an incident.	May be impacted by the spill or the response.	Regular or otherwise as agreed with CAs depending on nature/scale of the incident. When there is a significant change in the spill impact zone.	Broad communications (media and dynamic website or as directed by CA). *Direct contact via agreed / available contact details, and / or as directed by the CA.*	Emergency Contacts Register. Relevant persons database.

Internal and regulatory notifications must be made in accordance with requirements outlined in Table 2-3 for vessel spills, Table 2-4 for spills from loss of infrastructure integrity.

It is important that information generated during an initial response is accurately recorded, transmitted, acted upon and ultimately stored for future use. The information is to include:

- incident details – where, what, when, how, why (where possible)
- extent of spill
- immediate actions taken.

Copies of forms referenced in these tables and Appendix 1 can be found on the Cooper Energy SharePoint system: Regulatory Management System: https://cooperenergy.sharepoint.com/sites/HSEC2/Emergency/Forms/Documents.aspx?web=1

Table 2-5 also provides additional external notifications (excluding response resources) which may be required depending on the nature and scale of the spill incident (specified scenarios). These notifications will be made by the IC or delegate.

Table 2-6 provides the performance outcomes, standards and measurement criteria for regulatory notification.

Table 2-3: Notification Requirements for a Vessel spill (Level 1 / 2 / 3)

Vessel Spill Notifications				
From	**To**	**Type**	**Timing**	**Supporting Information**
Vessel Master	Cooper Energy Duty Manager	Verbal	Immediately	Contact details provided within campaign emergency response bridging document. Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
	AMSA – All spills to sea Australian Hydrographic Service	Verbal	Immediately (no later than 2 hours after incident)	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
		Written notification	As soon as possible (ASAP)	Complete a marine pollution report (POLREP) online available at: https://amsa-forms.nogginoca.com/public/polrep.html
		Written updates	As requested, or every 24 hours	Complete and issue a situation report (SITREP)/POLREP and IAP SITREP/POLREP available at: https://amsa-forms.nogginoca.com/public/polrep.html
Cooper Energy Duty Manager	Cooper Energy IMT Cooper Energy CMT	Verbal	As required	IMT Duty Roster CMT Duty Roster Emergency Roster and Emergency Contacts Directory
Cooper Energy Duty Manager (or delegate)	NOPSEMA (and copy to the National Offshore Petroleum Titles Administrator [NOPTA]) Dangerous occurrences at or near facilities must be reported to NOPSEMA under the applicable safety case. Occurrences include: • any hydrocarbon spill >80 L • spill has caused, or has the potential to cause, moderate to significant environmental damage. (Refer to activity-specific EP spill risk assessment)	Verbal	As soon as practicable and no later than 2 hours	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
		Written notification	As soon as practicable after oral notification	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
		Written report	As soon as practicable, but within 3 days of incident	Complete and issue written report: NOPSEMA Form N-03000-FM0831 A543965
Vessel Master or Cooper Energy Duty Manager (or	State and Port Authorities Level 1 / 2 / 3 Vessel spills (threatening State waters) As relevant to Port (Port Master) and/or State Waters (State Duty Officer). Authorities include:	Telephone	ASAP (no later than 2 hours after risk identification)	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory

delegate) as relevant	**Victorian State Waters** Port of Portland Gippsland Ports For level 2/3 spills notify the DTP State Duty Officer **South Australia** Department for Infrastructure and Transport State Controller, Marine Pollution (coastal) **NSW State Waters** Maritime emergency (24 hours) NSW Maritime **NSW Port (phone diverted for out-of-hours response)** Port of Eden Port of Kembla Port of Sydney Port of Newcastle Port of Yamba **Tasmanian State Waters** Environmental Protection Agency (EPA) Tasmania Radio: Transports Vessel Traffic Services VHF radio channel 16/14/12 Call sign "relevant port name VTS			
Cooper Energy Duty Manager (or delegate)	Relevant State Agency – State Waters (<3 nm) • level 2/3 spill threatening State waters • spill has caused, or has the potential to cause, moderate to significant environmental damage in State waters. (Refer to activity-specific EP spill risk assessment)	Verbal	As soon as practicable and no later than 2 hours	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
		Written notification	As soon as practicable after oral notification	POLREP available at: https://amsa-forms.nogginoca.com/public/polrep.html Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
		Email	As soon as practicable after oral notification	
Cooper Energy IC (or delegate)	Resources/Contractors	Telephone	As directed	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory

Cooper Energy IC (or delegate)	Director of National Parks Spill with potential to impact Australian Marine Park(s) or impact matters of national environmental significance (including potential for oiled wildlife)	Verbal	As soon as practicable	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
Cooper Energy IC (or delegate)	Relevant Persons (fishers, adjacent titleholders, Traditional Owners, etc.)	Telephone	As soon as practicable	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory

Table 2-4: Notification Requirements for Loss of Infrastructure Integrity (Subsea LoC or LOWC – condensate)

Subsea LoC Notifications				
From	**To**	**Type**	**Timing**	**Supporting Information**
Cooper Energy Duty Manager (or delegate)	Cooper Energy IMT Cooper Energy CMT	Verbal	As required	IMT Duty Roster CMT Duty Roster Emergency Roster and Emergency Contacts Directory
Cooper Energy Duty Manager (or delegate)	NOPSEMA Commonwealth Waters (>3 nm) • spill has caused, or has the potential to cause, moderate to significant environmental damage. (Refer to activity-specific EP spill risk assessment)	Verbal	As soon as practicable and no later than 2 hours	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
		Written notification	As soon as practicable after oral notification	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
		Written report	As soon as practicable, but within 3 days of incident	Complete and issue written report: NOPSEMA Form N-03000-FM0831 A543965
Cooper Energy Duty Manager (or delegate)	AMSA Australian Hydrographic Service	Verbal	As soon as practical and no later than 2 hours	Any marine pollution incident must be reported to AMSA including where NatPlan resources are required. Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
Cooper Energy Duty Manager (or delegate)	Relevant State Agency – State Waters (<3 nm) • level 2/3 spills (threatening State waters)	Verbal	As soon as practicable and no later than 2 hours	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory

Subsea LoC Notifications				
	• spill has caused, or has the potential to cause, moderate to significant environmental damage. (Refer to activity-specific EP spill risk assessment)	Written notification	As soon as practicable after oral notification	POLREP available at: https://amsa-forms.nogginoca.com/public/polrep.html Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
Cooper Energy Duty Manager (or delegate)	State and Port Authorities Level 1 / 2 / 3 (threatening State waters) As relevant to Port (Port Master) and/or State Waters (State Duty Officer). Authorities include: **Victorian State Waters** Port of Portland Gippsland Ports For Level 2-3 spills notify the DTP State Duty Officer	Telephone	ASAP	Port of Portland: (03) 5525 0999 Gippsland Ports: (03) 5150 0500 Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
Cooper Energy IC (or delegate)	Resources/Contractors	Telephone	As directed	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020. Emergency Roster and Emergency Contacts Directory
Cooper Energy IC (or delegate)	Relevant Persons (fishers, adjacent titleholders, Traditional Owners, etc.)	Telephone	As soon as practicable	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory

Table 2-5: Additional External Notifications

Stakeholder	Issue	Spill Level	Timeframe	References
Australian Hydrographic Service	Protection of mariners from safety and environmental impacts of spill	2, 3	2 hours	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
Vic – DEECA	Oiled Wildlife in respective state jurisdictions	1, 2, 3	Immediately, or whenever wildlife in Victoria's jurisdiction is expected to be impacted.	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
SA – Department of Environment and Water (DEW)			Immediately, or whenever wildlife in South Australia's jurisdiction is expected to be impacted.	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory

Stakeholder	Issue	Spill Level	Timeframe	References
Tas – EPA			Immediately, or whenever wildlife in Tasmania's jurisdiction is expected to be impacted.	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
NSW – EPA			Immediately, or whenever wildlife in NSW jurisdiction is expected to be impacted.	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory
Department of Climate Change, Energy, the Environment and Water	Damage to wildlife of national environmental significance (NES)	1, 2, 3	As soon as practicable following the discovery of impact to wildlife of NES (but not longer than 7 days) and/or under the direction of relevant State authority.	Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-ER-EMP-0020 Emergency Roster and Emergency Contacts Directory

Table 2-6: Spill Notification Performance Outcome

Performance Outcome	Control	Performance Standard	Measurement Criteria
Notification and reporting to regulators and other relevant persons occur in a timely manner.	C3 Response Communications	Notifications and written reporting to be undertaken in accordance with the relevant content and timeframes specified in Table 2-3 to Table 2-5.	• Incident log verifies this action has been undertaken in the required timeframe.

2.5 Action Sequence Checklists

The sequence of actions following alerting the IMT and activating this OPEP will be determined based on the spill scenario and level. Specific action sequence checklists are provided in this section for the following scenarios:

- vessel collision resulting in a MDO spill (level 1/2) (Table 2-7).
- subsea LoC or LOWC of Condensate (level 1/2/3) (Table 2-8).

Table 2-7: Spill Response Action List – –MDO Spill

Vessel LoC – MDO Spill – Response Actions		
Action	**Responsible Party**	**Timing / Additional Information**
On discovery of the spill notify the Vessel Master.	Spill Observer	ASAP
Manage the safety of all personnel. Secure sources of ignition and alert all personnel (appropriate to the level of the spill).	Vessel Master	ASAP
If safe, stop the spill through source control actions. Assess incident and prevent further spillage. Estimate the quantity of oil released and provide initial incident information. In the event of a significant (level 2/3) spill, deploy the oil spill tracking buoy (if available) following the deployment instructions.	Vessel Master	ASAP
Notify the Cooper Energy Duty Manager of the spill, providing information available from preliminary spill assessment. Including: • what is it – oil type / group / properties? • where is it – latitude/longitude? • how big is it – area/volume? • where is it going – weather conditions / currents / tides? • what is in the way – resources at risk? • when will it get there – weather conditions / currents / tides? • what is happening to it – weathering processes predicted.	Vessel Master	ASAP
Based on the preliminary spill assessment and operational monitoring from the Vessel Master approximate the spill level. Assess response required. Response commensurate to the size and level of risk.	Cooper Energy Duty Manager	ASAP
Undertake regulatory notifications and other stakeholder notifications (as required). Refer to Section 2.4.	Cooper Energy Duty Manager	ASAP
Assemble Cooper Energy IMT (as required). Number of, and team members selected, will be based upon the nature and scale of response required. The IC is responsible for: • identifying the CA	Cooper Energy Duty Manager	ASAP

Vessel LoC – MDO Spill – Response Actions		
• determining the response level • activate the Cooper Energy IMT (either where Cooper is the CA or is directed by CA) • implementing this first strike plan and the OPEP (where relevant). **NOTE: Cooper Energy is in a support role for this scenario as AMSA (Commonwealth waters) or designated State CA (state waters).**		
Activate AMOSC Member Agreement to support the response if require. Cooper Energy Authorising Officer to activate via the AMOSC Duty Manager • level 1 spill for remote advice • **l**evel 2 for on-site support (e.g. aerial observers, **s**horeline **a**ssessment and **c**lean-up **t**eam **(**SCAT**)**, oil spill trajectory modelling (OSTM), shoreline clean-up coordinators, boom equipment). See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for **AMOSC call-our authority personnel.**	IC or Delegate	Cooper Energy Offshore Victoria OPEP: **Section 3.1**
Login to AMOSC Website for the latest equipment and personnel information. See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for log in details (username and password). http://www.amosc.com.au	Planning Officer or delegate	
Determine spill trajectory – weather conditions and perform initial vector analysis. See Spill Response Tools on IMT SharePoint for Trajectory Estimator	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 7**
Identify protection priorities at risk and confirm response strategies via NEBA.	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 4**
Based on operational monitoring and in consultation with CA, where applicable activate the relevant Tactical Response Plan (TRP).	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 7**
Support IAP (as required) in consultation with AMOSC and CA (AMSA or State CA).	IC or Delegate	Cooper Energy Offshore Victoria OPEP: **Section 5**
Allocate responsibilities to support implementation of IAP (as required).	IC or Delegate	
In collaboration with CA undertake consultation with appropriate land managers for any shoreline activities (as required).	IC or Delegate	
As directed by CA, implement response strategies and monitor effectiveness.	IC or Delegate	Cooper Energy Offshore Victoria OPEP: **Section 5**
As directed by CA, continue until termination criteria is met.	IC or Delegate	Cooper Energy Offshore Victoria OPEP: **Section 5**
Monitor and Evaluate – if required (NOTE: Cooper Energy is in a support role for this scenario)		
Obtain weather data via of the Bureau of Meteorology (http://www.bom.gov.au/) for the spill location.	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP**: Section 7**
Use vectoring to identify predicted spill trajectory or initiate modelling (as required) via AMOSC Duty Manager. Determine Spill Trajectory – weather conditions and vectoring and/or modelling via AMOSC Duty Manager. • AMOSC Duty Manager: Emergency Roster and Emergency Contacts Directory See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for AMOSC and RPS contact.	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 7**

Vessel LoC – MDO Spill – Response Actions		
Undertake automated data inquiry for oil spills (ADIOS) modelling using hydrocarbon characteristics in Section 4.2. https://response.restoration.noaa.gov/adios	Planning Officer (or delegate)	
As directed by CA, mobilise aerial observation (if level 2) See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for Aerial Services Provider. Confirm the 'opening status' of estuaries identified as areas for priority protection. Preliminary information may be obtained via: http://www.estuarywatch.org.au/	Logistics Officer (or delegate)	Cooper Energy Offshore Victoria OPEP: **Section 7**
Access oil spill tracking buoy live feed data if a buoy has been deployed from the vessel: Website: https://myionu.track-viewer.com/Login.aspx See Spill Response Tools on IMT SharePoint for username and password for tracking buoy data.	Logistics Officer (or delegate)	Cooper Energy Offshore Victoria OPEP: **Sections 7**
Shoreline assessment and clean-up - if required (NOTE: Cooper Energy is in a support role for this scenario)		
As directed by CA (as relevant to State) and in consultation with AMOSC identify SCAT.	IC (or delegate)	Cooper Energy Offshore Victoria OPEP: **Section 9**
In consultation with CA (as relevant to State) identify SCAT locations.	Planning Officer (or delegate)	Cooper Energy Offshore Victoria OPEP: **Section 9**
As directed by CA (as relevant to State) initiate SCAT surveys.	Operations Officer/OSMP Support Contractors	Cooper Energy Offshore Victoria OPEP: **Section 9**
Undertake NEBA for shoreline clean-up as required.	Planning Officer (or delegate)	Cooper Energy Offshore Victoria OPEP: **Section 5**
Protection and deflection – if required (NOTE: Cooper Energy is in a support role for this scenario)		
Assess deployment location with AMOSC, CA (as relevant to State) and relevant waterway manager.	Operations Officer	Cooper Energy Offshore Victoria OPEP: **Section 8**
As directed by CA (as relevant to State), mobilise equipment and people to location.	Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 8**
In consultation with EPA, and as directed by CA (as relevant to State), mobilise waste management contractor.	Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 11**
Oiled Wildlife Response (OWR) – if required (NOTE: Cooper Energy is in a support role for this scenario)		
Notify relevant State Authority if any oiled wildlife is identified or have the potential to be impacted and provide support services as directed. Refer to Cooper Energy Contacts directory on the Cooper Energy Intranet VIC-EREMP-0020 Emergency Roster and Emergency Contacts Directory	IC (or delegate)	Cooper Energy Offshore Victoria OPEP: **Section 10**
In consultation with State lead agency for wildlife response, and as directed by CA (as relevant to State), mobilise waste management contractor.	Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 10**
Scientific monitoring – if required (NOTE: Cooper Energy is in a support role for this scenario)		
Consult with government environmental department (as relevant), and State Statutory Authority on the scope of the scientific monitoring if required.	Planning Officer	Cooper Energy Offshore Victoria OPEP: **Section 12**
Initiate scientific monitoring contractor. 24/7 Emergency Response Hotline: Emergency Roster and Emergency Contacts Directory	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 12**

Vessel LoC – MDO Spill – Response Actions		
As directed by CA (as relevant to State) define monitoring and control sites. CA may consult with AMOSC to define monitoring and control sites.	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 12**
Continue with scientific monitoring until termination criteria are met.	Planning Officer or delegate	Refer OSMP

Table 2-8: Spill Response Action List – Subsea LoC or LOWC – Condensate

Subsea LoC or LOWC - Condensate – Response Actions		
Action	**Responsible Party**	**Timing/ Additional Information**
On discovery of the spill: • initiate source control to prevent further spillage • notify the Duty Incident Manager providing initial incident information • in the event of a significant (level 2/3) spill, deploy the oil spill tracking buoy (if available and safe to do so) following the deployment instructions.	Site Operator / Maintainer	ASAP
Undertake spill assessment. • what is it - oil type / group / properties? • where is it – latitude / longitude? • how big is it - area / volume? • where is it going - weather conditions / currents / tides? • what is in the way - resources at risk? • when will it get there - Weather conditions / currents / tides? • what is happening to it - weathering processes predicted? • assess response required • response commensurate with the size and level of risk • marine safety assessment undertaken.	Cooper Energy Duty Manager	ASAP
Undertake regulatory notifications and other stakeholder notifications (as required). Refer to Section 2.4.	Cooper Energy Duty Manager or delegate	ASAP
Assemble Cooper Energy IMT (as required). Number of, and team members selected, will be based upon the nature and scale of response required. The IC is responsible for: • determining the response level • activating the Cooper Energy IMT and Source Control Team (SCT) • implementing the OPEP (where relevant). N.B. the Cooper Energy SCT initiate the VSCP (VIC-DC-ERP-0001)	Cooper Energy Duty Manager	ASAP
Activate AMOSC Member Agreement to support the response. Cooper Energy Authorising Officer to activate via the AMOSC Duty Manager. • AMOSC (level 2/3 for advice/support) (e.g. aerial observers, SCAT, OSTM) • AMOSC Duty Manager: Emergency Roster and Emergency Contacts Directory See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for call-our authority personnel.	Cooper Energy Authorising Officer	
Login to AMOSC Website for the latest equipment and personnel information:	Planning Officer or delegate	

Subsea LoC or LOWC - Condensate – Response Actions		
See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for website login (username and password). http://www.amosc.com.au		
Contact AMSA (level 2/3 for support) as per Table 2-4: Emergency Roster and Emergency Contacts Directory	Cooper Energy Duty Manager	
Determine Spill Trajectory – weather conditions and vectoring and/or RPS modelling via AMOSC Duty Manager. • AMOSC Duty Manager: Emergency Roster and Emergency Contacts Directory See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for **AMOSC and RPS contact.**	Planning Officer or delegate Officer	
Identify protection priorities at risk and confirm response strategies via NEBA in consultation with CA for State waters where state waters may be impacted.	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 5**
Based on operational monitoring and in consultation with the relevant State CA activate the relevant TRP, where applicable.	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 4**
Develop IAP in consultation with Well Control Specialists (where relevant), AMOSC and the relevant State CA (where State water may be impacted) and implement.	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 5**
In collaboration with relevant State agency undertake consultation with appropriate land managers for any shoreline activities.	IC or delegate	
Implement response strategies and monitor effectiveness.	Operations Officer	Cooper Energy Offshore Victoria OPEP: **Section 5**
Response Termination – continue until termination criteria met.	IC or delegate	Cooper Energy Offshore Victoria OPEP: **Section 5**
Monitor & Evaluate		
Obtain weather data via of the Bureau of Meteorology (http://www.bom.gov.au/) for the spill location.	Planning Officer or delegate	Cooper Offshore Victoria OPEP: **Section 7**
Use manual vectoring to identify predicted spill trajectory. Spill Response Tools on IMT SharePoint for Trajectory Estimator Initiate RPS modelling using Form in Section 4 and via AMOSC Duty Officer: • AMOSC Duty Manager: Emergency Roster and Emergency Contacts Directory	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 7**
Undertake ADIOS modelling using hydrocarbon characteristics in Section 4.2 - https://response.restoration.noaa.gov/adios	Planning Officer or delegate	Cooper Energy Offshore Victoria OPEP: **Section 4**
As directed by CA, mobilise aerial observation (if level 2/3) to commence operations in daylight hours. See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for aerial services provider. Confirm the 'opening status' of estuaries identified as areas for priority protection. Preliminary information may be obtained via: http://www.estuarywatch.org.au/	Operations and Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 7**
Mobilise vessel observations and confirm deployment of satellite tracking buoys (as appropriate if level 2/3 incident). Access oil spill tracking buoy live feed data if a buoy has been deployed from the vessel: Website: https://myionu.track-viewer.com/Login.aspx See Spill Response Tools on IMT SharePoint for username and password for tracking buoy data.	Operations and Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 7**

Subsea LoC or LOWC - Condensate – Response Actions		
Protection and Deflection – if required		
Assess deployment location with AMOSC, the relevant State CA and relevant waterway manager.	Operations Officer	Cooper Energy Offshore Victoria OPEP: **Section 8**
As directed by the relevant State CA, mobilise equipment and people to location.	Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 8**
In consultation with EPA, and as directed by the relevant State CA, mobilise waste management contractor.	Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 11**
Shoreline Assessment and Clean-up - if required		
As directed by the relevant State CA and in consultation with AMOSC identify SCAT.	Operations Officer	Cooper Energy Offshore Victoria OPEP: **Section 9**
In consultation with the relevant State CA and AMOSC to identify SCAT locations.	Planning Officer / State CA	Cooper Energy Offshore Victoria OPEP: **Section 9**
As directed by the relevant State CA initiate SCAT surveys.	Operations Officer / OSMP Support Contractors	Cooper Energy Offshore Victoria OPEP: **Section 9**
Undertake NEBA (Appendix 2) for shoreline clean-up as required.	Planning Officer / State CA	Cooper Energy Offshore Victoria OPEP: **Section 5**
Initiate shoreline clean-up (as required).	Operations and Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 9**
Mobilise waste management contractor. See Cooper Energy Emergency Roster and Emergency Contacts Directory (VIC-ER-EMP-0020): Emergency Roster and Emergency Contacts Directory for waste contractor contact.	Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 11**
OWR – if required		
Notify DEECA if any oiled wildlife is identified or has the potential to be impacted and provide support services as directed.	Cooper Energy IMT	Cooper Energy Offshore Victoria OPEP: **Section 10**
In consultation with EPA, state lead agency for oiled wildlife, and as directed by the relevant State CA, mobilise waste management contractor.	Logistics Officer	Cooper Energy Offshore Victoria OPEP: **Section 11**
Scientific Monitoring – if required		
Consult with EPA, state lead agency for oiled wildlife, and the relevant State CA on the scope of the scientific monitoring if required.	Planning Officer	Cooper Energy Offshore Victoria OPEP: **Section 12**
Initiate scientific monitoring contractor 24/7 Emergency Response Hotline: Emergency Roster and Emergency Contacts Directory	Planning Officer	Cooper Energy Offshore Victoria OPEP: **Section 12**
As directed by the relevant State CA define monitoring and control sites. DTP may consult with AMOSC to define monitoring and control sites.	Planning Officer / State CA	Cooper Energy Offshore Victoria OPEP: **Section 12**
Continue with scientific monitoring until termination criteria are met.	Cooper Energy IMT	Refer to OSMP
Planning beyond First Strike Period		
Create an IAP for ongoing operational period using the IAP template in Appendix 1	Cooper Energy Planning / Information Officer	Cooper Energy Offshore Victoria OPEP: Appendix 1

2.6 Safety Exclusion Zones

On activation of the OPEP, the Cooper Energy Operations Officer will establish a safety exclusion zone for all level 2/3 spill incidents. The extent of the exclusion zone will be determined based on the risks associated with the incident and may be informed by modelling to predict areas where safety thresholds are exceeded.

All aircraft and vessels will observe the exclusion zone around infrastructure to prevent personnel exposure to safety hazards. All vessels and aircraft are to remain up wind and up-current from the source of the spill.

The following additional notifications will be made to protect the health and safety of third-party marine stakeholders:

- exclusion zones will be established on-water around the source and slick area by requesting a Notice to Mariners via the Australian Hydrographic Service (refer to Table 2-9) and via the AMSA rescue coordination centre who will issue an AusCoast warning
- Cooper Energy to notify adjacent petroleum titleholders and relevant persons to advise of the spill conditions and any exclusion requirements (refer to Table 2-9).

Safety exclusion zones are maintained until the hydrocarbon release is terminated and the Cooper Energy Spill IC has determined there is no hazard to personnel, contractors or third-party marine users. The establishment of safety exclusion zones is captured as an enforceable environment performance outcome in the event of a spill and is described along with the corresponding performance standards and measurement criteria in Table 2-9.

Table 2-9: Safety Exclusion Zones

Applicable Level	Performance Outcome	Control	Standard	Measurement Criteria
2/3	Establish and implement safety exclusion zones.	C4: Exclusion Zones.	IAP documents the need for, and if required, refines throughout the incident safety exclusion areas to prevent exposure of Cooper Energy contractors and third parties to hazardous conditions.	• IAP reflects these constraints have been identified and communicated to user groups.

3 Emergency Response Organisation

Cooper Energy's emergency management structure is scalable according to the level of incident. In general, incident response is managed by the Cooper Energy response teams listed in Table 3-1. The relationship between these groups is provided in Figure 3-1.

Incidents that are extremely large, complex, or protracted, may be managed more effectively by splitting the management of that incident between two or more response teams (i.e. source control and oil spill response). An incident could be split geographically or functionally depending on the circumstances. Cooper Energy's incident control system provides for remote access and integration of IMT personnel.

Table 3-1: Emergency Response Groups

Parameter	CMT	IMT and Field Teams	Well SCT
Role	Manages corporate strategic issues (i.e. wider spill implications) and provides support in terms of finance, insurance, legal, external affairs, media, Joint Venture (JV) partner liaison, Australian Securities Exchange (ASX) releases and Government Department liaison.	Supports tactical response for the oil spill and supports site-based Emergency Response Team (ERT). Interface between local relevant persons, external spill response and support agencies.	Responsible for planning and recovery from source control and well incidents.
Leader	CMT Leader	IC.	SCT Leader
Plan	Cooper Energy CMP	Cooper Energy IMP Cooper Energy OPEP Cooper Energy TRP	Cooper Energy Offshore VSCP Activity SCERP
Nominal Location	CMT Room Level 8, 70 Franklin St, Adelaide, SA	Incident Control Centre Level 8, 70 Franklin St, Adelaide, SA Note, the IMT may move to another nominated location such as AMOSC in Geelong or as nominated by Vic DTP or other relevant State agency. FOB and Field Teams will be directed by the IMT to locations identified through the IAP cycle.	Perth Level 15, 123 St Georges Terrace, Perth Western Australia (WA)
Interface with regulator/industry response plans and resources	-	NatPlan Victorian Maritime Emergencies NSR subplan NSW State Waters Marine Oil and Chemical Spill Contingency Plan TasPlan AMOSPlan	Memorandum of understanding (MoU) between Titleholders
External Liaison Positions within Team	AMOSC Industry Intergovernmental Advisor.	Liaison Officers (AMOSC, AMSA, State CA, State government Lead Agencies) (as required). **Note – Cooper Energy Liaisons should be prepared to deploy to Government Agency Location (e.g. Melbourne or Canberra)**.	-

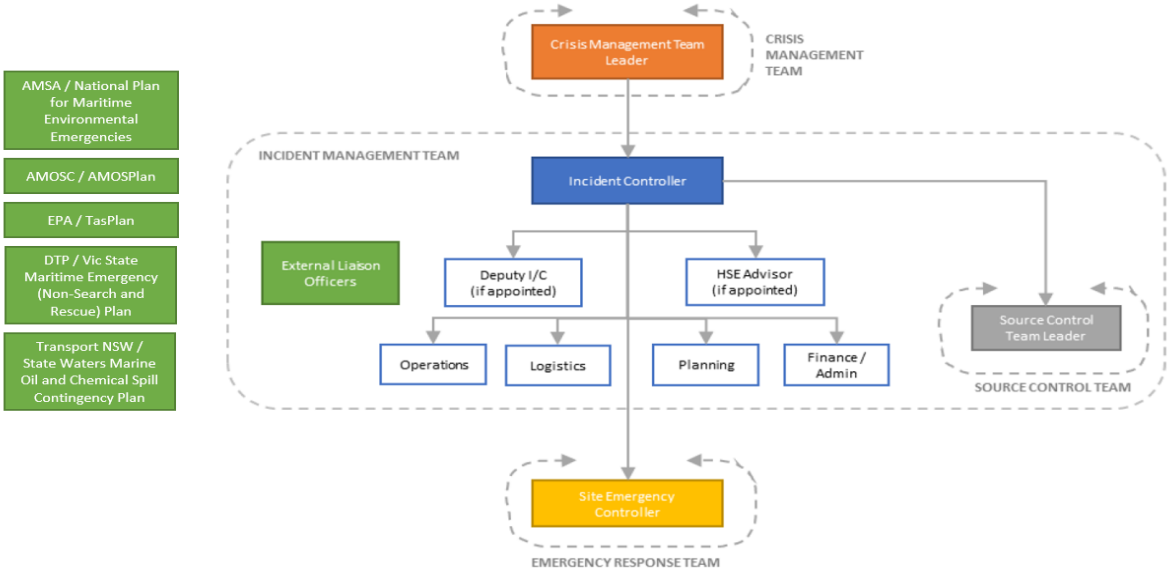


Figure 3-1: Cooper Energy Oil Spill Response Structure

3.1 Spill Management Team – Level Structures

Figure 3-1 and Table 3-2 provides the Cooper Energy emergency response structure, which is scalable, according to the emergency or oil spill level.

This structure is consistent with the Australasian Inter-service Incident Management System structure adopted by NatPlan and Victorian Maritime Emergencies NSR subplan where the IC holds overall management responsibility for activities to control the incident. Use of this structure provides consistency in role definition between Cooper Energy and regulator/industry plans and allows external trained resources to fit seamlessly into the Cooper Energy IMT structure in a surge capacity.

Table 3-2: Cooper Energy Emergency Response Structure

Level 1 Spill Management Structure
A level 1 spill is within the response capabilities of Cooper Energy site or the vessel operator's resources. The response structure is site-based with notification to the Cooper Energy Duty Manager. The Cooper Energy IMT or CMT may be mobilised if there is a possibility that the spill incident could escalate.
Level 2 Spill Management Structure
A level 2 spill incident, where Cooper Energy is the control agency for the spill, will likely activate the Cooper Energy IMT to support oil spill response. The IC will nominate the positions which need to be filled and allocate subordinate functions as required. In a level 2 spill event the IC must notify the CMT Leader and determine if the spill response requires support from CMT resources. Additional resources (i.e. media) may be mobilised as required. The mobilisation and composition of the CMT are detailed in the IMP. For level 2 spills where Cooper Energy is not the control agency (i.e. significant vessel spills), the Cooper Energy IMT will support the CA (either AMSA or relevant State Authority). A Cooper Energy liaison officer may be deployed to the AMSA or State Authority incident team to facilitate support activities (i.e. equipment and personnel).
Level 3 Spill Management Structure

A level 3 spill incident requires resources which exceed the capacity of Cooper Energy. Cooper Energy may request additional personnel from external agencies such as AMOSC, industry mutual aid (core group) assistance through AMOSPlan (via AMOSC) and AMSA to act as surge resources for the Cooper Energy IMT in an on-going large-scale response.

The IMT would be expected to mobilise for a level 3 spill event when notified by the Duty Manager.

If the level 3 spill event is well-related, the SCT will also be activated to initiate source control. The IC will interface with the SCT Leader.

3.2 Roles and Responsibilities

3.2.1 Incident Management Team

Figure 3-2 provides details of a level 3 oil spill support organisation. Each unit within the Planning, Operations, Logistics and Finance/Administration functional area is headed by a coordinator who reports to their relevant functional officer.

The initial Cooper Energy IMT resourcing strategy, and responsibilities for these key roles is provided in Table 3-3. Surge capacity resources are also nominated together with the role competency requirements.

In the event of a prolonged large-scale oil spill event, additional resources would be sourced from external agencies to fulfil the necessary roles.

Individual Oil Spill Response Officer Position Checklists are provided in Appendix 3 of this OPEP. Maximum IMT resourcing requirements for the worst credible discharge have been evaluated in consultation with AMOSC. Appendix 5 provides further information on where IMT personnel will be sourced from to match the response requirements identified in the OPEP.

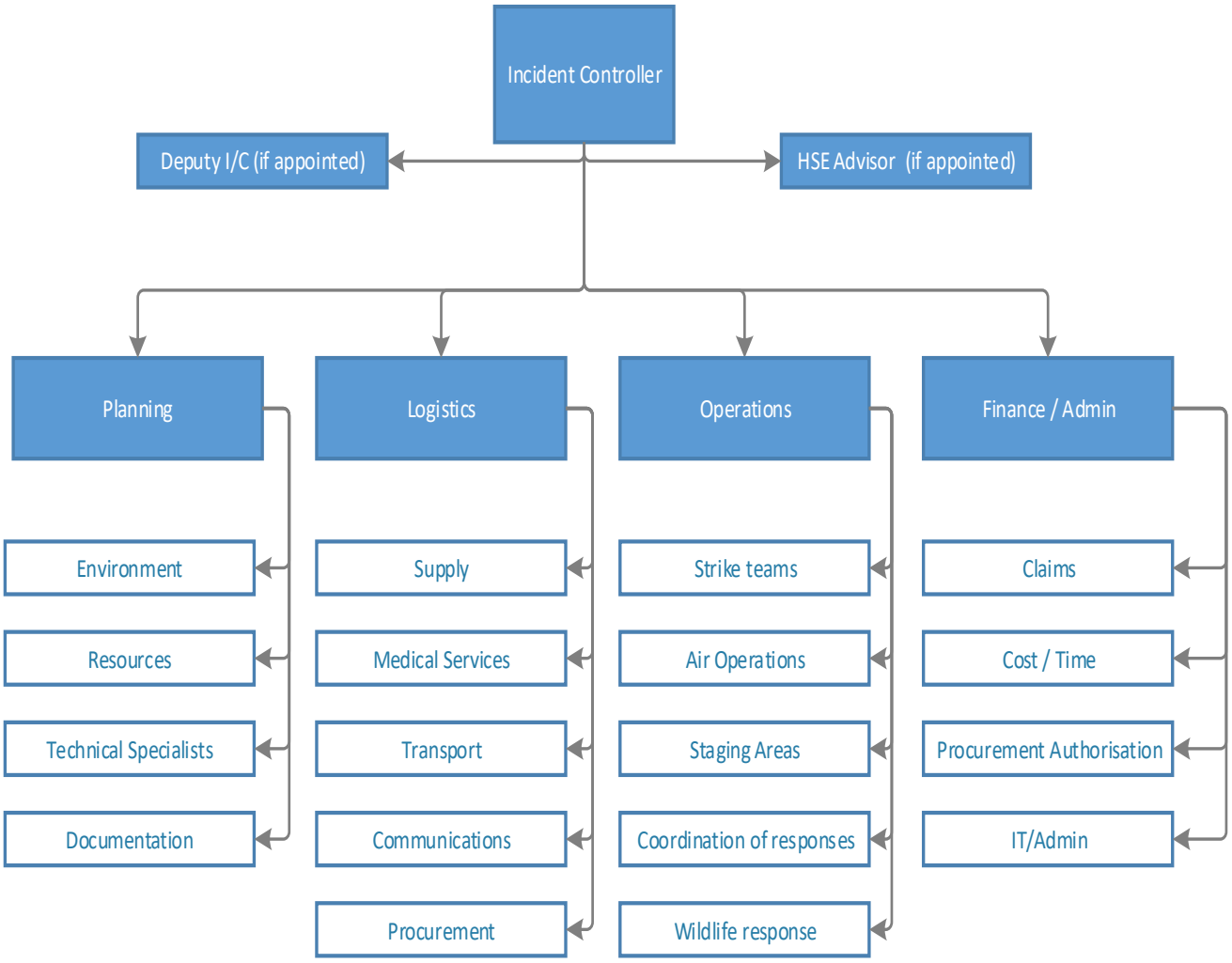


Figure 3-2: Spill Level 2/3 Support Organisation (Indicative)

Table 3-3: IMT Lead Roles, Responsibilities, Competencies and Provision

Initial Responder	Responsibilities	Output	Responder Competency/ Training	Sourced from
Incident Controller	Management of all activities necessary for the resolution of an incident.	Safe and efficient response structure and organisation.	IMO3 or equivalent OPEP Induction	Cooper Energy / AMOSC Core Group AMSA Liaison Officer/ CA Emergency Management Liaison Officer (or equivalent)
Safety Officer	Oversees the health and safety of the response operations.	Health and Safety Plans, control measures and evaluation.	Industry Health Safety & Environment	Cooper Energy

Initial Responder	Responsibilities	Output	Responder Competency/ Training	Sourced from
			(HSE) role >5 years OPEP induction	
Liaison Officer	Relaying critical information to key stakeholders (government, community). Feeding back stakeholder concerns to the IC for resolution.	External / pubic/ stakeholder affairs are managed.	Industry or communications role >3 years OPEP Induction	Cooper Energy / AMOSC Core group
Planning Officer	Collection, analysis and dissemination of information and development of plans for the resolution of an incident.	Drive the planning process that develops the IAP. Tracking resources. COP – situational assessment (intelligence).	IMO2 or equivalent Internal competencies* OPEP Induction	Cooper Energy / AMOSC Core Group / AMSA National Response Team (NRT)
Environment Officer	Reports to Planning Officer. Collects and analyse environmental information for areas that are or may be impacted by the incident. Undertakes NEBA. Works with experts to provide concise and accurate environmental advice to the IC.	OPEP strategies are tactically implemented consistent with good global practice, accounting for the net. environmental benefit of each strategy. Assessment of environmental risks.	Internal competencies* OPEP Induction	Cooper Energy / Environmental Consultancy or AMOSC Core Group. (External interface: State Environmental Officers)
Operations Officer	Tasking and application of resources to achieve resolution of an incident.	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.	IMO2 or equivalent Internal competencies* OPEP Induction	AMOSC Core Group, AMSA NRT
Logistics Officer	Acquisition and provision of human and physical resources, facilities, services, and materials to support achievement of incident objectives.	Acquire resources and materials that match the operations. Ensure resources are serviced and maintained to required specifications.	IMO2 or equivalent Internal competencies* OPEP Induction	AMOSC Core Group, AMSA NRT
Finance and Administrator Officer	Management of all financial and administrative activities to enable and record the incident.	Tracks all costs and provides financial oversight consistent with the CA requirements.	Internal competencies* OPEP Induction	Cooper Energy

*Notes: *Defined for role and maintained as part of the Cooper Energy training and competence matrix.*

Support from NRT under National Plan arrangements and AMOSC-AMSA Memorandum of Understanding (MoU).

3.2.2 Forward Operating Base and Field Teams

The IMT will provide support to the Field Team Forward Operating Base (FOB) Leads (Table 3-4). The FOB(s) will be located near to response activities to manage and provide for the daily operations of the field response. All roles may not be necessary for the entire response.

Table 3-4: FOB and Field Team Lead Roles, Responsibilities, Competencies and Provisions

Initial Responder	Responsibilities	Output	Responder Competency/ Training	Sourced from
FOB Lead	Set-up and management of the forward operating base, IT systems, personnel, materials, and equipment.	Functional FOB for response.	IMO2 or equivalent OPEP Induction	Cooper Energy / AMOSC
Safety Officer	Coordinate welfare requirements for all field response personnel.	Implementation of health and safety plan measures.	Industry HSE role >5 years OPEP induction	Cooper Energy
Aerial Operations Manager	Coordination of aerial response operations.	Aerial response operations are implemented in line with the IAP.	IMO2 or equivalent OPEP Induction	AMOSC
Aerial Observer	Plotting and recording of oil spill.	Observer reports outlining location, extent and thickness of oil.	AMOSC Aerial Surveillance Course or equivalent OPEP Induction	AMOSC
Marine Operations Manager	Coordination of marine response operations.	Marine response operations are implemented in line with the IAP.	IMO1 or equivalent OPEP Induction	AMOSC
Shoreline Operations Manager	Coordination of shoreline response operations.	Shoreline response operations are implemented in line with the IAP.	IMO1 or equivalent OPEP Induction	AMOSC
SCAT Team Leads	Coordinate day to day SCAT at respective field location.	SCAT operations are implemented in line with the IAP.	IMO1 or equivalent	AMOSC and AMOSC Core Group
Shoreline Response Team Leads	Coordinate day to day shoreline response at respective field location.	Shoreline response operations are implemented in line with the IAP.	IMO1 or equivalent OPEP Induction	AMOSC Core Group and NRT
TRP Team Leads	Coordinate tactical response at respective tactical response site.	Response operations are implemented in line with TRPs/IAP.	IMO1 or equivalent	AMOSC Core Group
Oiled Wildlife Coordinator	Coordinate OWR.	OWR is implemented in line with TRPs/IAP.	AMOSC Functional specific training OWR management OPEP Induction	AMOSC Core Group
Oiled Wildlife Rehabilitation Manager	Coordinate rehabilitation of oiled wildlife rescued during the response.	Process implemented for the rehabilitation of oiled wildlife.	Functional specific training OWR management	Philip Island Nature Park

3.2.3 Source Control Team (Well Incident)

The Cooper Energy Offshore Victoria Source Control Plan (VIC-DC-ERP-0001) provides details and guidance on emergency well control management for Cooper Energy's offshore Victoria assets and activities. It covers the activities to be carried out to assess the well control and to plan and execute appropriate response measures to regain control of and secure the well.

The IC will interface with the SCT (Section 3, Figure 3-3). Figure 3-3 details the SCT structure and Table 3-5 roles, responsibilities, competencies, and where initial and surge personnel can be sourced. All roles may not be necessary for the entire response.

A detailed resourcing plan is developed as part of the drilling campaign SCERP.

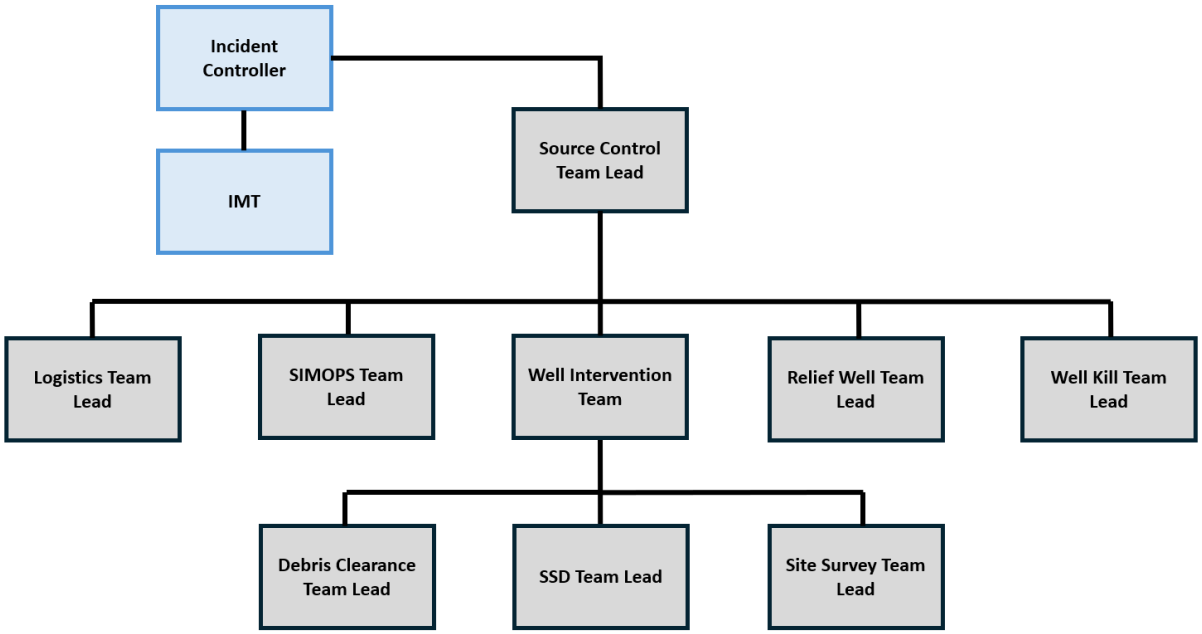


Figure 3-3: Source Control Team Structure

Table 3-5: Source Control Team Lead Roles, Responsibilities, Competencies and Provision

Initial Responder	Responsibilities	Output	Responder Competency/ Training	Sourced from
SCT Lead	The SCT Leader gathers all the information from the source control subgroups to manage and report on the progress of the various source control methods being pursued.	Approve and authorise the implementation of a Source Control Action Plan.	IMO III, International Well Control Forum (IWCF) Subsea Supervisor Well Control or equivalent	Cooper Energy Labour Agency Service Partners
Well Intervention Team Lead	The Well Intervention Team Leader reports to the SCT Leader and supports activities related to site surveys, debris removal, subsea dispersant and well intervention of the incident well.	Approve and authorise the implementation of a: • site survey plan • well intervention plan • debris removal plan.	IMO II, IWCF Subsea Supervisor Well Control	Cooper Energy Labour Agency Service Partners
Site Survey Team Lead	The Site Survey Team Leader is responsible for the management and coordination of surveying the site subsea.	Provides data for all other source control efforts to assist in the development of the operational plans and procedures.	Experience offshore subsea survey lead role	Cooper Energy Labour Agency Service Partners

Initial Responder	Responsibilities	Output	Responder Competency/ Training	Sourced from
Debris Removal Team Lead	The Debris Removal Team Leader is responsible for the management and coordination of subsea debris removal operations.	Coordinate the development of operational plans and procedures, secure resources, and manage debris removal operations to ensure clear access for the relief well.	Experience offshore subsea operations lead role	Cooper Energy Labour Agency Service Partners
Subsea Dispersants Team Lead	The Dispersant Team Leader is responsible for the management and coordination of subsea dispersant operations at or near the source.	Coordinate the development of the subsea dispersant application and monitoring plans and procedures, secure resources, and manage subsea dispersant operations. Prepare procedures and plans for submission to be approved by the local governmental authority and coordinated through the SIMOPS Team.	Experience offshore subsea operations lead role	Cooper Energy AMOSC WWC Oceaneering Service Rep. – Dispersant Vessel
Simultaneous Operations (SIMOPS) Team Lead	The SIMOPS Leader reports to the SCT Leader and supports activities related to SIMOPS plans and activities of the incident well.	Approve and coordinate activities at the incident site. Coordinate and schedule all activities within the SIMOPS area. Coordinate with other groups for the transport of all well control materials to the site. Create and maintain SIMOPS plan detailing organization and process flow. Establish On-Site SIMOPS Control/Coordination Centre.	Experience SIMOPS lead role	Cooper Energy Labour Agency Service Partner
Relief Well Team Lead	The Relief Well Leader reports to the SCT Leader and supports activities related to planning and operations for drilling the relief well and well kill modelling, planning and operations associated with well kill from the relief well to the incident well.	Determine if impacted rig may be used for relief rig. Determine number of relief wells to be drilled. Obtain and assess information on reservoir and wellbore geometry. Source rigs to drill the well(s) Identify available resources (i.e. rig, oil country tubular goods, pumping fluids). Identify surface location and develop relief well plan. Submit permit(s) and receive approval. Finalize well design drill relief well.	Experience offshore well construction lead role. IWCF Subsea Supervisor Well Control or equivalent	Cooper Energy Labour Agency Service Partners
Well Kill Team Lead	Well Kill Team Leader is responsible for the management and coordination of well kill operations.	Coordinate the development (and approval) of the well kill plans and procedures, secure resources, and manage well kill operations via a relief well or capping stack, concurrently with all other source control efforts until the well is dead.	Experience offshore drilling lead role	Cooper Energy Labour Agency Service Partner

Initial Responder	Responsibilities	Output	Responder Competency/ Training	Sourced from
Logistics Team Lead	The Logistics Team Leader will support the SCT during a subsea well containment incident. The Logistics Team will coordinate internal and external to the SCT to ensure that all necessary resources and services for source control operations are procured.	Approve and authorise the implementation of SCERP logistics strategy, manage vessel support, materials support, facility support, and communications support for source control operations.	Experience logistics lead role	Cooper Energy Labour Agency Service Partner

3.2.4 Crisis Management Team

The Cooper Energy CMT typically comprises senior executives representing the major areas of the Cooper Energy business (Table 3-6). The CMT Leader will activate support as required to assist with legal and media issues.

The focus of the CMT includes:

- supporting the IMT to contain an incident
- communicating with all relevant stakeholders and managing the demand for information
- strategic planning of control and recovery processes.

Table 3-6: Crisis Management Team Roles, Responsibilities, Competencies and Provision

Initial Responder	Responsibilities	Output	Responder Competency/ Training	Sourced from
CMT Lead	Overall responsibility for management of the CMT including overall responsibility for internal and external communications to the Board, JV partners, ASX and other stakeholders.	Supports the IC to provide Safe and efficient response structure and organisation.	Chief Officer (or delegate)	Cooper Energy
External Affairs / Stakeholder relations	Advise on development of internal and external affairs and communications strategy. Brief company spokesperson.	Provision of information to external parties in timely manner.	Manger (or delegate)	Cooper Energy
Legal	Assist in the development of a positive legal direction.	Legal implications of the response are assessed and communicated to the CMT lead.	General council, Manager (or delegate)	Cooper Energy
Finance	Financial notifications, provision of adequate funds, advice on financial impacts.	Response is adequately funded to implement the IAP.	Chief Officer (or delegate)	Cooper Energy
Human Resources	Source relief and specialist personnel.	Response is adequately resourced to implement the IAP.	Manager (or delegate)	Cooper Energy

4 Pre-Operational Response Options

Spill response options will be based on the general conditions, oil type and the response priorities. This section describes pre-operational spill response options based on known scenarios, fate and trajectory predictions and an assessment of impacts.

The response taken in an actual event may draw on this information initially but must be appropriate to the conditions of the spill at the time. Approaches to support the live operational response are provided in Section 5.

4.1 General Environmental Conditions of the Bass Strait

Victoria's climate can be characterised as cool temperate, with cool wet winters and cool summers. Water temperatures in Bass Strait are between 12.6˚C and 18.4˚C (average 15˚C).

4.1.1 Wind

The Gippsland Basin lies within the eastern portion of the Bass Strait, which is a sea straight separating Tasmania from the southern Australian mainland. Hindcast modelled wind data from the National Centres for Environmental Predictions Climate Forecast System Reanalysis for the period 2008 to 2017 (inclusive), showed winds were typically from the southwest during the summer months and west-southwest during the winter months, with average monthly wind speeds under 16 knots, winds can at times blow over 52 knots at the release location (RPS 2021).

Bass Strait is located on the northern edge of the westerly wind belt known as the Roaring Forties. Hindcast modelled wind data from the National Centres for Environmental Predictions Climate Forecast System Reanalysis for the period 2010 to 2019 (inclusive), showed wind direction were typically from the southeast in summer through the westerly sectors to the northwest for winter , with average monthly wind speeds ranging from 10 knots during summer to 13 knots during winter (RPS 2023).

Figure 4-1 shows the average wind data in both Gippsland and Otway basin.

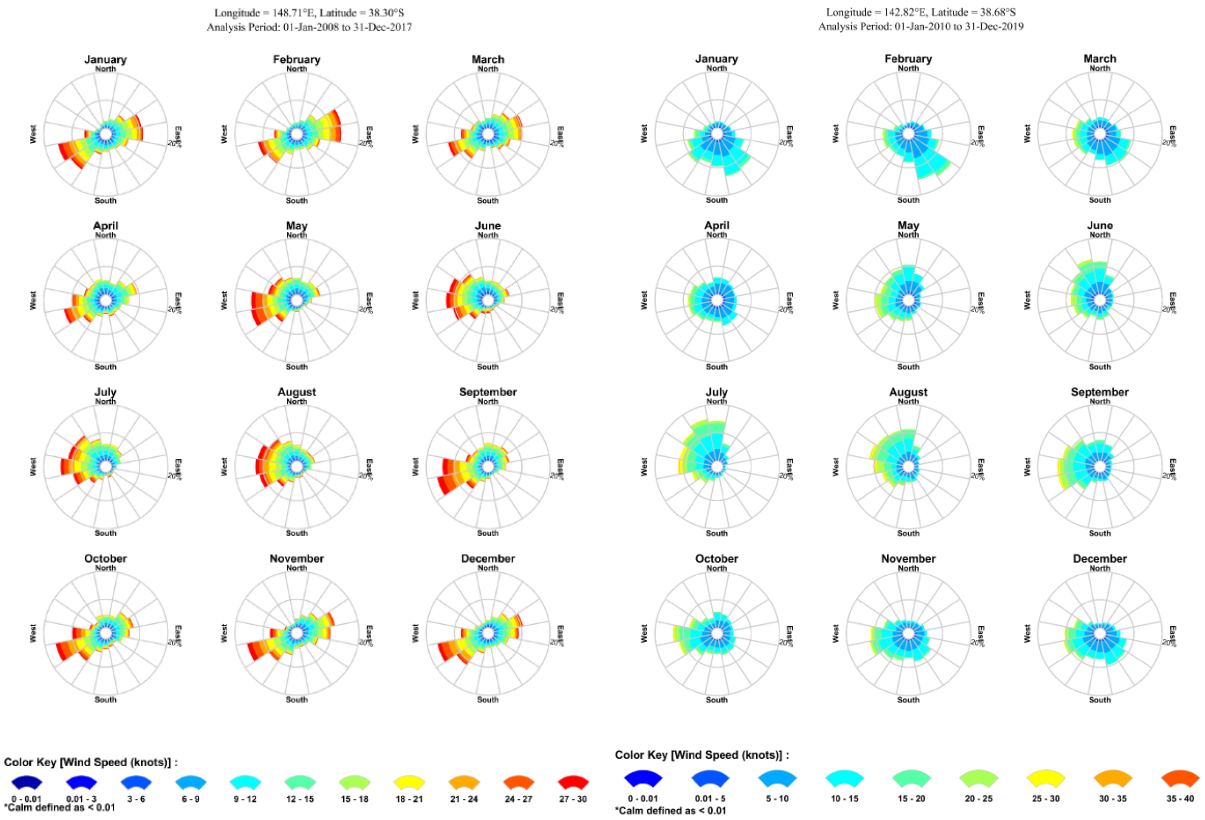


Figure 4-1: Modelled Monthly Wind Data Gippsland Basin (left (RPS 2021)) and Otway Basin (right (RPS 2023))

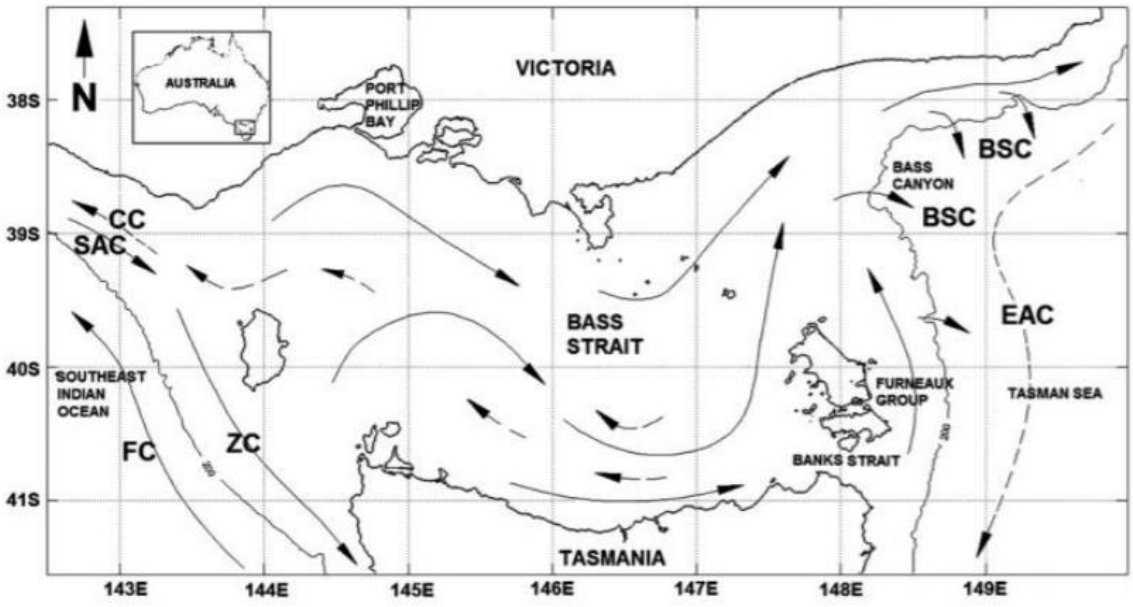
4.1.2 Surface Currents

The Bass Strait region has a reputation for high winds and strong tidal currents (Jones, 1980). Currents within the strait are primarily driven by tides, winds and density driven flows. In winter and spring, waters within the strait are well mixed with no obvious stratification, while during summer the central regions of the strait become stratified (Baines and Fandry 1983, Middleton and Black 1994).

The varied geography and bathymetry of the region, in addition to the forcing of the south-eastern Indian Ocean and local meteorology lead to complex shelf and slope circulation patterns (Middleton and Bye 2007). 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 (Sandery and Kanpf 2007). During summer, water flow reverses off Tasmania, King Island and the Otway Basin travelling westward, as the coastal current develops due to south-easterly winds (Figure 4-2). Surface currents flow with different intensities within the Gippsland Basin and Bass Strait depending on the time of year.

The current speed in the Gippsland Basin ranged between 0.18 m/s (July and October) to 0.24 m/s (May) while maximum current speeds ranged between 0.59 m/s (December) and 0.96 m/s (March) (RPS 2021). Figure 4-3 illustrates the monthly current rose distributions based on 10-year dataset for the period 2008 to 2017 (inclusive).

The current speed in the Bass Strait ranged between 0.15 m/s (April) to 0.24 m/s (July) while maximum current speeds ranged between 0.72 m/s (February) and 1.10 m/s (September) (RPS 2023). Figure 4-3 illustrates the monthly current rose distributions based on 10-year dataset for the period 2010 to 2019 (inclusive).



Source: (Sandery and Kanpf 2007)

Figure 4-2: Schematic Representation of Currents in the Region. Dashed Arrows Denote Summer Currents. Shelf Break Depth (200 m isobath) is Indicated

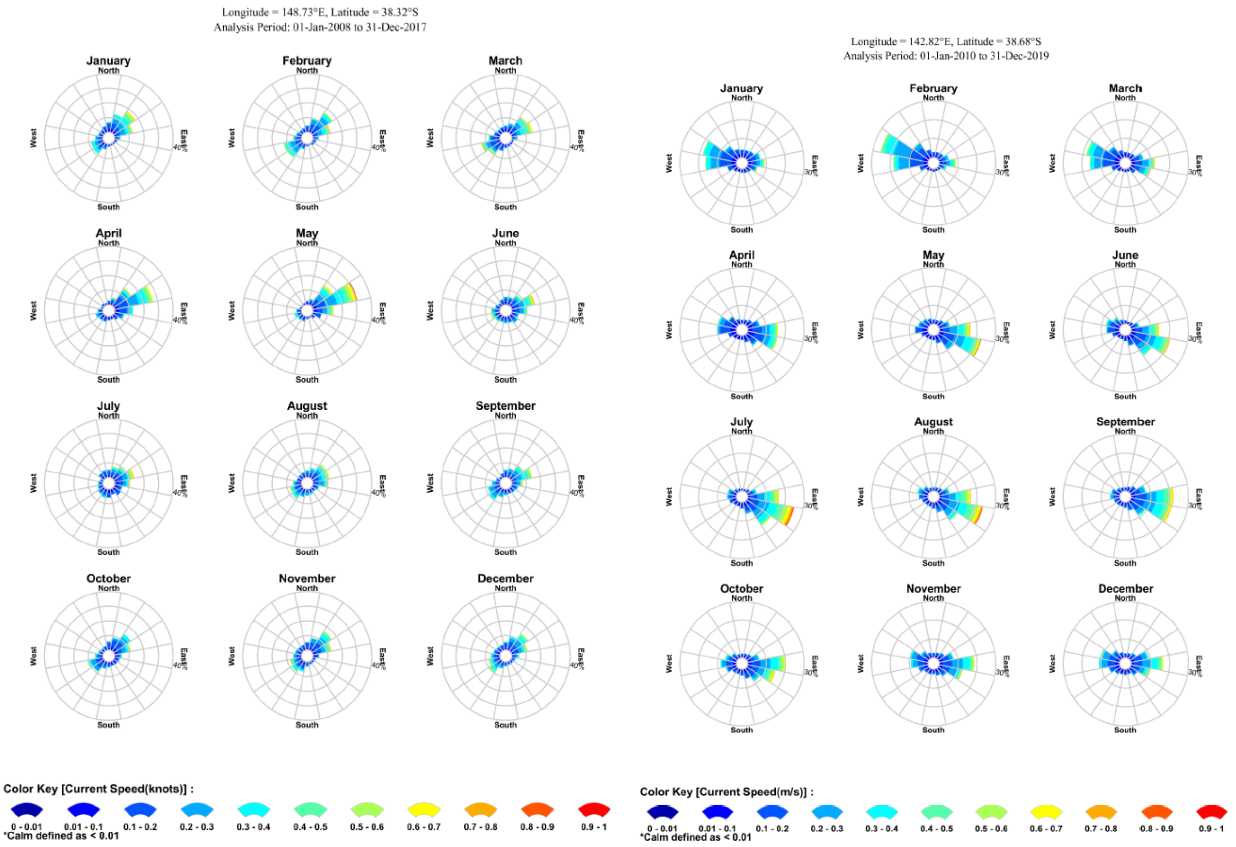


Figure 4-3: Modelled Monthly Surface Current Data Gippsland Basin (left (RPS 2021)) and Otway Basin (right (RPS 2023)

4.1.3 Water Temperature and Salinity

Monthly average sea surface temperatures in the Gippsland Basin range from 14.1°C (September) to 20.5°C (March) (RPS 2021), while in the Bass Strait range from 13.4°C (September) to 18.2°C (March) (RPS 2023). Salinity tends to remain consistent throughout the year, between 35.4-35.6 psu (RPS 2021, RPS 2023).

Figure 4-4 shows the monthly temperature and salinity profiles throughout the water column in both the Gippsland and Otway Basin.

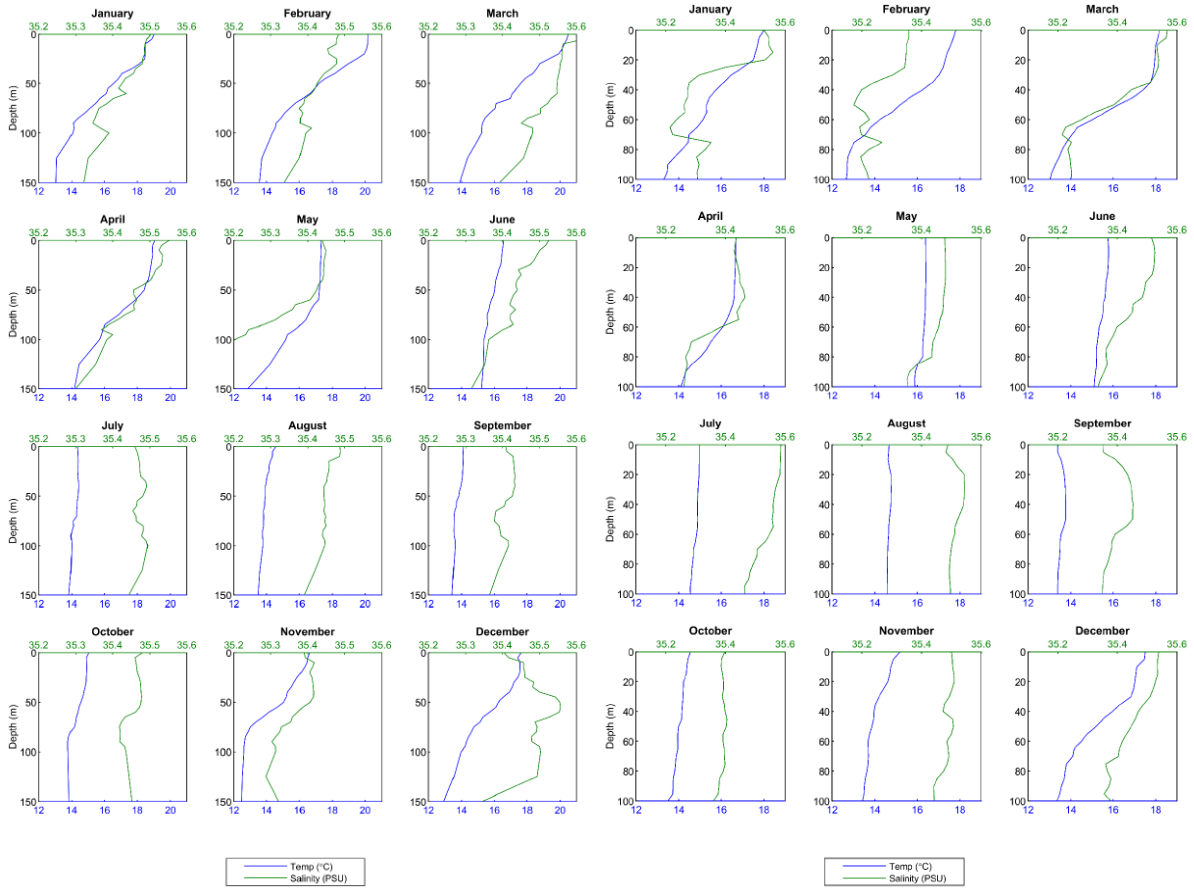


Figure 4-4: Monthly Temperature and Salinity Profiles Throughout the Water Column Gippsland Basin (left (RPS 2021)) and Otway Basin (right (RPS 2023)

4.2 Hydrocarbon Characteristics

4.2.1 Marine Diesel Oil

Vessels engaged will use MDO which is a mixture of both volatile and persistent hydrocarbons and is classified as Group II oil (light-persistent) based on categorisation and classification derived from AMSA (2015) guidelines. The classification is based on the specific gravity of hydrocarbons in combination with relevant boiling point ranges. Under constatn wind speed, MDO has the following behaviour at sea:

- the hydrocarbon spreads very rapidly to thin thicknesses elongated in the direction of the wind and current
- evaporation is the dominant process contributing to the removal of spilled MDO from the sea surface (depending upon wind conditions, sea state and sea temperature).
- MDO residues usually consist of heavy components which may persist for longer and tend to disperse as oil droplets in the upper layers of the water column in the presence of waves but can re-float to the surface if wave energies abate.

Table 4-1 provides the physical properties of MDO.

Table 4-1: MDO Properties and Behaviour

Properties		MDO
American Petroleum Institute (API) Gravity		24
Density @ 25°C (g/ml)		0.89
Dynamic Viscosity @ 25°C (cP)		14.0
Pour Point (°C)		-9
Boiling Point Curve (% mass)	**Volatiles (<180°C)**	4.0
	Semi-volatile (180-265°C)	32.0
	Low Volatility (265-380°C)	54.0
	Residual (>380°C)	10.0
Group		II

Source: Oil Spill Modelling Annie-2 *(RPS 2023)*

4.2.2 Patricia and Baleen

The PB reservoirs are dry gas as provided in Table 4-2. The reservoirs are now substantially depleted although Baleen has been observed to be pressure recharging over time.

Approximately 5 m^3 of Longtom condensate remains in the offshore PB pipeline in its current non-operations phase. The physical characteristics of the Longtom are provided in Table 4-3.

Table 4-2: PB Reservoir Conditions

Properties	Patricia-1	Patricia-2	Baleen-4
Maximum Pressure at Reservoir Depth	541 psia	541 psia	700 psia
Maximum temperature	49°C	49°C	49°C
Gas Specific Gravity	0.572	0.572	0.563
Condensate to Gas Oil Ratio (GOR)	~0.1 bbl/MMscf	~1 bbl/MMscf	~1 bbl/MMscf

Source: Well Operations Management Plan (WOMP) *(Santos 2014)*, PB Asset SCERP *(Cooper Energy 2022a)*

Table 4-3: Longtom Condensate Physical Properties

Properties		Longtom Condensate
API Gravity		51.2
Density @ 25°C (g/ml)		0.777
Dynamic Viscosity @ 20°C (cP)		1.081
GOR		10.85 stb/MMscf
Pour Point (°C)		-9 (when fresh)
Boiling Point Curve (% mass)	**Volatiles (<180°C)**	61.5
	Semi-volatile (180-265°C)	14.3
	Low Volatility (265-380°C)	21.1
	Residual (>380°C)	3.1

Properties	Longtom Condensate
International Tanker Owners Pollution Federation (ITOPF) Group	I

Source: Pipeline Safety Case – Non-Operational Phase *(Santos 2015)*

4.2.3 Sole

The Sole reservoir is a dry gas reservoir with very limited condensate observed or recovered during the well tests on Sole-2, Sole-3 and Sole-4. Physical characteristics of the Sole gas and condensate are provided in Table 4-4 and Table 4-5 respectively.

Table 4-4: Physical Characteristics of Sole Gas

Properties	Sole
Maximum Pressure at Reservoir Depth	1,147 psi
Maximum temperature	43°C
Gas Specific Gravity	0.589
Condensate to Gas Ratio	<0.1 bbl/MMscf

Source: Basic Data Report *(Cooper Energy 2018)*; Sole Asset SCERP *(Cooper Energy 2022b)*

Table 4-5: Sole Condensate Physical Properties (Intertek 2021)

Properties		Sole Condensate
API Gravity		36.6
Density @ 20°C (g/ml)		0.8414
Dynamic Viscosity @ 20°C (cSt)		1.709
Pour Point (°C)		<-36
Boiling Point Curve (% mass)	**Volatiles (<180°C)**	37.2
	Semi-volatile - Residual (>180°C)	62.8
ITOPF Group		II

Source: Sole condensate Assay *(Intertek 2021)*

4.2.4 Otway Facilities

The Otway reservoirs access the Waarre formation and are similar in nature. The CHN reservoirs have been producing for over a decade and hence are depleted relative to initial pressures. The Waarre Formation reservoirs are also the primary targets for the exploration drilling program.

The condensates of the Otway reservoirs are classified as a Group I oil (non-persistent). Table 4-6 provides the CHN and Annie reservoir conditions . The Annie-1 well was drilled and abandoned in 2019; it is located ~11 km northeast of the Casino field and modelling for Annie-1 well has been used as a conservative proxy for response planning purposes[1] in lieu of CHN specific modelling. Table 4-7 details the physical characteristics of the Annie condensate.

[1] *Refer to CHN-EN-EMP-001 for further information.*

Table 4-6: CHN and Annie Field Reservoir Conditions (Santos 2014)

Parameter	Casino Waarre C	Casino Waarre A	Henry	Netherby	Annie
Pressure at Reservoir Depth (psia)	Undepleted: 2850 Current: 515	Undepleted: 2830 Current: 880	Undepleted: 2670 Current: 880	Undepleted: 2550 Current: 505	Undepleted: 3280
Temperature (°C)	80	87	80	76	100
Gas Specific Gravity	0.59-0.65	0.59-0.65	0.59	0.58	0.66
Condensate to GOR	Undepleted: 1.1 bbls/MMscf Current: 0.3 bbls/MMscf				1.1 bbls/MMscf

Table 4-7: CHN and Annie Condensate Physical Properties

Properties		CHN Condensate	Annie Condensate
API Gravity		51.2	41.0
Density (g/ml)		0.774 (@ 25°C)	0.82 (@ 16°C)
Dynamic Viscosity (cP)		0.14 (@ 25°C)	1.063 (@ 20°C)
Pour Point (°C)		-54	-30
Boiling Point Curve (% mass)	**Volatiles (<180°C)**	84	8.0
	Semi-volatile (180-265°C)	14	6.5
	Low Volatility (265-380°C)	2	28.0
	Residual (>380°C)	-	17.5
ITOPF Group		I	II

4.3 Response Option Effectiveness

An assessment of the suitability and effectiveness of spill response options for the hydrocarbon types which could potentially be released from Cooper Energy's activities was undertaken in preparation of the corresponding EPs.

Table 4-8 provides a summary of this assessment and lists the response options suitable for mitigating spill impacts according to hydrocarbon type which may be present on the CHN, PB and Sole assets.

Given the hydrocarbon types the primary response strategy will be to initiate source control and then monitor and evaluate the spill (natural weathering). Additional, secondary measures to protect specific environmental sensitivities within the spill response area where response activities may offer net benefit includes protection and deflection, shoreline monitoring and clean-up (on sandy beaches) and OWR.

Further information on each of the selected response strategies is provided in Section 6 to Section 11.

Table 4-8: Response Option Summary for MDO, CHN, PB and Sole Hydrocarbons

Response Option (OPEP Section Reference)	Description	MDO	PB and Sole*	Otway
Source Control (OPEP Section 6)	Limit flow of hydrocarbons to environment.	✓	✓	✓

Response Option (OPEP Section Reference)	Description	MDO	PB and Sole*	Otway
Monitor & Evaluate (OPEP Section 7)	Direct observation-aerial or marine, vector calculations, OSTM, satellite tracking buoys. To maintain situational awareness, all monitor and evaluate options suitable.	✓	✓	✓
Dispersant Application	Breakdown surface spill & draw droplets into upper layers of water column. Increases biodegradation and weathering and provides benefit to sea-surface air breathing animals.	X	X	X**
Contain and Recover	Booms and skimmers to contain surface oil where there is a potential threat to environmental sensitivities.	X	X	X
Protect & Deflect (OPEP Section 8)	Booms and skimmers deployed to protect environmental sensitivities.	✓	✓	✓
Shoreline Clean-up (OPEP Section 9)	The selection and application of shoreline clean-up methods will take into account environmental sensitives based on NEBA.	✓	✓	✓
Oiled Wildlife Response (OPEP Section 10)	Consists of capture, cleaning and rehabilitation of oiled wildlife. May include hazing or pre-spill captive management.	✓	✓	✓

**Minor condensate content.*

***Dispersant is retained as a remote contingency – in case it is necessary to reduce surface VOCs and lower explosive limits associated with surface condensate near the well, to provide safe access for well control activities.*

4.4 Priority Protection Areas

Predictive modelling has been used to identify the areas that may be exposed to hydrocarbons from hypothetical worst-case spill scenarios. To identify the primary response planning areas the oil exposures from NOPSEMA's Environment bulletin - Oil spill modelling (2019) were used:

- a sea surface oil exposure of 50 g/m^2 as this represents the practical limit for surface response options; below this loading, oil containment, recovery, and chemical treatment (dispersant) become ineffective
- a shoreline contact exposure of 100 g/m^2 as this represents the minimum loading that is not likely to inhibit the potential for recovery; hydrocarbons below this loading may be best remediated by natural coastal processes alone.

The primary response planning areas were developed based on the modelling combination of the worst-case spill scenarios that covered the greatest area above the exposures previously stated for the PB and Sole and Otway assets.

Based on the modelling outputs, priority protection areas have been identified as have other areas where response strategies may be practically implemented. A timely and appropriate response for the identified areas for priority protection have been planned for in the EPs to ensure that the risks and impacts are ALARP and acceptable. A series of TRPs have been developed to assist in implementing a rapid response (Section 4.4.2).

4.4.1 Sensitivity Criteria

To support the identification of priority response areas, shoreline sensitivity analysis and mapping was undertaken guided by the International Petroleum Industry Environmental Conservation Association principles and informed by the regional description of the environment and understanding of receptor

presence in the region. Coastal landform types, habitats and other receptors within the region have been ranked based upon sensitivity to hydrocarbon exposure in accordance with the criteria in Table 4-9.

Table 4-9: Sensitivity Criteria

Sensitivity	Code	Criteria
Severe Impact	S1	Region of known sensitive habitat (e.g. mangrove, saltmarsh, wetlands) or landform type (e.g. sheltered tidal flats, sheltered rocky coasts), which if impacted may have significant impacts and long recovery periods. Known presence of feeding, breeding, or nesting behaviours of threatened species (e.g. biologically important areas [BIAs]). Other areas of ecological or social significance (e.g. marine protected areas, Ramsar wetlands, threatened ecological communities, Commonwealth heritage listed areas).
Medium Impact	S2	Region of known moderately sensitive habitats (e.g. seagrass) or landform type (e.g. exposed tidal flats) which have a medium recovery period (~2-5 years). Known presence of feeding, breeding, or nesting behaviours of non-threatened species (e.g. BIAs). Other areas of ecological or social significance (e.g. commercial fishing, tourist attractions, cultural heritage sites).
Low Impact	S3	Region of known low sensitivity habitat (e.g. subtidal rock) or landform type (e.g. sandy beaches, exposed rocky coasts) which have a rapid recovery period (~1 year). Other areas with expected minimal impact to marine life, commercial activities, public areas or cultural heritage sites.

4.4.2 Tactical Response Plans for Priority Protection Areas

TRPs are developed for sensitive sites predicted to be exposed to a hydrocarbon spill where there is limited time to contact above response threshold of >100 g/m^2 (as determined by predictive modelling). It is estimated that it takes approximately five days to develop and ground truth a tactical response plan and 24-48 hours to mobilise equipment and personnel to site; thus, those areas of high sensitivity within the priority response area with the potential to be exposed to hydrocarbons within 7 days were identified as the priority protection areas.

The primary response planning areas relevant to the PB and Sole assets and activities, are detailed in Table 4-10 along with the appropriate TRP. Table 4-11 includes the sites identified for CHN activities with the appropriate TRP. Further TRPs to those identified in these tables will be developed to cover sites and sensitivities in additional locations in case it is required. This would be undertaken as a part of IAPs in the operational response.

In addition to site-specific TRPs, the following Response Plans have been developed:

- species response plans:
  - southern right whale
  - sperm whale
  - white-faced storm petrel
  - short-tailed shearwater
- TRP – shoreline protection & clean up. Developed in collaboration with ExxonMobil, the purpose of the TRP is to provide a plan outlining the strategy to be adopted and actions required to undertake safe and effective shoreline protection and clean-up along any shoreline type, in response to a release of hydrocarbons to the marine environment in the Gippsland region

- up to date TRP listings are available at: IMT SharePoint Site – Tactical Response Plans. TRPs have been developed for various projects over a number of years, hence there is a much larger catalogue of TRPs available for reference than meets the criteria for the current operational activities; these are also available on the IMT SharePoint Site – Tactical Response Plans. Figure 4-5 shows a map of the TRPs currently on file within Cooper Energy and shared between relevant control agencies and operators.

Table 4-10: Priority Response Planning Areas for Scenarios Identified for the Gippsland Assets and Activities

Location	Latitude	Longitude	Summary	TRP
Betka river	-37.57	149.75	High coastal habitat sensitivity	Betka River
Cape Howe	-37.52	149.94	High coastal habitat sensitivity High biological sensitivity	Cape Howe Marine National Park
Gabo Island	-37.56	149.91	High coastal habitat sensitivity High biological sensitivity	Gabo Island
Point Hicks	-37.80	149.27	High biological sensitivity	Point Hicks
Shipwreck Creek	-37.64	149.70	High coastal habitat sensitivity High biological sensitivity	Shipwreck Creek
Tamboon Inlet	-37.78	149.14	High coastal habitat sensitivity High biological sensitivity	Tamboon Inlet
Tullaburga Island	-37.55	149.84	High biological sensitivity	Tullaburga Island
Yeerung River	-37.79	148.78	High coastal habitat sensitivity High biological sensitivity	Yeerung River

Table 4-11: Priority Response Planning Areas for Scenarios Identified for the Otway Assets and Activities

Location	Latitude	Longitude	Summary	TRP
Curdies Inlet	-38.60	142.87	State terrestrial protected area, International Union for Conservation of Nature (IUCN) Category III High coastal habitat sensitivity High biological sensitivity	Curdies Inlet
Lower Aire River Inlet (and Aire River mouth)	-38.81	143.46	State terrestrial protected area, IUCN Category II High coastal habitat sensitivity High biological sensitivity	Aire River Inlet
Port Campbell	-38.61	142.99	Coastal settlement Amenity beach, tourism, camping, fishing High coastal habitat sensitivity High biological sensitivity	Port Campbell
Princetown Wetlands (and Gellibrand River mouth)	-38.70	143.16	Coastal settlement Main industries are tourism and fishing (including port for rock lobster fishery)	Princetown / Gellibrand River

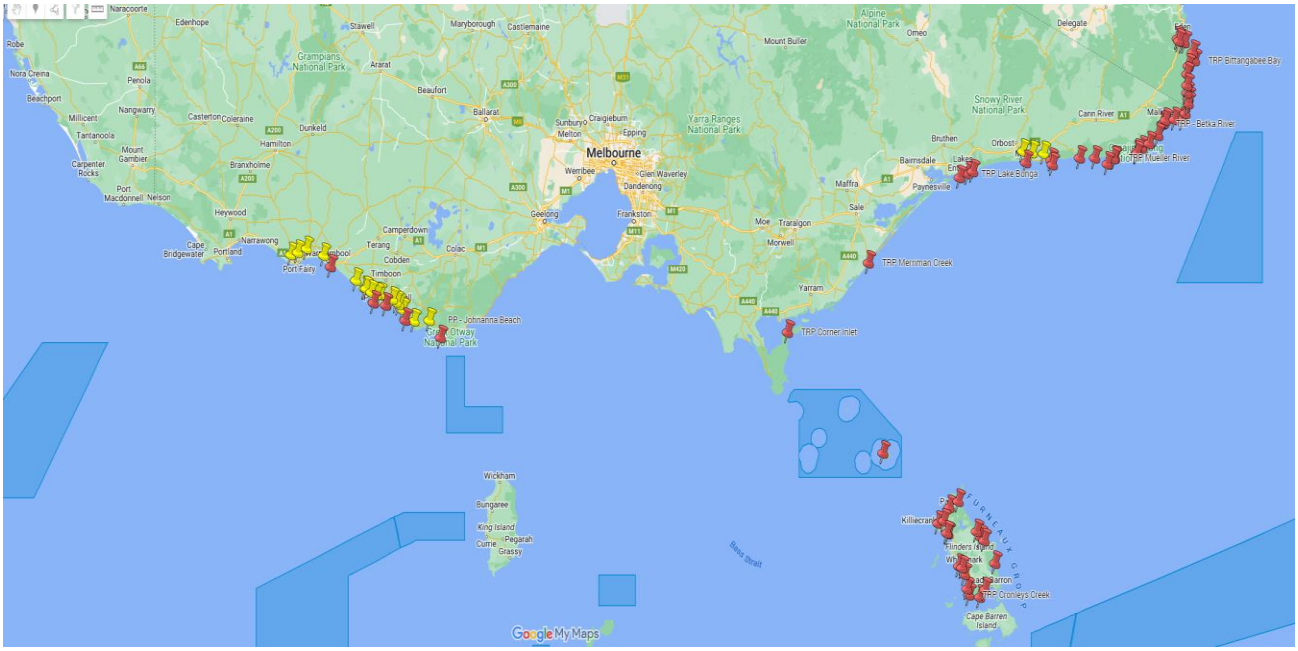


Figure 4-5: Map of TRP locations currently on File within Cooper Energy. (File Location: Tactical Response Plans)

4.4.3 Pre-spill Net Environmental Benefit Assessment

An assessment of effective spill mitigation techniques and the net benefit they offer to specific environmental sensitivities is provided in the following tables Table 4-12 and Table 4-13.

NOTE: wildlife response activities will focus on addressing wildlife welfare as a result of the spill regardless of the NEBA. The NEBA is an important tool in decision making, but provided it is safe to do so, all accessible wildlife with welfare needs should be addressed.

Table 4-12: Sensitivities within the Priority Response Planning Areas identified for the PB and Sole assets, Response Option Feasibility & Planning NEBA

Receptor	Classification		Priority Response Planning Area								Response Options							
			Betka River	Cape Howe	Gabo Island	Point Hicks	Shipwreck Creek	Tamboon Inlet	Tullaburga Island	Yeerung River	Response Option Effective?							
	Sensitivity	Marine	Betka River	Cape Howe Marine National Park (NP)	Gabo Island	Croajingolong NP Point Kicks Marine NP	Shipwreck Creek	Croajingolong NP	Tullaburga Island	Cape Conran Coastal Park	Oil Type	Source Control	Monitor and Evaluate	Dispersant Application	Contain and Recover	Protect and Deflect	Shoreline Clean-up	OWR
											MDO	Yes	Yes	No	No	Yes	Yes	Yes
											Condensate[2]	Yes	Yes	No	No	N/A	N/A	N/A
											Gas	Yes	Yes	No	No	N/A	N/A	N/A
Marine Ecology																		
Cetaceans	S1	✓										↑	-			N/A	N/A	N/A
Pinnipeds	S2	✓		✓	✓							↑	-			N/A	N/A	N/A
Turtles	S2	✓										↑	-			N/A	N/A	↑
Fish & Sharks	S2	✓	✓									↑	-			N/A	N/A	N/A
Seabirds	S1	✓		✓	✓		✓		✓			↑	-			N/A	N/A	↑
Shorebirds	S1		✓	✓	✓		✓		✓			↑	-			N/A	N/A	↑
Invertebrates	S3	✓										↑	-			N/A	N/A	N/A
Plankton	S3	✓										↑	-			N/A	N/A	N/A
Coastal Habitats																		
Saltmarsh/Seagrass	S1					✓				✓		↑	-			↑	↓	N/A
Mangroves	S1		✓									↑	-			↑	↓	N/A
Mudflats	S1		✓									↑	-			↑	↓	N/A
Kelp Habitats (inter-tidal)	S2											↑	-			N/A	N/A	N/A

[2] *No shoreline contact or surface sheen above response concentration thresholds is expected for gas or condensate spill; therefore, protection and detection, shoreline clean-up and oiled wildlife response are not applicable.*

Receptor	Classification		Priority Response Planning Area								Response Options							
			Betka River	Cape Howe	Gabo Island	Point Hicks	Shipwreck Creek	Tamboon Inlet	Tullaburga Island	Yeerung River	Response Option Effective?							
	Sensitivity	Marine	Betka River	Cape Howe Marine National Park (NP)	Gabo Island	Croajingolong NP Point Kicks Marine NP	Shipwreck Creek	Croajingolong NP	Tullaburga Island	Cape Conran Coastal Park	Oil Type	Source Control	Monitor and Evaluate	Dispersant Application	Contain and Recover	Protect and Deflect	Shoreline Clean-up	OWR
											MDO	Yes	Yes	No	No	Yes	Yes	Yes
											Condensate[2]	Yes	Yes	No	No	N/A	N/A	N/A
											Gas	Yes	Yes	No	No	N/A	N/A	N/A
Sand Beaches	S3		✓	✓	✓	✓	✓	✓	✓	✓		↑	-			N/A	↑	N/A
Sub-tidal Reef	S3											↑	-			N/A	N/A	N/A
Inter-tidal Rocky Plat/Headland	S3		✓			✓	✓					↑	-			N/A	↑	N/A
Wetlands	S1		✓					✓		✓		↑	-			↑	↓	N/A
Coastal Ecology																		
Shoreline Birds	S1			✓	✓	✓			✓			↑	-			↑	↑	↑
Pinniped Haul-out Sites	S2			✓	✓			✓				↑	-			N/A	N/A	↑
Penguin Colonies	S2			✓	✓				✓			↑	-			N/A	N/A	↑
Protected Area	S2		✓	✓			✓		✓			↑	-			N/A	N/A	↑
Socio-economic																		
Tourism	S2		✓	✓	✓	✓	✓			✓		↑	-			↑	↑	N/A
Amenity beach	S2		✓	✓	✓		✓					↑	-			↑	↑	N/A
Ports, Harbours, Yacht Club	S3					✓						↑	-			↑	↑	N/A
Commercial Fishing / Aquaculture	S2	✓										↑	-			N/A	↑	N/A
Recreational Fishing/Diving	S3		✓			✓	✓	✓		✓		↑	-			N/A	↑	N/A
Shipwrecks (submerged)	S3											↑	-			N/A	N/A	N/A
Aboriginal Heritage/Cultural	S2		✓	✓	✓	✓	✓	✓	✓	✓		↑	-			↑	↓	N/A

Legend

Benefits Assessment:	Effectiveness Assessment:
↑ Net Benefit Compared with only Monitor & Evaluate	Yes: Option suitable for oil type, few restrictions in implementing
↓ Net Loss Compared with only Monitor and Evaluate	Possible: Option suitable for oil type, potential limitations on application
- No net benefit or Loss	Not Recommended: Option not suitable for oil type
NA: Option is not applicable to the Receptor given credible worst-case discharge potential	

Table 4-13: Sensitivities within the Priority Response Planning Areas identified for the Otway assets, Response Option Feasibility & Planning NEBA

Receptor	Classification		Priority Response Planning Area				Response Options							
			Curdies Inlet	Aire River Wetlands	Port Campbell	Princetown Wetlands	Response Option Effective?							
	Sensitivity	Marine	Otway NP Aire River Beach Aire River	Otway NP Aire River Beach Aire River	Port Campbell Port Campbell Beach Port Campbell Inlet	Port Campbell NP Twelve Apostles Marine NP Gellibrand Rover	Oil Type	Source Control	Monitor and Evaluate	Dispersant Application	Contain and Recover	Protect and Deflect	Shoreline Clean-up	OWR
							MDO	Yes	Yes	No	No	Yes	Yes	Yes
							Condensate	Yes	Yes	No[3]	No	Yes	Yes	Yes
							Gas	Yes	Yes	No	No	No	No	No
Marine Ecology														
Cetaceans	S1	✓						↑	-			N/A	N/A	N/A
Pinnipeds	S2	✓						↑	-			N/A	N/A	↑
Turtles	S2	✓						↑	-			N/A	N/A	↑

[3] *Dispersant is retained as a remote contingency – in case it is necessary to reduce surface VOCs and lower explosive limits associated with surface condensate near the well, to provide safe access for well control activities. There would be no application outside of Cwth waters or in Marine Parks.*

Receptor	Classification		Priority Response Planning Area				Response Options							
			Curdies Inlet	Aire River Wetlands	Port Campbell	Princetown Wetlands	Response Option Effective?							
	Sensitivity	Marine	Otway NP Aire River Beach Aire River	Otway NP Aire River Beach Aire River	Port Campbell Port Campbell Beach Port Campbell Inlet	Port Campbell NP Twelve Apostles Marine NP Gellibrand Rover	Oil Type	Source Control	Monitor and Evaluate	Dispersant Application	Contain and Recover	Protect and Deflect	Shoreline Clean-up	OWR
							MDO	Yes	Yes	No	No	Yes	Yes	Yes
							Condensate	Yes	Yes	No[3]	No	Yes	Yes	Yes
							Gas	Yes	Yes	No	No	No	No	No
Fish & Sharks	S2	✓				✓		↑	-			N/A	N/A	N/A
Seabirds	S1	✓				✓		↑	-			N/A	N/A	↑
Shorebirds	S1					✓		↑	-			N/A	N/A	↑
Invertebrates	S3	✓				✓		↑	-			N/A	N/A	N/A
Plankton	S3	✓				✓		↑	-			N/A	N/A	N/A
Coastal Habitats														
Saltmarsh/Seagrass	S1		✓	✓	✓	✓		↑	-			↑	↓	N/A
Mangroves	S1							↑	-			↑	↓	N/A
Mudflats	S1							↑	-			↑	↓	N/A
Kelp Habitats (inter-tidal)	S2							↑	-			↑	N/A	N/A
Sand Beaches	S3		✓	✓	✓	✓		↑	-			↑	↑	N/A
Sub-tidal Reef	S3					✓		↑	-			↑	N/A	N/A
Inter-tidal Rocky Plat/Headland	S3		✓	✓	✓	✓		↑	-			↑	↑	N/A
Wetlands	S1		✓	✓	✓	✓		↑	-			↑	↓	N/A
Coastal Ecology														
Shoreline Birds	S1		✓	✓	✓	✓		↑	-			↑	↑	↑

Receptor	Classification		Priority Response Planning Area				Response Options							
			Curdies Inlet	Aire River Wetlands	Port Campbell	Princetown Wetlands	Response Option Effective?							
	Sensitivity	Marine	Otway NP Aire River Beach Aire River	Otway NP Aire River Beach Aire River	Port Campbell Port Campbell Beach Port Campbell Inlet	Port Campbell NP Twelve Apostles Marine NP Gellibrand Rover	Oil Type	Source Control	Monitor and Evaluate	Dispersant Application	Contain and Recover	Protect and Deflect	Shoreline Clean-up	OWR
							MDO	Yes	Yes	No	No	Yes	Yes	Yes
							Condensate	Yes	Yes	No[3]	No	Yes	Yes	Yes
							Gas	Yes	Yes	No	No	No	No	No
Pinniped Haul-out Sites	S2							↑	-			↑	N/A	↑
Penguin Colonies	S2		✓	✓		✓		↑	-			↑	N/A	↑
Protected areas	S2		✓	✓	✓	✓		↑	-			N/A	N/A	↑
Socio-economic														
Tourism	S2		✓	✓	✓	✓		↑	-			↑	↑	N/A
Amenity beach	S2		✓	✓	✓	✓		↑	-			↑	↑	N/A
Ports, Harbours, Yacht Club	S3				✓			↑	-			↑	↑	N/A
Commercial Fishing / Aquaculture	S2	✓			✓			↑	-			↑	↑	N/A
Recreational Fishing/Diving	S3		✓	✓	✓	✓		↑	-			↑	↑	N/A
Shipwrecks (submerged)	S3		✓		✓	✓		↑	-			N/A	N/A	N/A
Aboriginal Heritage/Cultural	S2		✓		✓			↑	-			↑	↓	N/A

Legend

Benefits Assessment:	Effectiveness Assessment:
↑ Net Benefit Compared with only Monitor & Evaluate	Yes: Option suitable for oil type, few restrictions in implementing

Benefits Assessment:	Effectiveness Assessment:
↓ Net Loss Compared with only Monitor and Evaluate	Possible: Option suitable for oil type, potential limitations on application
- No net benefit or Loss	Not Recommended: Option not suitable for oil type
N/A: Option is not applicable to the Receptor given credible worst-case discharge potential	

5 Operational Response

Section 4 presents the predicted response options to a spill, however in the event of a spill, the proposed likely response strategies will be reviewed and verified prior to implementation to ensure that the assumptions made in the planning process are valid and the response strategy will be effective.

5.1 Verification of Response Strategy

The process for reviewing response strategies is illustrated in Figure 5-1. The purpose of including this process in the OPEP is to ensure effective and efficient decision making into selecting response strategies which are suitable to the conditions at the location at the time of the spill event. Outputs from this process are captured through the spill response NEBA process.

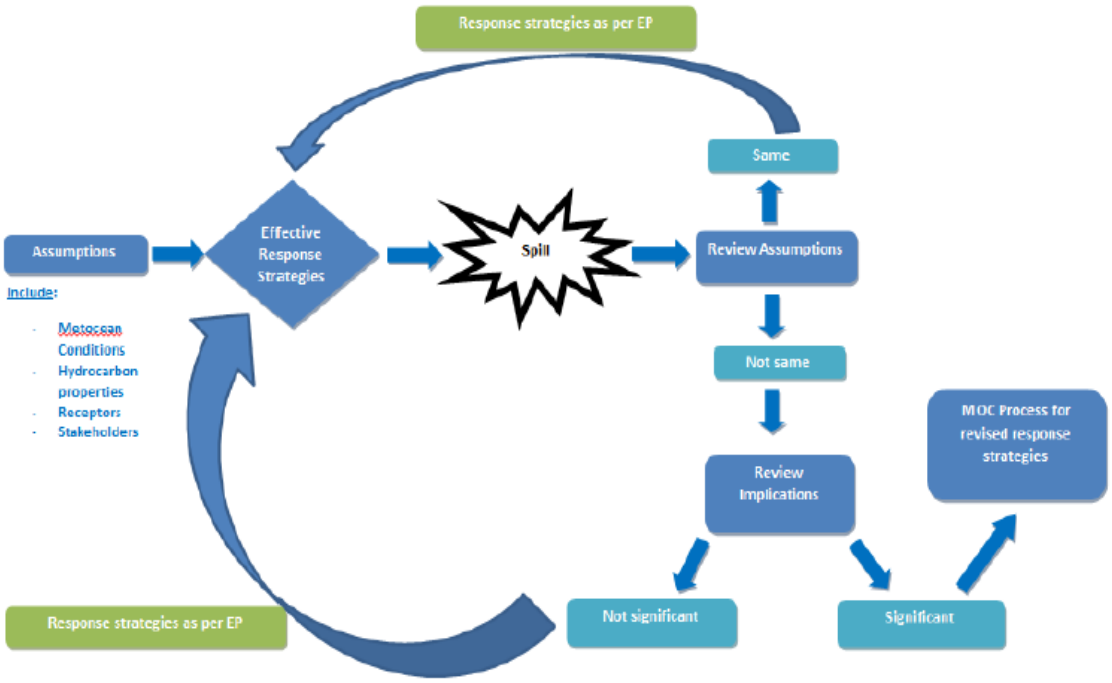


Figure 5-1: Process for Reviewing Response Strategy Effectiveness in the Event of a Spill

5.2 Spill Operational NEBA

A NEBA is used to compare the environmental and socio-economic benefits of implementing a response option against a 'do-nothing' (monitor and evaluate) strategy. The process considers the advantages and disadvantages of implementing a response to arrive at a response strategy for the location which results in the lowest overall environmental and socioeconomic impacts.

The NEBA process has been developed to help facilitate the selection of the most appropriate response options to effectively combat an oil spill.

Pre-spill (planning) NEBAs have been undertaken for locations within the respective asset response Environment that may be affected to identify response strategies which may offer a net benefit. In the

event of a spill, an operational NEBA will be completed to confirm net benefits based upon the spill volume, spill type, spill location, weather conditions, weathering and trajectory predictions (including any aerial surveillance output), and the sensitivities requiring protection.

If impacts to state waters or shorelines are predicted, or have occurred, an operational NEBA will be undertaken in consultation with the relevant State CA, such as a DTP Liaison Officer or Victorian Environmental and Scientific Coordinator to confirm the net benefits for the strategy for spill occuring within Victorian waters.

To ensure consistency of approach between Cooper Energy and the relevant State CA (DTP) for the spill scenarios identified for the Cooper Energy Assets and activities (see Section 1.2) with respect to NEBAs, Cooper Energy has adopted the Victorian NEBA protocol from Victorian Maritime Emergencies NSR subplan which is consistent with the pre-spill (planning) NEBA undertaken in Section 4. The Victorian Maritime Emergencies NSR subplan NEBA template is provided in Appendix 2.

When the operational NEBA is finalised, the IC must endorse the assessment. The NEBA must be used to develop the IAP for the spill incident.

Provided it is safe to do so, all accessible wildlife with welfare needs should be addressed DEECA, supported by the Titleholder, regardless of the NEBA.

5.3 Incident Action Plan

An IAP will be prepared at the time of the spill, outlining the short-term operational objectives and activities for the response. It will detail the response mechanisms and priority areas for protection based on the actual circumstances of the event, considering the spill trajectory and weather conditions, but also importantly safety considerations. The IAP will provide details of the operational activities and objectives to be achieved over a specified, short-term period. Initially this may be for the subsequent few hours only, but once the operation is underway it is likely to address the activities required over each of the following 24-hour periods or longer.

The main steps in planning the response and preparing the IAP are:

- setting the incident objectives – what are we trying to do or what are we trying to protect?
- describing the strategies – for example, deployment of planes for aerial surveillance
- developing the tactics – detail how we will undertake these strategies including responsibilities, logistics, etc.

An IAP is a critical step in the response strategy. It is the responsibility of the Planning Officer to prepare an IAP under the direction of the IC for his endorsement. The Cooper Energy oil spill IMT will implement and monitor the effectiveness of the IAP ensuring regular updates to the plan are made as appropriate.

To ensure that the IAP is appropriate for the nature of the spill, Cooper Energy will seek the advisory support of technical experts or liaison officers from the relevant State agencies, AMSA and/or AMOSC.

An IAP template is included in Appendix 1.

5.4 Effectiveness Monitoring

During the incident response, the effectiveness of the response will be assessed using the NEBA process. This assessment must utilise predictive modelling results, received monitoring data in the context of the affected environment, the environmental conditions and the level of hydrocarbons released.

Initially this will be undertaken every 24 hours (as minimum) or when relevant new information is received, until the termination criteria have been met. The NEBA, in consultation with the relevant State CA will be used to inform the decision to terminate the response (refer to Section 5.5).

Outcomes of the effectiveness monitoring will inform the IAP process.

5.5 Response Termination

Generally, the decision to stop the spill response will be made by the CA when response efforts are not returning any tangible benefit. This may include a gradual downsizing of response teams and resources or complete termination of the response. Cooper Energy will undertake a NEBA with the relevant response team members / liaison officers to inform the decision to terminate the response in line with the NEBA format used in formulating the spill response strategy.

Decision factors will include:

- the efficacy and benefit of the response options implemented against natural cleaning
- the significance of the environmental receptor impacted
- potential for environmental damage caused by further clean-up efforts weighed up against other factors such as response team risk in undertaking the activity
- any other requirements under national or state plans.

Table 5-1 provides indicative termination criteria which may be amended because of response team advice and/or the outcomes of relevant persons consultation during a spill event. Although indicative, it provides a guide for the purpose of capability planning.

For spill clean-up operations in Victorian waters, termination of response will be taken by the state IC.

The IC will ensure that all relevant organisations and personnel are notified to stand down once the termination criteria have been satisfied. Upon conclusion of the response, the IC must:

- inform all personnel involved in the response
- advise all government authorities involved in the response
- provide an incident brief internally and to all government authorities involved in the response
- instigate an investigation into the cause of the spill
- prepare reports and collate all documents including statements concerning the incident
- undertake an inventory of all consumables and prepare accounts for dissemination.

Table 5-1: Spill Response Termination Criteria

Response Option	Termination Criteria
Source Control (Vessel/subsea)	Termination criteria varies according to the incident and spill level: • for vessels: the spill source has been eliminated (e.g. fuel tank is secure [tank rupture]) or the leak has been contained and controlled on-board • for pipeline: the pipeline is verified as isolated from feedstock • for a subsea well leak incident: the hydrocarbon release has been contained and well control re-established.
Monitor and evaluate	Termination occurs when the following criteria is fulfilled: • the spill has ceased

Response Option	Termination Criteria
	• the spill is no longer visible to human observers. Specifically, a silver/grey sheen as defined by the Bonn Agreement Oil Appearance Code is not observable and 24 hours 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 the relevant State CA for a spill in state waters.
Chemical dispersion	Termination occurs when the following criteria is fulfilled: • When dispersant is not assisting in supressing LELs; and / or, • If the risk associated with LELs is managed by other means; and/or • Agreement is reached with Statutory Agency to terminate the response
Contain and recover	N/A
Protect and deflect	To be determined in consultation with State CA and aligned with the National Plan Response, Assessment and Termination Guidance (NP-GUI-025). Suggested termination criteria: • 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 continued activity will not produce any net environmental benefit. NEBA has been signed off by State CA IC.
Shoreline assessment and clean-up	To be determined in consultation with State CA, and aligned with the National Plan Response, Assessment and Termination Guidance (NP-GUI-025). Suggested criteria: • the spill has ceased • no additional response or clean-up of habitat is predicted • location areas predicted to be contacted by hydrocarbons have been contacted • independent scientific advice indicates that hydrocarbon levels are below 100 g/m^2 or further clean-up activities are unlikely to materially decrease hydrocarbon impacts on environmental sensitivities.
OWR	To be determined in consultation with State CA and relevant State nominated oiled wildlife authority. Suggested criteria: • OWR is discontinued when all affected/recovered animals are cleaned and rehabilitated to their natural habitat as advised by the Lead CA.

6 Source Control

6.1 Response Activities

6.1.1 Vessel releases (level 1/2)

The performance outcome for vessel-related hydrocarbon releases is provided in Table 6-1.

Table 6-1: Source Control – Vessels (level 1/2 spills)

Spill Level	Environmental Performance Outcome	Control	Performance Standard	Measurement Criteria
1/2	Source control, isolation and containment prevent hydrocarbon release to the marine environment.	C5 Vessel SMPEP or equivalent	In a level 1/2 spill, the vessel implements SMPEP (or equivalent) to prevent/limit discharge to the environment.	Vessel incident report verifies action taken.

Level 1 Spill

Vessels engaged to undertake petroleum activities on Cooper Energy assets operate under SMPEPs (or equivalent to class). In the event of a spill the relevant vessel SMPEP (or equivalent) will be implemented to limit the volume of hydrocarbon released to the environment.

Level 2 Spill

In the event of a spill such as a diesel release from a vessel, the vessel master will initiate actions to reduce the fuel to the marine environment as identified in the vessel SMPEP (or equivalent according to class).

While preserving the structural integrity and stability of the vessel, actions include reducing the affected tank inventory by pumping contents into an empty tank, possibly pumping water into the leaking tank to create a water cushion to prevent cargo loss or other measures as listed in the vessel's SMPEP (or equivalent). By immediately implementing these controls the amount of hydrocarbon released to the environment will be reduced.

6.1.2 Subsea Loss of Containment – Infrastructure (level 1)

A subsea infrastructure LoC could occur because of dropped objects, corrosion and other damage, with a volume in the order of 1 m^3.

On notification of an incident associated with a loss of containment resulting from loss of integrity or dropped object, the IC will assess damage and accessibility, and options to minimise the release; this may include plugging of release points.

6.1.3 Subsea Loss of Containment - Pipeline Releases (level 1/2)

Operation of the Otway and PB and Sole facilities is monitored on a 24/7 basis by the respective onshore gas plants (Figure 1-1 and Figure 1-2). The pipelines contain gas and condensate and in the event of a pipeline release due to an integrity breach a key strategy is the Facility Emergency Shutdown (ESD) system:

- individual well shutdown is initiated by the Master Control System in the event of a low-low pressure downstream of the production choke valve. This shutdown is independent of the Gas Plant and the Facility ESD system

- pipeline is continuously monitored from the onshore plant to ensure it is operating within its predefined operating envelope. Initiation of the pipeline ESD system will shut down production and isolate hydrocarbon inventories in the pipeline if abnormal conditions outside the normal operating envelope are detected
- surface controlled subsurface safety valves meet the acceptable leak rates defined by API RP 14B and ESD valves according to API RP 14H
- the ESD system is considered safety critical equipment under the respective Facility Safety Cases. Performance Standards developed for this equipment ensures it functions according to design standards.

6.1.4 Subsea Loss of Containment – LOWC (level 3)

On notification of an incident associated with a loss of well control, the Cooper Energy Duty Manager will notify the IC of the incident. The IC will activate the relevant SCERP and notify the Cooper Energy SCT Leader. Upon SCERP initiation, the SCT Leader will mobilise the Cooper Energy SCT and Well Control Contractors and collectively these resources will assess and determine the appropriate source control option based upon the available surveillance/survey information.

Options to manage well control incidents (intervention and relief well installation) are to be considered as a means for source control during the operations phase, with vessel and MODU specifications required to implement these source control options identified within the SCERP.

Details of source control response feasibility and estimated response time are detailed in the respective EPs.

6.2 Response Resources

6.2.1 Source Control

Cooper Energy maintains contracts/agreements with specialist vendors to supply technical services and guidance for source control operations.

Well source control activities, including methodologies and resources to implement source control and limit the hydrocarbon released to the environment are detailed in a SCERP for the respective activity. Table 6-2 details the planned resource availability as applicable to a drilling activity.

Table 6-2: Source Control Resource Availability (Drilling)

Resource	Resource Requirement	Resource Availability / Provider
Survey, Debris Clearance, Intervention, Dispersant Application		
Engineering support	Well and subsea engineering support services	Available throughout projects and operations.
Vessels	Installation support vessel with knuckle boom crane (nominal >50 tonnes for safe deployment of subsea equipment) and remotely operated vehicle (ROV) capacity (or ROV can be deployed from separate vessel).	Vessels of opportunity typically available either in the region or elsewhere within Australia and could be mobilised via Australian Petroleum Production & Exploration Association (APPEA) MoU or direct agreement.
Offshore Personnel	Vessel crew and response equipment technicians to install, run and monitor equipment.	Vessel crew provided through vessel operator. Equipment Technicians provided through response specialists. Equipment operator provided through source control contractor or separate offshore engineering contractor.

Resource	Resource Requirement	Resource Availability / Provider
ROVs and ROV crew	Work Class ROV and crew 24 hours/day to install and operate subsea equipment.	Refer to 'Vessels'
Equipment	Survey and debris clearance equipment: • Camera inspection ROV operated • ROVs • Grinders / super grinders • Impact wrenches • Multipurpose cleaning tools • Remote control units • Hydraulic cutters • Chop saws • Diamond wire cutters • Hydraulic power units • ROV dredges • Torque tools • Test jig • Pressure control equipment intervention skid and operating equipment • Linear valve override tools • Manipulator knife • Flying lead orientation tool • Umbilicals	Survey, debris clearance and dispersant application equipment could be mobilised from equipment providers such as AMOSC (subsea first response toolkit package within Australia), or Wild Well Control (international) subject to additional agreement for the particular package required at the time.
Dispersant application	• Dispersant IBCs (~170m^3), approx. 1.6m^3 / day @ 1:100 (dispersant: oil) application ratio • Surface dispersant booms • Distribution hose and manifolds • Pumps • Subsea Dispersant wand for ROV • ROV bladder packs • In-water monitoring (refer to OSMP) • Surface plume modelling • Gas detection monitors (see additional resources below)	AMOSC have >500m^3 Dasic Slickgone (preferred product for condensate and subsea application) NS available. 75m^3 available at AMOSC in Geelong, less that 1-day sail to Otway Title Areas. Additional supply could be mobilised from Fremantle. Vessel application equipment (Ayles Fernie Even Drop Out (AFEDO) or similar) is available through AMOSC and could be fitted to response vessels involved in well intervention at the well site. Vessel crew / riggers provided through vessel operators. Subsea application equipment is available through AMOSC/Oceaneering Subsea First Response Toolkit, or through Wild Well Control. Similar to oil spill modelling, subsea plume modelling would be undertaken regularly during an incident to assist in understanding the nature/direction of the plume and associated LELs in the atmosphere surrounding the well site. Subsea plume modelling is undertaken by specialist modellers and is available through existing agreements.
Relief Well		
Engineering Support	Well and subsea engineering support services	Available throughout projects and operations. For additional support, Cooper Energy maintains several contracts and agreements with personnel agencies and engineering houses that can provide technical writer's and risk engineering services to support regulatory documentation workflows, submission, and review process.
Relief Well MODU	Technically suitable rig and support vessels (nominally 2 x anchor handling and tow support vessels).	Multiple suitable semi-submersible MODUs generally operate offshore Australia or are available internationally; moored rigs would already be operating with anchor handling tug supply vessels. MoU has been established between Australian operators (including Cooper Energy) to expediate access to suitable

Resource	Resource Requirement	Resource Availability / Provider
		MODUs for relief well drilling. If required Cooper Energy can request the use of a MODU that may be under contract to another operator.
Materials	Casing and Wellhead (standard specifications) Drilling fluids Moorings	Multiple materials suppliers to Australia, to enable mobilisation of relief well materials to site inside 50-days of an incident requiring response activation. Multiple providers of drilling fluids with plants either operational or can be set-up in the Southeast region. Mobile Offshore Unit moorings or rental moorings.
Offshore Personnel	Vessel crew and response equipment technicians to install, run and monitor equipment.	Vessel crew provided through vessel operator. Equipment Technicians provided through response specialists. Equipment operator provided through source control contractor or separate offshore engineering contractor.
ROVs and ROV crew	Work Class ROV and crew 24 hours/day to install and operate subsea equipment.	Refer to 'Vessels'
Cooper Energy Relief Well Readiness Form	The Cooper Energy Relief Well Readiness Form is a live document and supports source control preparedness by documenting current information on the availability and location of resources required to manage a LoC from a well, more specifically: • available and suitable MODUs and contacts • available installation support vessel and contacts • available equipment* required to support a source control response and contacts. *Tracked equipment includes wellhead systems, conductor, surface and intermediate casing.	The Cooper Energy Relief Well Readiness Form is verified every 6-months during operations phase and every 2 months during drilling.
Regulatory Approvals		
Safety Case	Facility Safety Case Revision required for vessels undertaking well activities.	Preferential selection of MODUs and vessels with existing Australian safety cases (monitored via the relief well readiness form). Safety case specialists available within Australia to enable expedition of Safety Case Revision preparation (technical limit to prepare estimated at three weeks + one week for prioritised regulatory approval).
Additional resources		
Gas monitors	Existing vessel / rig gas monitoring; additional portable gas monitoring / portable gas monitoring as required.	Multiple providers.

6.3 Environmental Risk Assessment (Source Control)

An assessment of possible environmental impact and risk associated with source control techniques is undertaken as part of the respective Environment Plans.

6.4 Environmental Performance Outcomes (Source Control)

Table 6-3 provides the performance outcomes, standards and measurement criteria for source control.

Table 6-3: Source Control Performance Outcomes and Standards

Performance Outcome	Control	Environmental Performance Standard	Responsible person	Measurement Criteria
Cooper Energy maintains capability to implement the Source Control Emergency Response	C6 Source Control Emergency Response Planning	A SCERP aligned to the APPEA Source Control Guideline will be available and will include (or be supplemented by): • accepted WOMP and Field Safety Case which provide for source control activities • pre-identified quadrant(s) suitable for relief well locations covering all well clusters • nominal mooring analysis for drilling in field from moored MODU, where applicable.	Chief Operating Officer	SCERP in place
	C7 Source Control Emergency Response Personnel	Cooper Energy maintains: • resourcing plan to enable the implementation of source control strategies defined within the SCERP relevant to the activity scope. • agreements or contractor pre-qualifications with specialist service providers, including: - well control specialist (e.g. Wild Well Control) - well engineering services providers - Australian safety case expertise - subsea engineering services - ROV contractors.	Chief Operating Officer	Contracts/ agreements demonstrate preparedness.
	C8 Source Control Emergency Response Equipment	Cooper Energy maintains agreements or contractor pre-qualifications with service providers in line with the strategies and equipment defined within the campaign SCERP, including: • survey equipment • debris clearance equipment • dispersant and application equipment • intervention equipment • industry MoU for access to relief well resources including relief well MODU.	Chief Operating Officer	Contracts/ agreements demonstrate preparedness.

	C9 Source Control Response Resources Monitoring	Cooper Energy monitors the location and availability of source control response resources and materials defined within the campaign SCERP, including: • available and suitable MODUs and contacts • available construction 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 strings.	Chief Operating Officer	Completed relief well readiness form (verified every 6-months during operations) SCERP response time model (RTMs) (reviewed annually, accounting for information received through the relief well readiness form)
	C10 Source Control Response Logistics	Cooper Energy maintains agreements or contractor pre-qualifications with the following specialists: • freight services provider.	Chief Operating Officer	Contracts/ agreements demonstrate preparedness.
	C11 Source Control Response Exercises	Cooper Energy conducts source control desktop exercise in accordance with the activity SCERP.	Chief Operating Officer	Facilitated by third party with report issued in 30 days.
Implement Source Control Emergency Response Plan to eliminate the release of hydrocarbons to the environment	C12 Source Control Response	Applicable source control response resources are mobilised within the shortest practicable timeframe and within the timeframes identified by the SCERP RTM (refer to asset EP).	Cooper Energy IC	Incident log verifies field mobilisation within SCERP RTM timeframes.
No unacceptable risk chemicals used for activities described	C13 Chemical selection process	All planned chemical discharges shall be assessed and deemed acceptable before use, in accordance with Cooper Energy's Offshore Environment Chemical Assessment Process (COE-MS-RCP-0042).	IC	Chemicals will meet the requirements of the Cooper Energy Offshore Chemical Assessment Procedure
Dispersant is only used when and where needed for the safety of personnel to access the well site	C14 Oil Spill and Gas Plume Spill Modelling	Oil Spill and Gas Plume Modelling are used alongside in-field measurements of LELs to determine if and where dispersant will necessary and effective at reducing LELs at the well site.	IC	Modelling Reports In filed LEL measurements Interpretation of the above data and advice to field team.
	C15 In field measurements of LELs			

7 Monitor and Evaluate

Ongoing monitoring and evaluation of the oil spill is a key strategy and critical for maintaining situational awareness and to complement and support the success of other response activities. In some situations, monitoring and evaluation may be the primary response strategy where the spill volume/risk reduction through dispersion and weathering processes is considered the most appropriate response. Monitor and evaluate will apply to all marine spills identified. Higher levels of surveillance such as vessel/aerial surveillance, OSTM and deployment of satellite tracking drifter buoys will only be undertaken for level 2/3 spills given the nature and scale of the spill risk.

It is the responsibility of the CA to undertake monitoring and evaluation during the spill event to inform the response and assess the impacts.

7.1 Response Activities

Monitoring and evaluation will include the following:

- spill size estimation:
  - information regarding the incident (volumes, inventory etc.)
  - aerial and vessel observations.
- spill movement and behaviour:
  - aerial and vessel observations
  - utilisation of satellite tracking drifter buoys.
- spill trajectory prediction:
  - OSTM
  - vector analysis (manual calculation)
  - ADIOS (a spill weathering model).

Refer to activity-specific EPs for the evaluation of potential impacts and risk and as low as reasonably practicable (ALARP) evaluation associated monitoring and evaluation strategies.

7.1.1 Spill Size Estimation

The spill size may be determined based on:

- the estimated amount of hydrocarbon released from a 'known' hydrocarbon inventory
- an estimate of release rates from time of the commencement of the incident
- an estimate of the appearance of oil on the sea surface observed during visual observations and based on the likely thickness and type of oil (refer to Table 7-1 and Figure 7-1).

Table 7-1: Guidelines for Estimating Spill Volume

Code	Description of Appearance	Approximate Thickness (µm)	Approximate litres per km^2
1	Sheen	0.04 to 0.30	40-300
2	Rainbow	0.3 to 5.0	300-5,000
3	Metallic	5.0 to 50	5,000-50,000

Code	Description of Appearance	Approximate Thickness (µm)	Approximate litres per km^2
4	Discontinuous true oil colour (heavy oil)	50 to 200	50,000 – 200,000
5	Continuous true colour (heavy oil)	>200	>200,000
Other	Mousse or Emulsion		

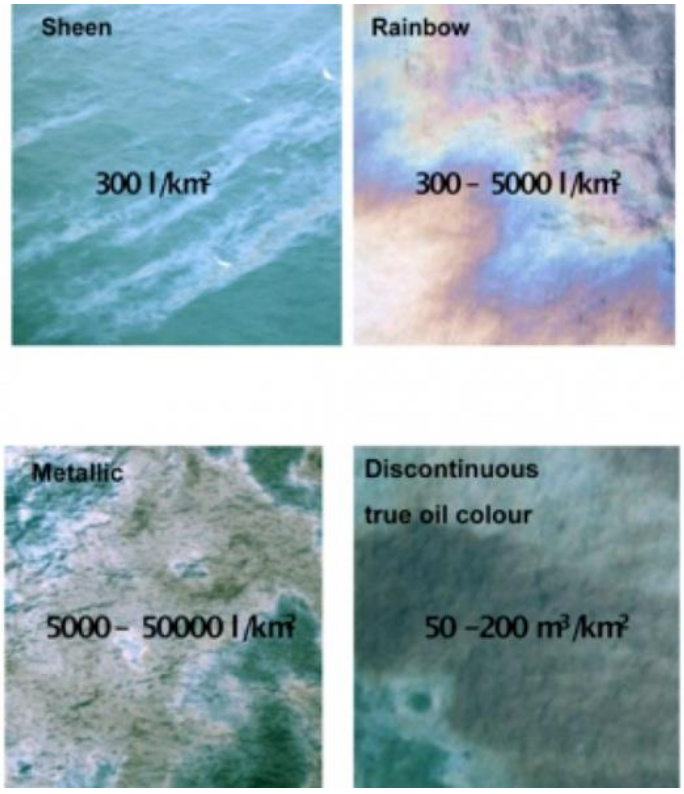


Figure 7-1: Bonn Agreement Oil Appearance Code (Examples)

7.1.2 Spill Movement and Behaviour Monitoring

The movement and behaviour of an oil slick may be monitored through several methods:

- aerial and/or vessel based visual observations
- tracking buoys.

The resources required for this strategy are summarised in Table 7-2 with the corresponding performance outcomes, standard and measurement criteria presented in Table 7-3.

7.1.2.1 Visual Observation - Aerial Surveillance

To gain situational awareness and inform the spill response, observation can be carried out via aerial surveillance.

Trained aerial observers are available and sourced through AMOSC (staff/core group members) and AMSA (NRT Members). The observers will undertake observations over the spill location and any predicted areas of shoreline contact.

From aerial observations, coarse estimates of spill volume can be made based on its appearance at sea, using the area covered and colour of spill (Table 7-1). Examples of appearance are provided in Figure 7-1. AMSA also provides guidance called 'Identification of Oil on Water – Aerial Observation and Identification Guide' which can be found at: https://www.amsa.gov.au/sites/default/files/2014-01-mp-amsa22-identification-oil-on-water.pdf

Aerial surveillance observations can only be undertaken in weather conditions deemed safe by the IMT and in good visibility conditions (i.e. 150 ft above ground level (AGL) for the Ceiling & 5,000 m Visibility or 1,500 ft AGL Ceiling & 1,500 m Visibility during daylight hours).

Aerial observations should be documented in the Aerial Observer log contained in the Offshore Victoria OSMP Module OP2 – Hydrocarbon Spill Surveillance and Tracking (VIC-ER-EMP-0005).

7.1.2.2 Visual Monitoring – Vessel Surveillance

Monitoring and evaluation may involve visual monitoring from vessels of opportunity (as available) immediately following a spill incident. For level 2/3 spills, visual observations may also be undertaken from specially chartered vessels, proposed to be onsite within 24 hours.

Spill observers may include project team members, vessel crew and in the event of a level 2/3 spill, AMOSC staff/core group members and/or AMSA NRT members.

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

7.1.2.3 Satellite Tracking Drifter Buoys

Vessels associated with Cooper Energy's activities may carry a satellite tracking drifter buoy for deployment in the event of a significant spill. Instructions are provided for the deployment of the buoy to the vessel master.

At the time of a level 2/3 spill, the drifter buoy will be activated and deployed overboard to allow for real-time satellite tracking of the spill direction and speed. The location of the buoy will be monitored in real-time and through regular data downloads.

Satellite tracking buoys currently in use by Cooper Energy have an operating life/endurance which is determined by the reporting frequency. The default endurance is 30 days based on 30-minute reporting frequency. However, this could be extended out to 365 days endurance for a reporting frequency of 24 hours.

7.1.3 Spill Trajectory Prediction

Spill trajectory can be predicted using either:

- vector calculations
- trajectory modelling
- fate predictions.

7.1.3.1 Vector Calculations

Manual calculations can commence as soon as the preliminary information on the spill is known. For spills in close proximity to shore and where oil spill tracking buoys are utilised, this method may provide the best option for predicting the likely spill trajectory and timeframes before receptors are impacted.

Prior to commencing the calculation, wind and current data is required. This can be obtained via:

- for currents, Oil Spill Tracking Buoy
- for winds, Bureau of Meteorology (BOM) Meteye (http://www.bom.gov.au/australia/meteye).

The calculation is based on the spill moving 100% of the current vector and 3% of the wind vector, as shown in Figure 7-2.

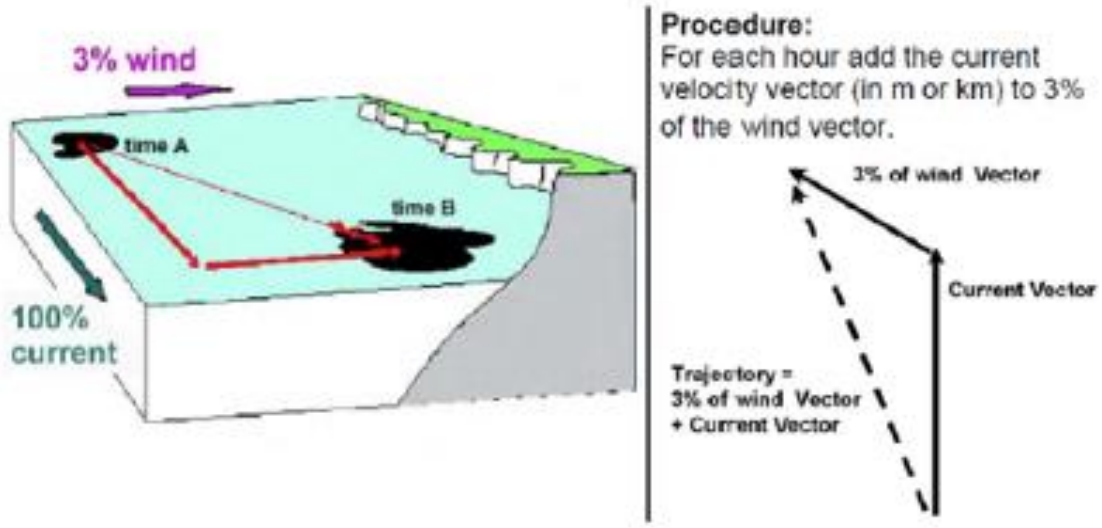


Figure 7-2: Spill Vectoring Overview (AMSA Oil Spill Monitoring Handbook)

7.1.3.2 Oil Spill Trajectory Modelling

The movement of a hydrocarbon slick can be estimated in real time using computerised OSTM available from RPS. Cooper Energy can utilise an AMOSC agreement with RPS to provide real-time modelling of an actual spill event. RPS have previously been utilised to undertake predictive modelling to support the preparation of the asset EPs and this OPEP.

To predict the early movement of larger spills, RPS will undertake real-time OSTM. Preliminary modelling results are generally available within 4 hours following notification of a spill event. RPS are contracted to AMOSC in a 24/7 emergency capability.

For smaller spills closer to shore Cooper Energy may elect not to undertake trajectory modelling due to the limitations of using the model near shore with such small volumes. Satellite tracking drifter buoys together with aerial observations and shoreline assessment may be used to ground truth the spill location.

During the spill, RPS will utilise all available information from operational surveillance monitoring and from satellite imagery (as available) to validate hydrodynamic forecasts.

7.1.3.3 Spill Fate Prediction

The ADIOS can be used to provide weathering predictions of hydrocarbon types for spill volumes at different wind speeds and water temperatures. This computer-based oil spill response tool is available to download from http://response.restoration.noaa.gov/oil-and-chemical-spills/oil-spills/response-tools/downloading-installing-and-running-adios.html

7.1.4 Oil Spill Operational Monitoring

Based on the outcomes of the monitoring of spill characteristics, trajectory and behaviour and prediction of likely trajectory and fate of the spill, operational monitoring will be undertaken as per the OSMP.

7.2 Response Resources

Table 7-2 details the resources required to undertake monitor and evaluate activities in accordance with the identified required resources above, their availability and hence Cooper Energy's capability to support a 'monitor and evaluate' response.

Table 7-2: Monitor and Evaluate Resource Capability

Resource	Resource Requirement	Resource Availability	Comments
Satellite Tracking Buoys	1 x Satellite Tracking Buoy offshore	Buoys available from AMOSC or Worley Parsons.	Satellite Tracking Buoy will be located offshore and ready for deployment for the duration of the campaign. Operating instructions which accompany buoy rental will be provided to contracting vessel prior to mobilisation with instruction to deploy from vessel in the event of a significant spill event.
OSTM	Access to RPS via contract to initiate callout on a 24/7 basis.	AMOSC contract with RPS for immediate call-out.	AMOSC membership allows access to RPS contract which provides for Oil Spill Model and Response System results to be provided within two hours and Spill Impact Mapping model system results within four hours of activation. *AMOSC Service Level Statement confirms access to RPS Trajectory Modelling within 60 minutes.*
Manual Trajectory Calculation	1 x IMT Member (IMO2)	IMT Planning Officer (or equivalent).	Resources available within Cooper Energy.
	Current and Wind Data	BOM "Meteye" Service.	Wind data available online. Current data obtained from satellite tracking buoy.
Satellite Imagery	Access to Kongsberg Satellite (KSAT) Satellite imagery via contract to initiate callout on a 24/7 basis.	AMOSC contract with KSAT Services for immediate call-out.	AMOSC membership allows access to Kongsberg contract which provides access to KSAT Satellite Imagery within 60 minutes of notification. *Imagery to be determined at the time of request will dictate supply timeframes depending on satellite availability.*
Aerial/Vessel Surveillance	1 x Pilot/Aircraft	Pre-qualification with Offshore Services Australasia (formerly Warrnambool Babcock).	Supplier has identified that surplus aircraft are usually available and can be supplied within 24 hours.

Resource	Resource Requirement	Resource Availability	Comments
	1 x aerial observer	Trained observers via AMOSC.	Available on site – best endeavours eight personnel within three hours and guaranteed terrestrially in 12 hours (AMOSC Service Level Agreement). AMOSC has five trained observers and AMOSC Core Group have four trained members available within 24-48 hours. *AMOSC Service Level Statement confirms AMOSC Core Group activation – within one hour of initial activation.*
	1 x vessels	Vessel contract with Undersea Marine Pty Ltd.	Cooper Energy maintains an agreement with a Marine Services provider to provide vessels and can be supplied within 24 hours.

7.3 Environmental Risk Assessment (Monitor and Evaluate)

An assessment of possible environmental impact and risk associated with operational monitoring has been undertaken as part of the EPs for the Cooper Energy assets.

7.4 Environmental Performance Outcomes (Monitor and Evaluate)

Table 7-3 identifies monitoring and evaluation strategy outcomes, performance standards and measurement criteria. Cooper Energy oil spill IC (or delegate) will ensure the activity control measures identified below are implemented.

Table 7-3: Monitor and Evaluate Performance Outcomes and Standards

Performance Outcome	Control	Performance standard	Responsible person	Measurement Criteria
Cooper Energy maintains capability to implement operational monitoring in a level 2/3 spill event.	C16: Service Agreements Monitor & Evaluate	Cooper Energy maintains the following agreements (or contractor pre-qualifications) to maintain operational response capabilities: • AMOSC membership (Aerial Observers, RPS Contract, Kongsberg Contract) • aviation support (pre-qualification assessment) • marine support services.	Chief Operating Officer	Contracts, memberships and pre-qualification records are current.
	C17: Oil Spill Tracking Buoy	An oil spill tracking buoy and instructions for deployment will be located offshore at all times during vessel-based campaigns.	Chief Operating Officer	Equipment manifest (or equivalent evidence) verifies tracking buoy is available on-board / offshore.
As requested by the relevant CA Cooper Energy implements operational monitoring to inform spill	C18: Response Aerial Observation	Operational monitoring is initiated during daylight hours within 24 hours for aircraft observation. Observation to be undertaken in accordance with OSMP OP2 (Hydrocarbon Spill Surveillance and Tracking).	Cooper Energy IC	Spill response log notes that aircraft are deployed within 24 hours of spill (or nearest daylight hours immediately post 24 hours). Completed Aerial Observation Logs (as per OSMP OP2) emailed to Cooper Energy IMT.

Performance Outcome	Control	Performance standard	Responsible person	Measurement Criteria
response (level 2/3 spill only).	C19: Response – Vessel Observation	Operational monitoring from campaign vessels already in-field is initiated immediately (within 2 hours). Observation to be undertaken in accordance with OSMP OP2 (Hydrocarbon Spill Surveillance and Tracking).	Cooper Energy IC	Spill response log notes that in-field vessels are deployed within 2 hours of spill. Completed Observation Logs (as per OSMP OP2) emailed to Cooper Energy IMT.
	C20: OSTM	RPS provides OSTM results within four hours of spill notification in accordance with OSMP OP1 (Operational Forecast Modelling).	Cooper Energy IC	Incident records verify operational monitoring timeframes are met.
	C21: Response – Oil Spill Vector Calculation	Manual vector calculations identify spill impact areas within two hours of spill incident notification.	Cooper Energy IC	Spill response log verifies manual trajectory calculation is provided within two hours of spill notification.
No injuries or death of megafauna resulting from vessel strike within operational area	C22: Prevention of Marine Fauna Collision	Vessel masters will be briefed on caution and 'no approach zones' and interaction management actions as defined in the EPBC Regulations 2000 – Part 8 Division 8.1 and Victorian Wildlife (Marine Mammals) Regulations 2019.	HSE Advisor	Training records confirm vessel masters have been briefed.
		A vessel master (or delegate) will be on duty at all times.	Vessel Master	Bridge watch records confirm vessel master (or delegate) on duty at all times.
		Vessels adhere to the distances and vessel management practices of EPBC Regulations (Part 8) and Victorian Wildlife (Marine Mammals) Regulations 2019.	Vessel Master	Daily operations reports note when cetaceans were sighted in the caution zone and if actions were implemented.
		All vessel crew have completed an environmental induction covering the requirements for marine mammal/vessel interaction consistent with EPBC Regulations 2000 (Chapter 8) and Victorian Wildlife (Marine Mammals) Regulations 2019. This includes a requirement to notify the bridge if marine mammals are sighted in the caution zone.	HSE Advisor	Induction records verify that all vessel crew have completed an environmental induction.
		Trained crew members on active duty will report observations of megafauna located within the cautionary zone (as defined in The Australian Guidelines for Whale and Dolphin Watching) to the vessel master (or their delegate), as soon as it is safe to do so.	Vessel Master	Daily vessel reports note when cetaceans were sighted in the caution zone and if interaction management actions were implemented.
		Surveillance aircraft will ensure buffer distances of 500 m (helicopters) and 300 m (fixed wing) are maintained to whales and dolphins.	Pilots	Flight reports detail when cetaceans sighted and if buffer distances breached.
Injury or death to listed megafauna from vessel strike will be reported	C23: 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.	Vessel Master	Submission date on the National Ship Strike Database reporting within 72 hours of the incident.

8 Shoreline Response: Protect & Deflect

8.1 Response Activities

Booms and skimmers deployed to protect or deflect oil from environmental sensitivities. Noting that the effectiveness of boom operation is dependent on current, wave and wind conditions.

The methods to be used in the response have been proposed for the priority protection areas. These, where applicable, are detailed in the respective TRPs, but options may include:

- installation of a boom system to collect surface oils on incoming tidal events
- placement of a temporary sand barrier/berm across the inlet mouth if the prevailing flow regime (channel width, depth, and flow) is suitable.

8.2 Response Resources

Response resources would be activated via AMOSC in the first instance, with equipment and resources selected on the basis of the TRP activation and subsequent IAPs. AMOSC has undertaken an assessment of response resource needs for this strategy and have determined how these needs will be met.

Protection and deflection equipment and personnel will be accessed from multiple locations, including:

- AMOSC Geelong equipment stockpile. A selection of boom/skimmer types will be mobilised with the equipment to be deployed at the location selected based upon the environmental conditions on the day.
- AMOSPlan Industry Mutual Aid stockpile (Esso Australia) located at Longford and Barry Beach Marine Terminal. This equipment may be deployed in addition to the AMOSC equipment due to its closer proximity.
- Gippsland Ports Authority (located at Lakes Entrance) also has boom available, to protect estuary systems. This is the property of DTP and Gippsland Ports, as port authority for the Snowy River would provide a first-strike response in the port. In the event of a rapid response to an oil spill threat, the IC (or delegate) would liaise with DTP and Gippsland Ports for deployment of this equipment.
- Port Authority of NSW maintains its own stockpile of level 2/3 equipment which is stored at its level 1 equipment locations in Sydney and Newcastle. Oil companies also own a quantity of oil spill response equipment which is stored on their individual premises.

Equipment details are provided in Table 8-1. The timing and resources required were identified based on the Otway scenarios, representing the minimum time for shoreline concentration (>50 g/m^2) to occur, which is ~24 hours.

Table 8-1: Protection and Deflection Response Resource List

Resource	Resource Requirement	Resource Availability	Comments
Trained oil spill response personnel	2 x boom deployment personnel 2 x skimmer and recovery personnel	Trained personnel available from AMOSC/AMOSPlan Core Group	As part of AMOSC's Service Level Agreement on a best endeavour's basis, 8 AMOSC personnel can be deployed to site within 12 hours. AMOSPlan Core Group are IMO trained for field deployment of spill equipment and are available on an 'as soon as practicable' basis. 25-30 personnel from this group would be

Resource	Resource Requirement	Resource Availability	Comments
			available within 24-48 hours. These personnel are available through Cooper Energy's membership with AMOSC.
Boom and ancillary equipment	200 m x zoom boom 200 m beach guardian boom 4 x anchor kits (including ropes and floats)	AMOSC Equipment Supply	Loading of equipment would be expected within 12-24 hours. Transit time to Peterborough or Lakes Entrance (for example) from Geelong is ~3 – 5 hours. Boom deployment timeframes for a significant offshore MDO spill should meet the predicted shortest time to shore of 24-48 hours, however it is unlikely that boom deployment could occur within short timeframes involved in instantaneous releases nearshore such as pipeline rupture. Such a scenario could result in relatively small volumes / sheens of low persistence condensate ashore before physical intervention is possible.
Boom Deployment Vessel	1 x Zodiac & Trailer 1 x Coxswain	AMOSC Equipment supply Cooper Energy Marine Services Provider	Contractor is available on a 7-day basis to assist with Boom Deployment Vessel. As above resource availability is expected to meet boom deployment timeframes (24-48 hours).
Boom Deployment Vessel (Contingency)	1 x Vessel (Dinghy 30 HP Trailable)	VIC DTP (Williamstown)	Equipment may be made available on request to VIC DTP.
Skimmer and ancillary Equipment	1 x Multi-head Caradyne Skimmer 1 x Lamor Powerpack 1 x Hose reel	AMOSC Equipment Supply	All equipment can be placed on the back of a Utility and can be carried by personnel. Does not need mechanical equipment to transfer. Availability is expected to meet boom deployment timeframes (24-48 hours).
Temporary Water Storage	2 x Fastank 1 x Transfer Pump and Hose	AMOSC equipment Supplies	Contractor is available on a 7-day basis to assist with water storage. Availability is expected to meet the predicted shortest time to shore of 24 hours but within 48h.
Waste Management Contractor	Waste Management Provider	Cooper Energy has contract with waste management provider in Victoria	Contractor is available on a 7-day basis to assist with emergency waste management issues.
Mechanical Equipment	1 x Mini-Excavator & Driver	Coates Hire (Warrnambool)	Equipment and operator available onsite within 5 hours. Coates Hire has 24/7 call-out and can supply a driver to Peterborough.

8.3 Environmental Risk Assessment (Protect & Deflect)

An assessment of possible environmental impact and risk associated with protect and deflect activities has been undertaken as part of the EPs preparation for the Cooper Energy assets.

8.4 Environmental Performance Outcomes (Protect & Deflect)

Table 8-2 provides the performance outcomes, standards and measurement criteria for the "protect and deflect" response option. The IC (or delegate) will ensure the activity control measures identified below are implemented.

Table 8-2: Protect and Deflect – Performance Outcomes and Standards

Performance Outcome	Control	Performance standard	Responsible person	Measurement Criteria
Tactical response planning undertaken for priority protection sites	C24 TRPs	TRPs exist for priority protection areas identified in Section 4.4.2 prior to undertaking activities that have the potential to impact these locations.	Chief Operating Officer	TRPs developed prior to petroleum activities that could impact priority protection areas identified in Section 4.4.2.
Cooper Energy maintains capability to implement protect and deflect in a level 2 or 3 spill event.	C25 Service Agreements Protect & Deflect	Cooper Energy maintains the following agreements to maintain shoreline assessment/protect and deflect capabilities: • AMOSC membership (equipment, personnel, CORE Group. Mutual aid) • AMOS Plan Industry Mutual aid (equipment) • AMSA support obligations under the National Plan (equipment, personnel) • scientific resource support agreement • marine support services • vessel of Opportunity listing • waste management contract.	Chief Operating Officer	Agreements/memberships are current. NatPlan
Cooper Energy implements or supplies resources for shoreline protection and deflection (level 2 or 3 spill), appropriate to the nature and scale of predicted shoreline impacts.	C26 Shoreline Assessment – Resource Deployment	SCAT teams deployed and available onsite within 24 hours of spill event (daylight hours permitting) in consultation with the State CA. SCAT information provided to the Planning function of the IMT for NEBA preparation, which will form part of the IAP.	Cooper Energy Incident Controller	Incident management records verify that SCAT teams are deployed to site within the designated timeframe.
	C27 Operational NEBA	An operational NEBA is undertaken to determine net benefits with State CA to confirm implementation of the response strategy.	Cooper Energy Incident Controller	Operational NEBA is available, approved and was undertaken prior to shoreline protect and deflect.
Impacts to cultural heritage and social values are prevented	C28 Consultation with Traditional owners	In consultation with State CA, engage with Traditional Owners to facilitate site surveys and tagging out and protection of identified areas or importance.	Cooper Energy Incident Controller	Incident records verify consultation has occurred and controls implemented.
	C29 Land and Waterway Manager Consultation	In conjunction with State CA, consultation is undertaken with land and waterway manager prior to deployment of equipment to establish recreational user controls along affected coastline.	Cooper Energy Incident Controller	Incident records verify consultation has occurred and controls implemented.
Impacts to native vegetation and fauna are prevented.	C30 Site survey for critical habitat	Surveys are undertaken to identify, mark out and protect nesting and critical habitat. Existing tracks and paths are used where possible to minimise disturbance footprint.	Cooper Energy Incident Controller	Incident records verify surveys have occurred and controls implemented.

Performance Outcome	Control	Performance standard	Responsible person	Measurement Criteria
	C31 Trained Fauna Handlers	Only trained and accredited teams deployed by the Lead Agency for oiled wildlife will approach and handle fauna.	Cooper Energy Incident Controller (as directed by the Lead Agency)	Shoreline induction reinforces this constraint. Induction records.

9 Shoreline Response: Clean-up

Shorelines in the Gippsland region are predominantly sand with rocky inter-tidal platforms and headlands. Shorelines associated with the Otway region are predominantly shore platforms backed by cliffs with small sections of interspersed sand beaches.

Based on stochastic modelling of the spill scenarios associated with the Cooper Energy assets, the potential hydrocarbon exposure to shorelines from a hydrocarbon release is limited to less than 105 m^3 (peak volume ashore) for operations and up to 406.3 m^3 (peak volume ashore) for drilling activities. The worst case deterministic run from the modelling has identified up to 348.4 m^3 on day 104 following a release as the peak volume ashore (during drilling activities).

As per Section 2.2, a State IMT would be established in response to a level 2/3 spill, actionable shoreline oil contact (>100 g/m^2) is predicted to impact only Victorian coastline. As such, the CA would be DTP for managing shoreline response and/or at-sea response within State waters. Cooper Energy will remain actively engaged in the response until stood down by the DTP IC and will place a Cooper Energy liaison Coordinator within the state IMT. Cooper Energy remains responsible for managing the origin of the spill outside Victorian coastal waters.

DTP will place a Liaison Officer within the IMT to act as the interface with other State government agencies and to ensure ongoing consultation and coordination of Maritime Emergencies resources.

9.1 Response Activities

9.1.1 Shoreline Assessment

Cooper Energy will support shoreline assessment and/or clean-up activities as directed by DTP.

If spill residues are predicted to reach the shoreline or aerial observations show oil has reached the shoreline, an assessment of the area will be undertaken using SCAT.

SCAT execution is described in Appendix 4.

9.1.2 Shoreline Clean-up

If oil is observed on the shoreline a NEBA will be prepared in consultation with DTP to determine whether a clean-up response will be implemented.

Based upon predictions of hydrocarbons fate and behaviour for PB and Sole scenarios, clean-up response would involve the manual removal of minimal amounts of weathered MDO from exposed sandy shorelines. No mechanical removal would be required; however, mechanical washing may be a suitable option for diesel residues where machinery access to the beach is possible.

Based upon predictions of hydrocarbons fate and behaviour for Otway scenarios, clean-up response would involve the manual removal of actionable (>100 g/m^2) and weathered condensate and MDO on shorelines. Mechanical washing may be a suitable option for hydrocarbon residues where machinery access to the beach is possible.

To understand the response equipment and personnel associated with shoreline clean-up response, Cooper Energy identified the quantity and type of equipment and personnel required for a single response team (Table 9-1). This information is based upon the assumption that each manual clean-up team has the treatment capacity of 10 m^3 per day (based upon a single person collecting 1 m^3 per day); and each

mechanical collection team had a treatment capacity of 2.4 m^3 per hour (based upon bucket size of 0.04 m^3 and a single excavation per minute).

Table 9-1: Single Shoreline Clean-up Team Equipment and Personnel Requirements

Equipment/personnel	Requirements
Manual clean-up	
Support personnel	10
Team supervisor	1
Waste storage (per team)	10 m^3 per day
Mechanical collection	
Equipment (single excavator/machine)	1
Operator	1
Waste storage (per team)	25 m^3 per day

Cooper Energy identified the estimated waste types associated with shoreline clean-up response techniques to provide a conservative indication as to the level of waste that may be required to be managed during a response. Based upon a bulking factor of 10 m^3 per day for each 'shoreline clean-up team', Cooper Energy has estimated that the volume of waste that may need to be managed could be up to 1,050 m^3 based on spill modelling suggesting maximum volume of hydrocarbons ashore is less than 105 m^3 and volume of collected oil based on multiplying by a factor of ten (AMSA 2017).

9.1.3 Laboratory Analysis

SCAT resources will obtain samples of any oil on shorelines and send to a National Association of Testing Authorities accredited laboratory for the analysis of hydrocarbon properties (including Benzene, Toluene, Ethyl-benzene, Xylene and Poly-aromatic hydrocarbons) and the physical properties of the oil (including wax content).

9.2 Response Resources

The number and tasks of personnel will vary according to the quantity of spill debris, its rate of delivery to the site and the disposal method chosen. Response resources would be activated via AMOSC in the first instance, with equipment and resources selected based on the TRP activation and subsequent IAPs. Table 9-2 details the resources required to undertake shoreline clean-up activities and their availability to support a 'shoreline clean-up' response.

Table 9-2: Shoreline Assessment and Clean-up Resource Requirements and Capability

Resource	Resource Requirement	Resource Availability	Comments
Shoreline Assessment			
Trained SCAT Crew	2 x Teams Shoreline Assessment Specialists: 1 x wildlife specialist 1 x marine specialist 1 x oil spill specialist	AMOSC/AMOSC Core Group Additional resources from OSMP support group (e.g. GHS), VIC DTP or AMSA National	As part of AMOSC's Service Level Agreement on a best endeavour's basis, 8 AMOSC personnel can be deployed to site within 12 hours. AMOSPlan Core Group are IMO trained for field deployment of spill equipment and are available on an 'as soon as practicable' basis. 25-30 personnel from this group would be available within 24-

Resource	Resource Requirement	Resource Availability	Comments
		Response Support Team.	48 hours. These personnel are available through Cooper Energy's membership with AMOSC. Cooper Energy contract for scientific specialists allows for deployment to field within 24 hours of notification.
Shoreline Clean-up			
Shoreline Clean-up Team Leaders	2 x trained shoreline team leaders (2 teams provided)	AMOSC AMOSC Core Group.	Resourcing as above for SCAT crew deployment.
Shoreline Clean-up Responders	20 persons (2 teams)	AMOSC AMOSC Core Group.	Resourcing as above for SCAT crew deployment.
Waste Management Support Services	Waste Management Contractor	Cooper Energy has contract with waste management provider in Victoria.	Cooper Energy waste contracts to support waste disposal from shoreline clean-up activities.
Beach Clean-up Kit/Trailer	1 x Beach Clean-up Kit (Geelong)	AMOSC.	AMOSC deployment and arrival at site expected within 12 hours.
	2 x Beach Clean-up Kits (Williamstown North) 1 x Beach Clean-up Kit (Port Fairy)	VIC DTP Port of Portland.	Access to equipment via VIC DTP and Port of Portland.
Decontamination Kit	1 x Decontamination Kit (Geelong)	AMOSC.	AMOSC deployment and arrival at site expected within 12 hours.
	1 x Decontamination Kit (Williamstown North) 1 x Decontamination Kit (Portland)	VIC DTP Port of Portland.	Access to equipment via VIC DTP and Port of Portland.
Waste Bags	20 L Plastic Bags	AMOSC.	AMOSC deployment and arrival at site expected within 12 hours.
Mechanical Equipment (surf washing)	Mini-excavators	Third Party Equipment Hire (e.g. Coates Hire) or local excavation Contractors.	Availability of equipment within 5 hours.

9.3 Environmental Risk Assessment (Shoreline Clean-up)

An assessment of possible environmental impact and risk associated with shoreline assessment and clean-up activities has been undertaken as part of the EPs collation for the Cooper Energy assets.

9.4 Environmental Performance Outcomes (Shoreline Clean-up)

Table 9-3 provides the performance outcomes, standards and measurement criteria for shoreline clean-up. The IC will ensure the control measures identified below are implemented.

Table 9-3: Shoreline Response – Performance Outcomes and Standards

Environmental Performance Outcome	Control	Environmental Performance standard	Responsible person	Measurement Criteria
Cooper Energy maintains capability to	C32 Service Agreements	Cooper Energy maintains the following agreements to maintain	Chief Operating Officer	Agreements/memberships are current.

Environmental Performance Outcome	Control	Environmental Performance standard	Responsible person	Measurement Criteria
implement SCAT and shoreline clean-up in a level 2/3 spill event.	Shoreline Clean-up	shoreline assessment/clean-up response capabilities: • AMOSC membership (equipment, personnel, Core Group. Mutual aid). • AMOSPlan Industry Mutual aid (equipment) • scientific resource support agreement • waste management contract • labour hire provider.		
Cooper Energy implements or supplies resources for shoreline assessment and clean-up (level 2/3 spill), appropriate to the nature and scale of predicted shoreline impacts.	C33 Shoreline Assessment – Resource Deployment	SCAT teams deployed and available onsite within 12 hours of spill event (daylight hours permitting) in consultation with the relevant State CA. Note: SCAT information will be provided to Planning function of the IMT for NEBA preparation, which will form part of the IAP.	Cooper Energy IC	Incident management records verify that SCAT teams are deployed to site within the designated timeframe.
	C27 Operational NEBA	An operational NEBA is undertaken to determine net benefits with relevant State CA. to confirm implementation of the response strategy.	Cooper Energy IC	Operational NEBA is available, approved and was undertaken prior to shoreline clean-up.
Impacts to cultural heritage and social values are prevented	C28 Consultation with Traditional owners	In consultation with State CA, engage with Traditional Owners to facilitate site surveys and tagging out and protection of identified areas or importance.	Cooper Energy IC	Incident records verify consultation has occurred and controls implemented.
	C29 Land and Waterway Manager Consultation	In conjunction with relevant State CA. , consultation is undertaken with land and waterway manager prior to deployment of equipment to establish recreational user controls along affected coastline.	Cooper Energy IC	Incident records verify consultation has occurred and controls implemented.
Impacts to native vegetation and fauna are prevented.	C30 Site survey for critical habitat	Surveys are undertaken to identify, mark out and protect nesting and critical habitat. Existing tracks and paths are used where possible to minimise disturbance footprint.	Cooper Energy IC	Incident records verify surveys have occurred and controls implemented.
	C31 Trained Fauna Handlers	Only trained and accredited teams deployed by the Lead Agency for oiled wildlife will approach and handle fauna.	Site Representative	Shoreline induction reinforces this constraint. Induction records.

10 Oiled Wildlife Response

10.1 Wildlife Sensitivities

Based upon the environmental sensitivities present in the NEBA assessment (Appendix 2) and the asset EPs, fauna which may be affected by hydrocarbon residues include seabirds, shorebirds, pinnipeds and whales. The potential for hydrocarbon impact to these species is detailed in respective asset EPs.

10.2 Notification and Response Arrangements

Each State has a dedicated agency responsible for responding to wildlife affected by a marine pollution emergency in State waters. If a small incident which affects wildlife occurs in Commonwealth waters, AMSA may request support from relevant State agency to assess and lead a response if required. State agency response to oiled wildlife is undertaken in accordance with the State specific Wildlife Response Plan (or equivalent).

Cooper Energy will provide support for the response through the provision of resources. The equipment which Cooper Energy can supply or coordinate through external assistance (such as AMOSC) includes:

- vessels for transport of wildlife and equipment
- oiled fauna kits
- wildlife intake and triage
- wildlife cleaning and rehabilitation kits.

Personnel may also be deployed under the direction of State CA to undertaken wildlife response activities. Only trained resources may interact with oiled fauna species in accordance with the *Victorian Wildlife Act 1975*. Should OWR is required, follow the following steps:

- notify the relevant State Duty Officer or State Agency Commander for wildlife within the jurisdiction immediately
- notify AMSA if the oil spill occurs in Commonwealth waters and wildlife is affected
- determine the exact location of the animal and provide accurate directions. Maintain observation until State agency can deploy staff to the site.
- take response actions only as advised by State agency or AMSA:
  - determine the exact location of the animal for accurate directions for appropriately trained wildlife response personnel. Maintain observation and keep people, dogs, and wildlife scavengers away until accredited wildlife teams have arrived
  - avoid handling or treating injured wildlife as this may cause further stress and injury and poses a safety risk to untrained handlers.

10.3 Response Activities

OWR can be broken down into three stages; primary, secondary and tertiary (refer to Table 10-1).

Table 10-1: OWR Phases

Response Phase	Response Activity Description
Primary Response	This response is associated with hydrocarbon recovery and removing the threat of oil to wildlife. For this OPEP this involves source control, deflection and protection and shoreline assessment and clean-up.
Secondary Response	This response uses hazing and pre-emptive capture techniques. Hazing techniques include systems to keep wildlife away from areas where impact is expected through a system of artificial threats (including noise and visual devices). The decision to undertake this within Victorian boundaries would be determined by DEECA as the Lead Agency for oiled wildlife. Pre-emptive capture involves: • the isolation and/or capture of wildlife from contaminated sites by either physical barriers preventing access or exclusion to contaminated sites • transferring the wildlife well away from contaminated sites and releasing them • holding the wildlife in short-term captivity, while the contamination threat is removed. Secondary responses are unlikely to be required.
Tertiary Response	Tertiary response will be applied as required by oil spill trained and accredited teams deployed by the Lead Agency. Tertiary response includes capturing, cleaning, rehabilitation, transportation, and stabilisation of contaminated wildlife for release.

10.4 Response Resources

Oiled Wildlife Waste Management

The hydrocarbons associated with the Otway and PB and Sole activities are volatile, and either light or non-persistent. The ecological environment that may be affected associated with any single spill scenario is also limited. Whilst there is potential for oiled wildlife to occur, the numbers of individuals potentially impacted would likely be small. Based on the WA Oiled Wildlife Response Plan (DBCA DoT 2022) impact rating guide (for resource estimation), the release scenarios in this OPEP is assessed as low-medium, accounting for a relatively low level of response over a protracted period.

Although high numbers of oiled wildlife would not be expected as a result of the scenarios covered in this OPEP, response resources would be activated. AMOSC would be activated in the first instance, in consultation with the relevant State agencies (DTP and DEECA in Victorian State waters), with equipment and resources selected on the basis of the TRP activation and subsequent IAPs.

Table 10-2 details the resources required to undertake an OWR. However, Cooper Energy will not deploy any resources without first receiving a formal deployment request from relevant State agency.

Table 10-2: Oiled Wildlife Response Resource List

Resource	Resource Requirement	Resource Availability	Comments
Specialist Oiled Wildlife Response Capability	Wildlife Response Commander	To be provided by Lead Agency for oiled wildlife	In accordance with State specific Wildlife Response Plan (or equivalent).
Oiled Wildlife recovery team supervisor	1 per team	To be provided by Lead Agency for oiled wildlife	In accordance with State specific Wildlife Response Plan (or equivalent)
Oiled wildlife response personnel	Trained Group of first response personnel	Lead Agency for oiled wildlife	In accordance with State specific Wildlife Response Plan (or equivalent)
	AMOSC Industry Team (mutual aid):	AMOSC	Industry team trained for field deployment of spill equipment and are available on an 'as

Resource	Resource Requirement	Resource Availability	Comments
	10 personnel trained to level 2-4 [WA Department of Parks and Wildlife]		soon as practicable' basis. This group would be expected to be available within 24-48 hours of call-out. These personnel are available through Cooper Energy's membership with AMOSC upon request from the Lead Agency. AMOSC Service Level Statement confirms: AMOSC Core Group activation – within 1 hour of initial activation.
	AMOSC developed relationship with: • blue Planet Marine (Capacity 10-20 OWR responders) • Massey University (Capacity 4-6 OWR responders) • international Bird Rescue (Capacity 4 OWR responders).	AMOSC	AMOSC deployment and arrival at site expected on an 'as soon as practicable' basis following formal request from the Lead Agency. These resources are not expected to be required but can be accessed in a spill event.
	National Plan: • additional response personnel, including management and operational staff.	AMSA	Access via AMSA NatPlan. NRT Resources are not expected to be required.
OWR Facility establishment and management	1 x Facilities Establishment Group (Dwyertech)	AMOSC Call-off Contract	Current call-off contract has service available within 24 hours of call-out.
Oiled Wildlife Response Kits	1 x OWR Kit (Geelong) 1 x OWR Kit (Fremantle)	AMOSC	Kits can process 50 units per day and Geelong kit available at site within 24 hours of call-out.
	1 x OWR Kit (Bairnsdale) 1 x OWR Kit (Colac) 1 x OWR Kit (Port Phillip) 1 x OWR Kit (Warrnambool) 1 x State-wide Trailer	DEECA	Each kit can process approximately 50 units. To be provided by DEECA.
Oiled Wildlife Response Containers	1 x Container (Geelong) 1 x Container (Fremantle)	AMOSC	Each container can process approximately 100 units per day. Geelong container available onsite within 24 hours of call-out.
	1 x Container (Dampier) 1 x Container (Darwin) 1 x Container (Townsville)	AMSA	Available through NatPlan. Containers process 100 units per day. Equipment is not expected to be required. Deployment of such resources would be expected to take 48-72 hours (road travel) from time of request.
	1 x Container (Sydney)	NSW Maritime	Available through NatPlan request via AMSA. Container can process 100 units per day. Equipment is not expected to be required. Deployment of such resources would be expected to take 48-72 hours (road travel) from time of request.
Vessel Support	1 x Vessel/Master	Undersea Marine Supply-time Agreement with Cooper Energy	Cooper Energy maintains an agreement with Undersea Marine (formerly COMCHART Marine) to provide vessel surveillance activities and can be supplied in 24 hours from call-out.

Resource	Resource Requirement	Resource Availability	Comments
	Vessels of Opportunity	Cooper Energy Vessel Listing	Cooper Energy maintains a list of vessels suitable for surveillance.
Waste Management Support Services	Waste Management Contractor	Cleanaway	Cooper Energy waste contracts to support waste disposal. Availability on-site within 12 hours of call-out.

10.5 Environmental Risk Assessment

An assessment of possible environmental impact and risk associated with oiled wildlife response has been undertaken as part of the EPs which relate to these activities.

10.6 Environmental Performance Outcomes (Oiled Wildlife Management)

Table 10-3 provides the performance outcomes, standards, and measurement criteria for oiled wildlife management. The Cooper Energy Operations Officer (or delegate) will ensure the control measures identified below are implemented.

Table 10-3: Oiled Wildlife Response – Performance Outcomes and Standards

Environmental Performance Outcome	Controls	Environmental Performance standard	Responsible person	Measurement Criteria
Cooper Energy maintains capability to support oiled wildlife management in a level 2/3 spill event.	C34 Service Agreements Oiled Wildlife Response	Cooper Energy maintains the following agreements to maintain OWR response capabilities: • AMOSC membership (equipment, personnel) • waste management contract • vessel of Opportunity listing • vessel surveillance agreement.	Executive Leadership Team Member	Contracts/memberships verify currency of membership.
Cooper Energy provides resources to support oiled wildlife response strategies as directed by State CA.	C35 Notification to State CA or Oiled Wildlife	Relevant state CA is notified as soon as possible after the sighting of oiled wildlife has occurred or if it is considered wildlife likely to be impacted.	Cooper Energy IC	Incident management records verify that verbal and/or written notification was provided to relevant State agency as soon as possible after the sighting was noted.
	C36 Oiled Wildlife Response Kits	AMOSC OWR kits are deployed to site within timeframes as directed by State Agency.	Cooper Energy IC	Incident records verify oiled wildlife response kits are deployed to site as directed by State Agency.
	C37 Oiled Wildlife Resource Resourcing	Cooper Energy meets State Agency resourcing needs throughout the response, meeting IAP performance outcomes.	Cooper Energy IC	Incident log verifies requested Cooper Energy resources met required IAP outcomes for oiled wildlife response.
Wildlife is only approached or handled by State Agency trained oiled wildlife responders	C38 Oiled Wildlife Response Induction	Cooper Energy personnel are inducted into wildlife interaction restrictions.	Cooper Energy IC State Government IC	Induction records. Incident records verify no interaction by Cooper Energy personnel and wildlife without

Environmental Performance Outcome	Controls	Environmental Performance standard	Responsible person	Measurement Criteria
unless formal direction is received from the State Government IMT.				formal direction and induction by the State Government IMT.
Impacts to native vegetation and fauna are prevented.	C30 Site survey for critical habitat	Surveys are undertaken to identify, mark out and protect nesting and critical habitat. Existing tracks and paths are used where possible to minimise disturbance footprint.	IC	Incident records verify surveys have occurred and controls implemented.
Impacts to cultural heritage and social values are prevented	C28 Consultation with Traditional owners	In consultation with State CA, engage with Traditional Owners to facilitate site surveys and tagging out and protection of identified areas or importance.	IC	Incident records verify consultation has occurred and controls implemented.
Impacts to native vegetation and fauna are prevented.	C30 Site survey for critical habitat	Surveys are undertaken to identify, mark out and protect nesting and critical habitat**.** Existing tracks and paths are used where possible to minimise disturbance footprint.	Cooper Energy Incident Controller	Incident records verify surveys have occurred and controls implemented.
	C31 Trained Fauna Handlers	Only trained and accredited teams deployed by the Lead Agency for oiled wildlife will approach and handle fauna.	Cooper Energy Incident Controller (as directed by the Lead Agency)	Shoreline induction reinforces this constraint. Induction records.

11 Decontamination and Waste Management

11.1 Waste types and volumes from a Spill Event

Waste types generated through spill response activities may include sand with oil residue, oily water, wash-waters from oiled wildlife clean-up and possible oiled carcase disposal (noting State agency will lead this aspect). It is noted that MDO and light crude oil residues reaching shorelines will still be relatively mobile residues and will penetrate shoreline sediments due to the low viscosity of the oil and will not be as visually obvious as other hydrocarbons (e.g. heavy fuel or crude oils).

Credible spill scenarios and associated hydrocarbon release volumes are described in Table 1-2. By taking the worst-case liquids volume released for each scenario, and the peak volume ashore from the stoachastic modelling, respective maximum waste volumes have been estimated (Table 11-1).

Table 11-1: Estimated Oil Waste Volumes

Asset	Worst Case Spill Scenario	Peak Hydrocarbon Shoreline Volume	Waste Type	Waste Volume**
Gippsland Basin – Sole / PB	Vessel Release	500 m^3*	Oily water Sand with oil residue	5,000 m^3
Gippsland Basin – Sole / PB	Subsea release	5 m^3*	Oily water Sand with oil residue	50 m^3
Otway Basin - CHN	Vessel release	250 m^3*	Oily water Sand with oil residue	2,500 m^3
Otway Basin - CHN	Pipeline release	50 m^3*	Oily water Sand with oil residue	500 m^3
Otway Basin – Wells (inc. exploration)	Subsea release	406.3 m^3	Oily water Sand with oil residue	4,063 m^3
General	Oiled Wildlife Waste	-	Wastewater	1 m^3 per unit (1 bird = 1 unit)
		-	Personal protective equipment (PPE)	5 kg per unit per day
	Decontamination stations	-	Wash-water	~1 m^3/d
		-	PPE	

**Assumes vessel or subsea release is very close to shore and weather pushes 100% spilled hydrocarbons ashore. It does not account for weathering. Considered to be conservative.*

***Assumes a 10-fold increase in volume of stranded oil due to additional volume of oily water and sand.*

11.2 Waste Management

11.2.1 Decontamination

In the event that shoreline clean-up is activated, decontamination stations must be placed at control points to prevent the spread of oil residues. Hot and cold zones must be clearly identified at the decontamination station and all response personnel should be briefed on the decontamination procedures

before entering the Hot Zone. The decontamination zone should be constantly attended and kept as neat as organised as possible.

Suppliers of decontamination kits are identified in Table 10-2.

11.2.2 Regulatory Requirements/Characterisation

Waste generated as part of shoreline clean-up activities will be handled by Cooper Energy's Waste Management Contractor who will be activated in a level 2/3 event to collect and manage waste generated.

The waste management contractor must ensure:

- suitable receptacles are provided for waste materials into ensure its correct segregation into appropriate regulatory classifications
- wastes are manifested to ensure they are sent to appropriately licensed treatment or disposal facilities
- transportation via correctly permitted vehicles to those locations in accordance with Victorian EPA requirements.

All waste manifests, to ensure recovered oil residues are tracked, must be sent by the Waste Contractor to the Logistics Officer as soon as possible.

11.2.3 Interim Storage & Segregation Requirements and Resources

All requirements for interim storage arrangements must be discussed with Cooper Energy's waste management contractor and a site waste management plan developed in consultation with the EPA, State CA and the appropriate land manager.

The site waste management plan must ensure that all interim storage and handling arrangements are fully bunded, isolated from the public and site activities supervised. All interim storages must have suitable spill kits available to limit spill residues.

Waste storage resources, in addition to Cooper Energy's waste management contractor resources, can be found on the AMSA, AMOSC and relevant State government websites.

11.3 Environmental Risk Assessment

An assessment of possible environmental impact and risk associated with waste management has been undertaken within the shoreline assessment and clean-up section of the respective EPs.

11.4 Environmental Performance Outcomes (Oiled Wildlife Management)

The performance outcomes, standards, and measurement criteria associated with waste management have been addressed in Section 8 (Protection and Deflection) and Section 9 (Shoreline Assessment and Clean-up).

12 Scientific Monitoring

The Offshore Victoria OSMP (VIC-ER-EMP-0002) provides a comprehensive framework for the monitoring programs that may be implemented in the event of a level 2/3 hydrocarbon spill.

12.1 Consultation to Support Operational and Scientific Monitoring

In the event of a level 2/3 spill, Cooper Energy will consult with Commonwealth and State authorities for all areas potentially exposed to hydrocarbons, including Australian Marine Parks to ensure that scientific monitoring is undertaken to the satisfaction of the Commonwealth and State. The State CA will coordinate the whole of State Government advice on the focus, scope and duration of the scientific program.

Cooper Energy will notify these relevant authorities on a level 2/3 spill event and provide operational data to these authorities relevant to the spill level. Cooper Energy will consult with these authorities at the commencement of a level 2/3 spill on any proposed baseline or scientific studies and control sites to allow for feedback and OSMP study implementation plan modification[4] to fulfil all State requirements (e.g. on-the-day sampling design, modified scope).

Operational monitoring results will continue to be provided throughout the response to allow for continued feedback and modification of baseline or scientific requirements. Other critical liaison points will be established between relevant authorities through the spill consultation process.

[4] *OSMP currently provides for study modules with expected scopes. These will be modified accordingly.*

13 Demobilisation

There are specific tasks that are required to be undertaken by various response personal on the demobilisation of the response. Some of these are detailed in the sections to follow.

13.1 Demobilisation Tasks for the IC

Upon conclusion of the spill activity, the following tasks will be undertaken by the IC (or delegate):

- advise all relevant contractors and Cooper Energy personnel
- advise all relevant government authorities
- prepare detailed reports on the response activities and outcomes and collate all documents for secure storage and/or submission to regulators
- undertake an inventory of consumables and prepare accounts
- arrange for the return and/or refurbishment of equipment
- investigate the cause of the incident and report to relevant authorities
- assess environmental monitoring requirements.

13.2 Demobilisation Tasks for the Operations Officer

Upon completion of the oil pollution response operation, the Operations Officer (or delegate) will:

- arrange recovery of all equipment and unused materials
- ensure that all equipment is cleaned, to the extent that available facilities allow
- ensure that all equipment is returned to the owner by the quickest possible means (having regard to costs)
- upon its return to the owner, equipment must be thoroughly serviced or replaced in accordance with equipment maintenance schedules prior to being stored.

With regards to marine operations, upon receipt of response termination, the IMT will ensure:

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

For shoreline response activities, the Operations Officer (or delegate) will ensure:

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

13.3 Response Debrief/Critique

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

- spill causes (if known)
- speed of response activation
- effectiveness of tactics and strategies
- equipment suitability
- health and safety issues (if any)
- communications
- integration of OPEP and procedures with other agencies
- lessons learned for implementation in future responses.

14 Revision History

Rev	Issue Date	Revision summary	Originator	Reviewer	Approver
0	24/02/17	Updated from AMOSC and DEDJTR EMD Comments	LC	JH	IM
1	15/03/2017	Issued to NOPSEMA and DEDJTR ERR for Acceptance	LC	DC, JH	IM
2	31/05/17	Revised for NOPSEMA RFFWI	LC	JH	IM
3	15/8/17	Revised for terminology changes	JM	RL	IM
4	13/4/2018	Internal review and revision to reflect update to CEMT and incorporate Sole infrastructure	JE	RL	IM
5	12/9/18	Revised to reflect updates to the CEMT and additional input to incorporate Sole infrastructure installation	PR	OGW	IM
6	27/12/18	Revised to incorporate BMG activities	PR	OGW	IM
7	20/01/19	Revision to include Otway Basin exploration drilling	PR	OGW	IM
7a	04/02/19	Issued to NOPSEMA for assessment	PR	OGW	IM
7b	30/04/2019	Updated to address Vic State review comments & minor revisions post-exercise.	PR	OGW	IM
7c	28/06/2019	Update to reflect new response contracts and additional Vic State comments.	OGW	OGW	IM
7d	03/04/2020	Update to Notification contact details and AMOSC activation DoA.	JH	JJM	IM
7e	30/08/2021	Annual review and update; inclusion of relevant Vic State Gov Review comments for BMG P&A scope.	JJM	JH	MJ
8 (7f)	18/07/2022	Updated figures, references, SCERP details, reconciled facility spill scenarios, added appendix 'systems, forms, templates, tools'. Note Rev 8 and Ref 7f were same version	Xodus Group	JJM	MJ
9	31/08/2023	Update includes removal Otway Basin Phase III drilling and reconcile associated source control Performance Standards. Update of Government Contacts for reporting purposes.	Xodus Group	JJM	DB
9a	04/01/2024	Draft for internal review. Update includes removal of BMG activities, revision of response strategies, priority protection areas and figures	AES	JM	
10	24/01/2024	Minor updates and re-submission with Operations EP.	AES	JM	
11	30/08/2024	Revised to include Otway Basin exploration drilling.	Xodus Group	JM	DB

15 Definitions & Acronyms

Acronym	Definition
ADIOS	Automated Data Inquiry for Oil Spills
AGL	Above Ground Level
ALARP	As low as reasonably practicable
AMOSC	Australian Marine Oil Spill Centre
AMOSPlan	Australian Marine Oil Spill Plan
AMSA	Australian Maritime Safety Authority
API	American Petroleum Institute
APPEA	Australian Petroleum Production & Exploration Association (now AEP)
ASAP	As soon as possible
ASX	Australian Securities Exchange
bbl	Barrels
BIA	Biologically Important Areas
BOM	Bureau of Meteorology
CA	Control Agency
CHN	Casino-Henry-Netherby
Cooper Energy	Cooper Energy Limited and its subsidiaries
CMP	Crisis Management Plan
CMT	Crisis Management Team
cP	Centipoise
DEECA	Department of Energy, Environment and Climate Action (Victoria)
DELWP	Department of Environment, Land Water and Planning (Victoria)
DEW	Department for Environment and Water (South Australia)
DIT	Department for Infrastructure and Transport (South Australia)
DoT	Department of Transport (Victoria) (now DTP)
DPI	Department of Primary Industries (New South Wales)
DPIPWE	Department of Primary Industries, Parks, Water and Environment (Tasmania)
DTP	Department of Transport and Planning (Victoria)
EHU	Electro-hydraulic umbilical
EP	Environment Plan
EPA	Environment Protection Authority

Acronym	Definition
EPBC	Environment Protection and Biodiversity Conservation
ERP	Emergency Response Plan
ERR	Earth Resource Regulation
ERT	Emergency Response Team
ESD	Emergency Shutdown
ESI	Environmental Sensitivity Index
FOB	Foreword Operating Base
GOR	Gas Oil Ratio
HSE	Health Safety & Environment
IAP	Incident Action Plan
IC	Incident Controller
IMO	International Maritime Organization
IMP	Incident Management Plan
IMT	Incident Management Team
ITOPF	Formerly known as International Tanker Owners Pollution Federation
IUCN	International Union for Conservation of Nature
IWCF	International Well Control Forum
JHA	Job Hazard Analysis
JSCC	Joint Strategic Coordination Committee
JV	Joint Venture
Km	Kilometre
KSAT	Kongsberg Satellite
LoC	Loss of Containment
LOWC	Loss of well control
m^3	Cubic metres
MEG	Mono-ethylene glycol
MDO	Marine Diesel Oil
mm	Millimetre
MMscf	Million Standard Cubic Feet
MMscfd	Million Standard Cubic Feet per Day
MoC	Management of Change
MODU	Mobile Offshore Drilling Unit

Acronym	Definition
MoU	Memorandum of Understanding
N/A	Not Applicable
NatPlan	National Plan for Maritime Environmental Emergencies
ND	Nominal Diameter
NEBA	Net Environmental Benefit Assessment
NES	National environmental significance
Nm	Nautical miles
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Authority
NP	National Park
NRE	National Resources and Environmental (Tasmania) (formerly DPIPWE)
NRT	National Response Team
NSR	Non search and rescue
NSW	New South Wales
OPEP	Oil Pollution Emergency Plan
OPGGSR	Offshore Petroleum and Greenhouse Gas Storage Regulations
OPGGS(E)R	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations
OSMP	Operational and Scientific Monitoring Plan
OSRA	Oil Spill Response Atlas
OSTM	Oil Spill Trajectory Modelling
OWR	Oiled Wildlife Response
PB	Patricia Baleen
POLREP	Marine Pollution Report
PPE	Personal protective equipment
RFFWI	Request For Further Written Information
ROV	Remotely Operated Vehicle
RPS	RPS Environmental Consultancy
RTM	Response time model
SCAT	Shoreline Clean-up Assessment Technique
SCERP	Source Control Emergency Response plan
SCME	State Controller Maritime Emergencies
SCT	Source Control Team

Acronym	Definition
SEC	Site Emergency Controller
SIMOPS	Simultaneous Operations
SITREP	Situation Report
SMPEP	Shipboard Marine Pollution Emergency Plan
Tas	Tasmania
TasPlan	Tasmanian Marine Oil Spill Plan
TRP	Tactical Response Plan
Vic	Victoria
VMRA	Victorian Marine Pollution Risk Assessment
VSCP	Victoria Source Control Plan
WA	Western Australia
WHAM	Wildlife Health and Marine division (Tasmania)
WOMP	Well Operations Management Plan

16 References

Document code	Title
Internal Documents	
CMS-PB-STD-0001	MS05 – Management Standard Five – External Affairs and Investor Relations
CMS-TS-STD-0001	MS08 – Management Standard Eight – Technical Management
CMS-IM-PCD-0002	Technical Information Management Procedure
CMS-HS-STD-0001	MS09 – Management Standard Nine – Health, Safety and Environment Management
CMS-ER-STD-0001	MS10 – Management Standard Ten - Incident and Crisis Management
CMS-ER-PRO-0002	Incident and Crisis Management Protocol
COE-ER-ERP-0001	Cooper Energy Incident Management Plan
COE-ER-ERP-0003	Cooper Energy Crisis Management Plan
VIC-DC-ERP-0001	Source Control Emergency Response Plan Offshore Victoria (and asset specific sub-plans)
VIC-ER-EMP-0002	Offshore Victoria Operational & Scientific Monitoring Plan
CHN-EN-EMP-0001	Otway Operations (Casino Henry Netherby) Environment Plan
CHN-EN-EMP-HOLD	Athena Supply Project Environment Plan (exploration drilling)
VIC-EN-EMP-0002	Gippsland Offshore Operations Environment Plan
COE-EN-EMP-0001	Description of the Environment
CHN-HS-SMP-0001	Casino Henry Netherby Pipeline Safety Case
SOL-HS-SMP-0007	Sole Pipeline Safety Case
PBN-HS-SMP-0001	Patricia Baleen Pipeline Safety Case
CHN-DC-WMP-0001	Casino Henry Netherby Well Operations Management Plan
SOL-DC-WMP-0001	Sole Well Operations Management Plan
PBN-DC-WMP-0001	Patricia Baleen Well Operations Management Plan
Joint Industry / AMOSC Tactical Response Plans: Tactical Response Plans	
Modelling Reports – all offshore facilities: Modelling	
Oil Profiles – all offshore facilities: Oil Profiles - ADIOS	
External Documents	
Plans	
AMOSPlan **(2021):** https://amosc.com.au/amosplan/	
AMSA NATPLAN **(2020)**: https://www.amsa.gov.au/marine-environment/national-plan-maritime-environmental-emergencies	
New South Wales Marine Estate Threat and Risk Assessment Report Final Report **(2017)** : **https://www.marine.nsw.gov.au/marine-estate-programs/threat-and-risk-assessment**	
Victorian Joint Industry and State Oil Pollution Responses Guidance Notes **(2023)**	
Victorian Maritime Emergencies (non-search and rescue) Plan **(2021)**: https://www.emv.vic.gov.au/responsibilities/semp-sub-plans/semp-maritime-emergencies-non-search-and-rescue-sub-plan	
Victorian Marine Pollution Risk Assessment (VMR) (DoT, 2011)	

Document code	Title
Department of Biodiversity, Conservation and Attractions. Department of Transport. **(2022)**. WA Oiled Wildlife Response Plan for Maritime Environmental Emergencies. Revision 4. https://www.dbca.wa.gov.au/wildlife-and-ecosystems/marine/marine-wildlife-response-oiled-wildlife-response	
Tasmanian Marine Oil and Chemical Spill Contingency Plan **(2022)**: **https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/cooperative-arrangements/marine-oil-and-chemical-spills/tasmanian-marine-oil-spill-contingency-plan-(tasplan)**	
Tasmanian Oiled Wildlife Response Plan **(2006)**: https://epa.tas.gov.au/about-the-epa/policy-legislation-cooperative-arrangements/cooperative-arrangements/marine-oil-and-chemical-spills/tasmanian-marine-oil-spill-contingency-plan-(tasplan)	
South Australian Marine Spill Contingency Action Plan (SAMSCAP) **(2022)**. https://www.sa.gov.au/__data/assets/pdf_file/0005/886271/South-Australian-Marine-Spill-Contingency-Action-Plan-SAMSCAP-November-2022.pdf	

Appendix 1 Systems, Forms, Templates and Tools

Systems / Forms / Templates
Cooper Energy IMT Response System Includes: Incident Status Boards, External Reporting Forms, Planning Templates

Tools
Weather and Tides http://www.bom.gov.au/ / https://www.windy.com
Trajectory/velocity calculator, Oil Volume estimator, marine travel calculator: Spill Response Tools
Oil Spill Tracking Buoy online tracking access: Oil Spill Tracking Buoy
Victoria CoastKit – A tool developed by DELWP (now DEECA) to provide an online data repository for the community to explore and use Victoria's marine and coastal information: https://mapshare.vic.gov.au/coastkit/
Victoria EstuaryWatch. A citizen science program that supports the monitoring and recording of estuary health: http://www.estuarywatch.org.au/
Tasmania LISTmap. Hosted by the Tasmanian government. Listmap is publicly accessible, searchable geospatial tool providing access to a wide range of information including oil spill sensitivity layers, shoreline types, species presence and seasonal sensitivity: https://maps.thelist.tas.gov.au/listmap/app/list/map

Systems / Forms / Templates
Oil Spill Response Atlas (OSRA). GIS based system which compiles relevant Australian geographic information for oil spill response management: Oil Spill Response Atlas (OSRA).pdf
Response Planning Map Layers: Oil Spill Response Map Layers Login to Perth IMT or Adelaide IMT to use the Response Map

Appendix 2 Net Environmental Benefit Assessment (NEBA) Template

The NEBA template is available on Cooper Energy IMT Response System

Purpose

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

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

This process should be conducted by the IMT Planning Officer (or delegate) in consultation with appropriately qualified experts from AMOSC, AMSA, the relevant State agency and other agencies (as required). Resources required include the respective asset Environment Plans, this OPEP, OSRA maps, OSTM/vectors for the spill event and marine charts. Local knowledge of the resources at stake is highly desirable to inform the assessment.

Instructions

1. Identify which of the sensitive resources occur in the affected area and list details. Resources are grouped into 3 categories (water surface, shoreline, water column) and may have biological/ecological (emphasis), economic or social/cultural significance. Use OSTM in conjunction with an OSRA or Maritime Incident Geospatial Support map of the projected impact area.
2. Rank sensitivity (Low/Medium/High) using the Resource Oil Sensitivity Matrix (below) to give a qualitative measure of likely impact if no response actions are taken (Natural Recovery i.e. Monitor and Evaluate). Sensitivity can be assessed by selecting a potential impact rank (Slight/Minor/Major/Severe) and recovery time (>10 years/5-10 years/2-5 years/<1 year). For particular shoreline types, use the Environmental Sensitivity Index (ESI) rankings in (below) (shoreline types) as a guide. Record this information for each resource in the NEBA.
3. Assign priority protection numbers (1-n) for each resource based upon sensitivity rankings assuming no response actions are taken (Natural Recovery i.e., Monitor and Evaluate). Highest priority resources should be assigned '1' – n is lowest priority. Resources may be ranked equally. Record this information for each resource in Table A4-1.
4. Assess whether the sensitivity (impact) ranking would increase (□), decrease (□) or remain the same (–) for each of the 3 remaining response strategies (Dispersant Application, Offshore Containment and Recovery, Protection and Deflection & Shoreline Clean-up). The Oiled Wildlife Response Strategy is adopted for all level 2/3 spills.
5. Select which overall response strategy (Natural Recovery i.e., Monitor and Evaluate, Dispersant Application, Offshore Containment and Recovery, Protection and Deflection and Shoreline Clean-up) would reduce or increase the sensitivity (impact) ranking for the highest priority shorelines/resources for protection. I.e., what response option provides net environmental benefit.

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

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

Resource sensitivity assessment matrix and shoreline type sensitivity ranks

Net Environmental Benefit Analysis - Environmental Effects of Response Options Risk Analysis Matrix

Receptor Type	Sensitivity (adjust as required)	Protection Priority Ranking (Insert Locations)			Expected impact under each scenario (adjust as required)						
		Priority site 1	Priority site 2	Priority site 3	Source control	Monitor and Evaluate	Chemical Dispersant	Offshore Containment and Recovery	Protect & Deflect	Shoreline Assessment/ Clean-up	Oiled Wildlife
Significant marine ecology											
Cetaceans (whales, dolphins)	S1				↑	-	NA	↑	NA	NA	NA
Seabirds (feeding, roosting, nesting)	S1				↑	-	NA	↑	NA	NA	↑
Shorebirds (feeding, roosting, nesting)	S1				↑	-	NA	↑	NA	NA	↑
Pinnipeds (seals, sea lions)	S2				↑	-	NA	↑	NA	NA	NA
Turtles	S2				↑	-	NA	↑	NA	NA	↑
Fish and Sharks (including spawning/nursery areas)	S2				↑	-	NA	↑	NA	NA	NA
Marine Invertebrates (sponges, molluscs, crustaceans, etc.)	S3				↑	-	NA	↑	NA	NA	NA
Abalone	S3				↑	-	NA	↑	NA	NA	NA
Significant coastal habitats											
Saltmarshes	S1				↑	-	NA	↑	↑	↓	NA
Mangroves	S1				↑	-	NA	↑	↑	↓	NA
Mudflats	S1				↑	-	NA	↑	↑	↓	NA
Seagrass	S1				↑	-	NA	↑	↑	↓	NA
Estuaries / wetlands	S1				↑	-	NA	↑	↑	↓	NA
Kelp habitats (inter-tidal)	S2				↑	-	NA	↑	NA	NA	NA
Littoral Rainforest / Coastal Vine Thickets	S3				↑	-	NA	↑	↑	↓	NA
Intertidal rocky flat/headland	S3				↑	-	NA	↑	NA	↑	NA

Receptor Type	Sensitivity (adjust as required)	Protection Priority Ranking (Insert Locations)			Expected impact under each scenario (adjust as required)						
		Priority site 1	Priority site 2	Priority site 3	Source control	Monitor and Evaluate	Chemical Dispersant	Offshore Containment and Recovery	Protect & Deflect	Shoreline Assessment/ Clean-up	Oiled Wildlife
Sub-tidal reef	S3				↑	-	NA	↑	NA	NA	NA
Sand beaches	S3				↑	-	NA	↑	NA	↑	NA
Significant coastal ecology											
Pinniped haul-out sites	S2				↑	-	NA	↑	NA	NA	↑
Penguin colonies	S2				↑	-	NA	↑	NA	NA	↑
Protected area - Marine Parks or Sanctuaries	S2				↑	-	NA	↑	NA	NA	↑
Significant Socio-economic											
Tourism	S2				↑	-	NA	↑	↑	↑	NA
Commercial Fisheries / Aquaculture	S2				↑	-	NA	↑	NA	↑	NA
Cultural Heritage sites	S2				↑	-	NA	↑	↑	↑	NA
Amenity beaches	S3				↑	-	NA	↑	↑	↑	NA
Ports, Harbours, Yacht Clubs, Marinas	S3				↑	-	NA	↑	↑	↑	NA
Shipwrecks (submerged)	S3				↑	-	NA	↑	NA	NA	NA
Recreational fishing / diving	S3				↑	-	NA	↑	NA	↓	NA
Approvals											
Approved By:			Signature:				Company / Agency:				
Position in IMT:			Contact Number:				Email:				

Appendix 3 Cooper Energy Oil Spill Team Duty Cards

Cooper Energy Oil Spill IMT Lead Roles:

- IC
- Operations Officer
- Planning Officer
- Finance Officer
- Logistics Officer

COE INCIDENT CONTROLLER (DUTY CARD 1)

ROLE [Incident Controller]
The Cooper Energy Incident Controller has overall responsibility for the management of the Cooper Energy's response and integration with government response agencies.
RESPONSIBILITIES
☐ Activate and lead the overall management of the IMT. ☐ Notify and keep the CMT/ IMT Liaison Coordinator informed as appropriate. ☐ Determine strategic objectives & general direction for managing the situation. ☐ Establish the immediate priorities. ☐ Ensure that adequate safety measures are in place. ☐ Ensure that the needs of any people affected by the emergency are handled appropriately. ☐ Establish an appropriate organization and coordinate support as required. ☐ Maintain a personal log. ☐ Direct provision of appropriate responses to affected contractors. ☐ Approve and authorise the implementation of an Incident Action Plan ☐ Terminate response activities when appropriate
SPECIFIC TASKS
Initial Actions ☐ Activate and lead the overall management of the IMT. ☐ Obtain briefing on emergency from the Site Emergency Controller (SEC) or ERT contact and review initial assessment. ☐ Use the emergency Information Capture Form ☐ Activate the necessary members of the IMT. ☐ Proceed to the IMT Room ☐ Ensure Room is fully set-up before response commences. ☐ Obtain status report. ☐ Communicate with CMT/ IMT Liaison Coordinator as appropriate. ☐ Advise CMT/ IMT Liaison Coordinator of any requirement for immediate support. ☐ Arrange schedule for ongoing contact

ROLE [Incident Controller]
Determine strategic objectives & general direction for managing the situation ☐ Establish the immediate priorities: ☐ Define IMT objectives. ☐ If necessary, confer with operator or government agencies to agree on common objectives and priorities. ☐ Chair initial IMT briefing. ☐ Communicate priorities to the team. ☐ Confirm ongoing means of communications with SEC has been established to Operations Officer ☐ Confirm which regulatory agencies need to be notified. ☐ Confirm with Planning Officer that all appropriate log-keeping, issues and actions, and status boards are maintained.
Ongoing Actions ☐ Refer to and follow the IMT Process ☐ Hold regular IMT updates. ☐ Time out, phones switched to time out mode. ☐ Every 30 minutes initially (as a guide) ☐ Monitor effectiveness of response and review issues & actions and priorities. ☐ With Planning Officer, establish short-term/long-term recovery goals, milestones, and resource requirements. ☐ Brief CMT/IMT Liaison as required. ☐ Delegate Responsibilities ☐ Allow yourself to focus on setting strategic objectives for next operational period. ☐ Determine duration and structure of response operations. ☐ Decide duration of current operational period (start thinking of when to stand down or next day operations) ☐ Identify additional personnel needs to maintain 24-hour support. **Stand Down** ☐ Communicate end of IMT response to all relevant internal and external parties ☐ Provide copies of all emergency related documents and logs to the Log Keeper ☐ Stand down those people not required in managing ongoing recovery process. ☐ Hold debrief of IMT, specialist advisors, support teams and receive feedback. ☐ Review any capability gaps and opportunities for improvement in the response. ☐ Review and approve the emergency report. ☐ Commission post-emergency investigation ☐ Ensure accepted recommendations have been incorporated into the IMP

COE OPERATIONS OFFICER (DUTY CARD 2)

ROLE [Operations Officer]
Reports to IC and is responsible for monitoring and supervising operational response operations in the field. Implements the operational plans to achieve response objectives and protect people, the environment and property
RESPONSIBILITIES
Maintain two-way communication with scene. Establish facts/needs. Coordinate immediate response. Identify key issues. Provide/resource technical support for IC
SPECIFIC TASKS

Initial Actions

- ☐ Identify the SEC and where located - obtain all available information on the situation.
- ☐ Agree call schedule with the SEC or ERT
- ☐ Use the emergency Status Board/ Form
- ☐ Assess emergency, including emergency potential.
- ☐ Start a personal log.

Ongoing Actions

- ☐ Propose and agree immediate priorities with the IC.
- ☐ Update Planning Officer on situation for development of the Action Plan
- ☐ Work with ERT to identify logistical support requirements.
- ☐ Identify issues and actions required for the next period - mark and track on Issues board.
- ☐ Source and provide technical information and support required by the response teams.
- ☐ Develop strategy (i.e., what we are attempting to achieve)
- ☐ Identify tactics/breaking down tactics into manageable tasks (i.e., how we are going to implement strategy)
- ☐ Confer with response contractors / consultants for equipment and techniques.
- ☐ Allocate tactical resources based on strategy requirements.
- ☐ Provide updates to the situation board to reflect current operations in the field.
- ☐ Resource additional technical support as required.

Stand Down

- ☐ Attend the IMT debrief.
- ☐ Provide copies of all emergency related documents and logs to the Log Keeper
- ☐ Monitor the demobilization of response teams

COE PLANNING OFFICER (DUTY CARD 3)

ROLE [Planning Officer]
Reports to the IC and manages the IMT related planning functions and information capture for the response
RESPONSIBILITIES
Responsible for the collection, evaluation, dissemination, and use of emergency information Oversees the display of information on the status boards. Oversees environmental support for the response operations. Development of recovery planning options Collection and retention of emergency plans and documents Activates and manages the Log Keeper
SPECIFIC TASKS
Initial Actions ☐ Assist the IMT-Leader to maintain and use the Brainstorming/Planning Board/ Form ☐ Mobilize any additional resources or specialist advisors immediately required to commence recovery planning ☐ Ensure Log Keeper is in place and the IMT is maintaining an auditable trail. ☐ Provide immediate notifications to regulatory authorities as required under legislation or as per accepted regulatory documentation. ☐ Identify one or more Emergency Management Liaison Officers continue notifications and ongoing consultation in accordance with Section 2.4 (Notification Requirements) of the OPEP. ☐ Consider activating additional Environmental and Community Consultation Support: ☐ Setup and maintain a document retention process for all response documentation. ☐ Start a personal log. **Ongoing Actions** ☐ Drive and monitor the IM process. ☐ Prepare the Action Plan – compile data from display boards and use Situation, Mission, Execution, Administration and (Logistics), Command (and Communication) guide for format: ☐ Identify environmental issues and where necessary seek advice and support from environmental technical authorities/ environmental specialists. ☐ Establish time for next operational period (generally starting the next morning for 24-hour duration) ☐ Create strategic objectives for next operational period and submit to IMT-Leader for approval. ☐ Create meeting schedule and advise IMT-Leader on planning process issues. ☐ Develop plans for recovery operations to implement tomorrow, the next day, next week etc. ☐ Consolidate the Action Plan and assemble for final approval and signoff.
Stand Down ☐ Ensure team members and supports complete any outstanding log/record keeping. ☐ Ensure all log sheets are collected before the team leaves the room. (All notebooks to be copied and / or originals to be retained) ☐ Arrange for copies of all email traffic and emergency files to be collated and stored. ☐ Consider need to photograph Incident Control Centre and key display boards before it is tidied. ☐ Contribute to the development of the post emergency report.

COE FINANCE & ADMIN OFFICER (DUTY CARD 4)

ROLE [Finance & Admin Officer]
Reports to the IC and manages IMT related HR and Financial aspects of the response
RESPONSIBILITIES
- Coordinate all general administrative support requirements for the IMT and response activities overall. - Handle accounting services and financial record-keeping, track, and report on emergency costs - Manage HR issues and emergency contact notifications.
SPECIFIC TASKS
Initial Actions ☐ Determine if additional Finance & Admin support personnel are needed. Coordinate their activation and manage their activities. ☐ Activate additional telephone responders if required. ☐ Use the Medical Planning Board/ Form – to capture and display casualty management information. ☐ Start a personal log. **Ongoing Actions** ☐ Establish procedures for use in establishing financial controls. ☐ Establish & communicate pre-approved spending authorities for the IMT. ☐ Establish contact and coordinate finance-related activities with other agency finance personnel. ☐ Coordinate with the IMT-Leader and Sections to determine immediate financial needs. ☐ Provide the IMT-Leader with information on the financial implications of major and/or costly actions taken or being considered by IMT, contractor, government agency, etc. ☐ Coordinate with appropriate Company and contractor or government agency personnel to receive timely and accurate information on the costs that they incur. ☐ Ensure that insurers have been notified and provided with accurate facts concerning the emergency. ☐ Set up appropriate financial reviews and controls for all contracts, agreements and other legally binding documents used by the IMT during the response, as appropriate.
Stand Down ☐ During demobilization, ensure that any outstanding IMT related costs or other financial issues have been resolved, insurance requirements have been met and there is a system in place to receive and process any remaining claims. ☐ Prepare a final report accounting for all costs incurred during the response. ☐ Attend the IMT debrief. ☐ Provide copies of all emergency related documents and logs to the Planning Function

COE LOGISTICS OFFICER (DUTY CARD 5)

ROLE [Logistics Officer]

Reports to the IC and manages Logistics. Coordinates the provision, storage and transportation of supplies and resources required for the emergency response and recover

RESPONSIBILITIES

- Coordinate all logistic requirements for the IMT and response activities overall.
- Liaise with Finance to establish normal expenditure control and any necessary insurance controls.
- Manage logistic issues and emergency contact notifications.
- Negotiate with contractors, consultants, external enterprises, and agencies

SPECIFIC TASKS

Initial Actions

☐ Obtain a full briefing on the emergency, paying attention to marine and air logistics considerations in supporting the response or actions in place.
☐ Evaluate the logistics ramifications of the current response and any planned actions.
☐ Identify existing or potential international and macro logistics issues.
☐ Consult with other ESG members to calculate the levels and identify the sourcing of additional resources and services needed to support response operations.
☐ Start a personal log.

Ongoing Actions

☐ Provide logistics support to the affected site in accordance with tactical plans developed by the IMT.
☐ Assess the local availability of equipment and personnel suitable to support the response and recovery activities.
☐ Negotiate with contractors, consultants, external enterprises, and agencies for supply of personnel, equipment, and services.
☐ Coordinate reception, assembly, storage, and deployment in liaison with the IMT and Site Logistics Officer
☐ In conjunction with IMT Information Officer, ensure a logistics status board is maintained showing all support resources, aircraft and marine movements supporting the operation.
☐ Maintain an overview of weather conditions and their effect on aircraft and marine movements. Relay information as required.
☐ Ensure inventories are kept of all equipment, materials, services, and supplies purchased, rented or borrowed or obtained during the response operation.
☐ Liaise with Finance Officer to establish normal expenditure control and any necessary insurance controls which may be required.
☐ Document all emergency actions on log sheets pass to Information Officer

Stand Down

☐ During demobilisation, ensure that any outstanding IMT related costs or other financial issues have been resolved, insurance requirements have been met and there is a system in place to receive and process any remaining claims.
☐ Prepare a final report accounting for all costs incurred during the response.
☐ Attend the IMT debrief.
☐ Provide copies of all emergency related documents and logs to the Planning Function

Appendix 4 SCAT Execution

To undertake the assessment, the shoreline predicted to be contacted will be divided into segments within which the shoreline character is relatively homogenous in terms of physical features and sediment type. Methods adopted to describe State shoreline segments have been derived based on relevant State Agency processes; namely the Victorian Marine Pollution Risk Assessment (VMRA) (DoT, 2011) for Gippsland Basin and the NSW Marine Threat and Risk Assessment (TARA) (BMT WBM, 2017) for New South Wales coastline. There is no specific shoreline clean-up process for Tasmania, therefore any response would follow the process described in the Tasmanian Marine Oil Spill Contingency Plan.

Once the SCAT is onsite, the following tasks will be conducted:

1. Undertake a Job Hazard Analysis with the team to identify hazards and put controls in place where possible.
2. Conduct a segment overview or full site walk over to gain the overall perspective of the survey area and verify the pre-determined segment boundaries are correct.
3. Complete observations and measurements of the segment. The following shoreline characteristics should be documented during the baseline assessment:

- shoreline description including shoreline type (beach, cliff, reef, dune etc.), substrate (bedrock, boulder, pebble, gravel, sand etc.) and energy (high or low).
- biological character of the shoreline – flora and fauna inhabiting the shoreline.
- in addition, the following information about the site under assessment should be documented:
- site access (e.g., road or track access).
- site hazards and constraints (e.g., steep cliffs, slippery rocks).
- sensitive areas (e.g., bird nesting areas).
- features and landmarks (natural or man-made); and
- potential decontamination and waste storage areas.

4. Take photos and videos wherever possible.
5. Annotate or draw maps and beach profiles.
6. Fill in Shoreline Assessment Form.

The Shoreline Assessment form as contained in the OSMP Module OP4B – Coastal Shoreline Assessment (Gippsland) will be used to record the shoreline assessment results. The assessment will be communicated to the IMT and used to inform the NEBA to determine whether the implementation of shoreline clean-up activities will be of net benefit. The daily NEBA outcome will be used to inform the IAP.

Post Exposure Shoreline Assessment

In the event that oil reaches the shoreline, the SCAT will undertake a post exposure assessment. This includes recording the following description of the oiling:

- oil character (colour, viscosity, stickiness)
- percentage oil cover and position
- oil thickness and depth.

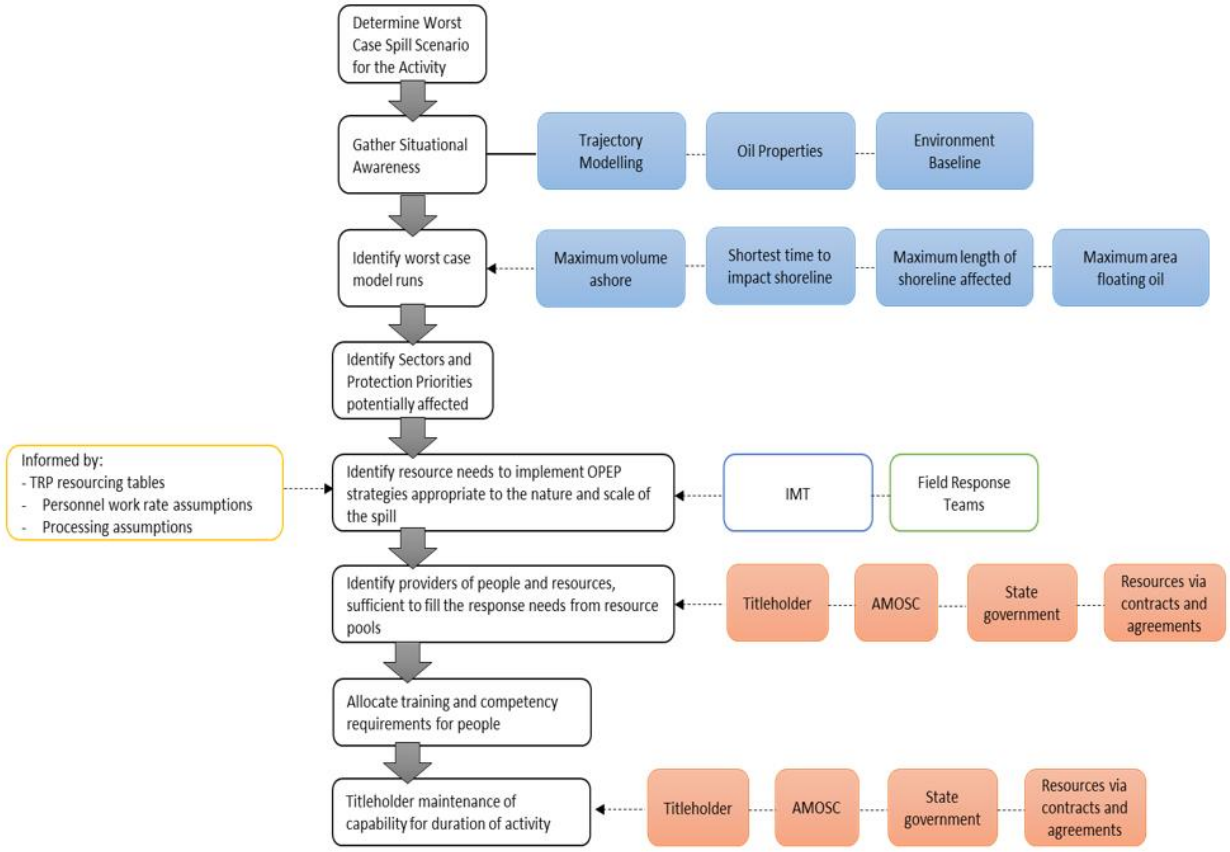
The SCAT must immediately notify the Cooper Energy Operations Officer of any observed, or at-risk oiled wildlife, to inform the potential Oiled Wildlife Response if required.

In the event a shoreline clean-up response is activated, the SCAT must be undertaken twice daily to document the effectiveness of the clean-up response measures implemented. This information will be provided to the Cooper Energy Operations Officer.

Appendix 5 Response Resources Needs Assessment

Cooper Energy's IMT structure is designed to be scalable to meet the particular requirements of any credible spill scenario associated with Cooper Energy's offshore Victorian assets and activities. Analysis of personnel requirements vs the resource pool accessible via agreement in place during the activity indicates a sufficient level of trained and competent people.

Figure below shows the process used by Cooper Energy to determine response needs. Against these needs, resource pools are assigned from Cooper Energy and response parties.



Response Resource Assessment Process