Australia Business Unit West

Barossa Project

CONTROLLED DOCUMENT

Title:

BAROSSA GAS EXPORT PIPELINE INSTALLATION OIL POLLUTION EMERGENCY PLAN (OPEP)

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ACRONYMS

Acronym	Definition
ABU	Australian Business Unit
ALARP	As Low as Reasonably Practicable
AMOSC	Australian Marine Oil Spill Centre
AMOSPlan	Australian Industry Cooperative Oil Spill Response Arrangements
AMSA	Australian Maritime Safety Authority
CIMP	Crisis and Incident Management Plan
CM&ER	Crisis Management and Emergency Response
CMT	Crisis Management Team
CSR	Client Site Representative
DENR	Department of Environment and Natural Resources
DoEE	Department of the Environment and Energy
DPIR	Department of Primary Industry and Resources
EMBA	Environment that May Be Affected
EP	Environment Plan
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
ERP	Emergency Response Procedure
ERT	Emergency Response Team
EUL	Environment Unit Lead
GEP	Gas Export Pipeline
GIMAT	Global Incident Management Assist Team
GIS	Geographic Information Systems
GPS	Global Positioning System
IAP	Incident Action Plan
IC	Incident Commander
ICS	Incident Command System
IMT	Incident Management Team
IMT IC	IMT Incident Commander
ITOPF	International Tanker Owners Pollution Federation
JSA	Job Safety Analysis
MDO	Marine Diesel Oil
NEBA	Net Environmental Benefit Analysis
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NT	Northern Territory
NT IC	NT Incident Controller
NTOWRP	NT Oiled Wildlife Plan
OMP	Operational Monitoring Plan

Acronym	Definition
OPEP	Oil Pollution Emergency Plan
OPGGS (E) Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environmental) Regulations
OPGGS Act	*Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth)
OSC	Operations Section Chief
OSCP	Oil Spill Contingency Plan
OSMP	Operational and Scientific Monitoring Program
OSRL	Oil Spill Response Limited
OWR	Oiled Wildlife Response
OWRP	Oiled Wildlife Response Plan
PLET	Pipeline End Termination
POLREP	Marine Pollution Report
PPE	Personal Protective Equipment
RCC	Rescue Coordination Centre
RHM	Regional Harbour Master
SITREP	Situation Report
SMP	Scientific Monitoring Plan
SOLAS	International Convention for the Safety of Life at Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
TMPC	Territory Marine Pollution Controller

1 QUICK REFERENCE INFORMATION

In the event of an emergency situation where human safety is at significant risk, tasks included in this OPEP may not be implemented, and the International Convention for the Safety of Life at Sea (SOLAS) 1974 may take precedence.

<table>
<tr><th>Parameter</th><th colspan="3">Information</th><th>Further Information</th></tr>
<tr><td>Petroleum Activity</td><td colspan="3">Barossa Gas Export Pipeline (GEP) – installation and commissioning phases only</td><td rowspan="2">N/A</td></tr>
<tr><td>Facilities / Vessels</td><td colspan="3">Pipelay vessel (classified as a facility when laying pipeline; classified as a vessel when not laying pipeline)
Support vessels</td></tr>
<tr><td>Pipeline</td><td colspan="3">Pipeline running from the pipeline end termination (PLET) in the Barossa development area (Easting MGA52: 638539; Northing MGA52: 8914135) along the west coast of Bathurst Island to the tie-in PLET location (Easting MGA52: 598777; Northing MGA52: 8670603)</td><td rowspan="2">Figure 3-1</td></tr>
<tr><td>Water Depth</td><td colspan="3">33 to 254 m</td></tr>
<tr><td>Permit / License References</td><td colspan="3">NT/RL5
National Parks Activity Licence: PA2018-00041-1
[HOLD – INSERT PIPELINE LICENCE ONCE GRANTED]</td><td>N/A</td></tr>
<tr><td>Spill Scenarios</td><td colspan="3">1. Marine Diesel Oil (MDO) released from a vessel collision.
2. MDO released from a bunkering incident.</td><td rowspan="4">Section 7.2</td></tr>
<tr><td rowspan="3">Hydrocarbon Type, International Tanker Owners Pollution Federation (ITOPF) Grouping, Worst Case Volume</td><td></td><td>Hydrocarbon type (ITOPF Group)</td><td>Worst case volume</td></tr>
<tr><td>Vessel collision</td><td>MDO (Group II)</td><td>700 m^3</td></tr>
<tr><td>Bunkering incident</td><td>MDO (Group II)</td><td>10 m^3</td></tr>
<tr><td>Hydrocarbon Properties</td><td colspan="3">MDO:
Density at 25 °C = 829 kg/m^3
Dynamic viscosity = 4 cP @ 25° C
API Gravity = 37.6°
Wax content = 1%
Pour point = -14 °C
Oil property classification = Persistent (medium)</td><td rowspan="2">Attachment A</td></tr>
<tr><td>Weathering Potential</td><td colspan="3">MDO is a mixture of volatile and persistent hydrocarbons with low viscosity. It will spread quickly and thin out to low thickness levels, thereby increasing the rate of evaporation. Up to 60% will generally evaporate over the first two days. Approximately 5% is considered “persistent hydrocarbons”, which are unlikely to evaporate and will decay over time.
Strong tendency to entrain into the upper water column (0–10 m) (and consequently reduce evaporative loss) in the presence of moderate winds (> 10 knots) and breaking waves. MDO re-surfaces when the conditions calm. It does not form mousse.</td></tr>
<tr><td>Protection Priorities</td><td colspan="3">The Tiwi Island shorelines contain a range of shoreline types that are vulnerable to pollution, including nesting beaches for flatback turtles, olive ridley turtles and crested terns, and cultural heritage sites.
The Oceanic Shoals Australian Marine Park contains significant habitats, species and ecological communities, including four key ecological features, two of which occur within the oil spill environment that may be affected (EMBA).</td><td>Section 7.3</td></tr>
</table>

2 FIRST STRIKE RESPONSE ACTIONS

Following a spill, the observers and their supervisors are required to follow first strike procedures, which may involve activating the Emergency Response Team (ERT) and Incident Management Team (IMT). **Table 2-1** outlines the first strike response actions that need to be followed in the event of an oil spill to the environment.

The level of activation of ConocoPhillips' ERT, IMT and CMT will be related to the tier classification of the oil spill (**Table 4-2**). The ABU Crisis and Incident Management Plan (CIMP) (ALL/HSE/ER/001) outlines ConocoPhillips' procedures for responding to all incidents, including oil spills. Initial actions for activating the IMT are repeated here, along with incident-specific actions to ensure a prompt response may be implemented.

Table 2-1: First Strike Response Actions

Responsibility	Actions
Observer	☐ Provide details of the incident to the Vessel Master
Vessel Master	☐ Monitor the safety of all personnel ☐ Take immediate actions to control the source of the spill, in accordance with the vessel-specific Shipboard Oil Pollution Emergency Plan (SOPEP) or Emergency Response Procedure (ERP) (if available) ☐ If source control is not possible, ensure vessel safety by clearing the immediate vicinity of the spill, if possible ☐ Contact the Australian Maritime Safety Authority (AMSA), as soon as practicable, to inform them of the incident, providing as much information as possible via SITREP/POLREP (Refer to **Table 6-1** for reporting requirements) ☐ Notify ConocoPhillips Client Site Representative (CSR) of the spill.
ConocoPhillips CSR on vessel	☐ Notify the IMT Operations Section Chief (OSC) of the incident and ensure source control measures are being implemented ☐ Aid the Vessel Master in preparing the SITREP/POLREP[1] and provide as much information[2] to the IMT OSC as soon as practicable, including: ☐ Name and details of vessel ☐ Location and coordinates ☐ Date and time the release occurred or was first reported ☐ How it was detected ☐ Names of any witnesses ☐ Hydrocarbon type (e.g. MDO), any Material Safety Data Sheets ☐ Vessel's Oil Record Book (contains information on volumes and contents in each tank) ☐ Cause of the spill (e.g. collision) ☐ Source of spill (e.g. fuel tank) ☐ Approximate volume of spill (better to overestimate) ☐ If the spill is controlled or continuous ☐ Weather, tide and current details ☐ Trajectory of the spill (what direction is the slick spreading) ☐ If any fauna has been observed nearby (e.g. whales, dolphins, seabirds) ☐ Provide updated SITREP/POLREPs as required ☐ Use personal Incident Log to record events

[1] This information will also be required when completing ConocoPhillips incident reports and reports to external agencies.

[2] Some details may be limited in the initial SITREP/POLREP. Aim to get the initial report submitted as soon as possible and follow up with more detail as it becomes available.

Responsibility	Actions
	☐ Take photos and send to the IMT Incident Commander (IC)/OSC, if possible
IMT OSC	<u>General Actions</u> ☐ Notify IC as soon as practicable that an incident has occurred and determine if IMT activation is required ☐ If mobilising IMT, contact Emergency Call Centre to conduct activation ☐ Notify IMT Environment Unit Lead (EUL) for them to undertake external notifications and reporting <u>Incident Specific Actions</u> ☐ Confirm incident report and capture key details relating to the incident (obtain SITREP/POLREP)
IC	<u>General Actions</u> ☐ Evaluate initial incident report ☐ Confirm category of the incident (tier) in consultation with OSC ☐ Activate IMT in consultation with OSC ☐ Notify the Crisis Manager of event and incident tier <u>Incident Specific Actions</u> ☐ Establish direct line of communication with AMSA and manage spill response actions as directed by AMSA ☐ Ensure external notification and reporting is undertaken in accordance with **Table 6-1.**
IMT Safety Officer	☐ Conduct hazard assessment and advise OSC of recommended safety actions
IMT EUL (or delegate)	☐ Determine the volume of oil spilt ☐ Undertake external notification and reporting in accordance with **Table 6-1.**

Note: The ConocoPhillips Emergency Contacts Directory (ALL/HSE/ER/008) contains the contact numbers for external personnel and facilities. The Emergency Contacts Directory is reviewed and updated every six months.

3 INTRODUCTION

3.1 Purpose

This Oil Pollution Emergency Plan (OPEP) outlines the emergency management arrangements and oil spill response options for activities associated with the GEP installation.

This OPEP addresses the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Environmental) Regulations 2009 (Cth) (OPGGS (E) Regulations) and forms a supporting document to the Barossa GEP Installation EP (BAA-100 0329).

3.2 Scope

This OPEP covers the response to oil spill incidents associated with Barossa GEP installation activities. This OPEP aids the IMT in planning and decision-making from when the IMT is first notified of the incident. Credible spills associated with Barossa GEP installation activities are listed in **Section 7.2**.

The location of the activity covered by this OPEP is shown in **Figure 3-1** and includes Commonwealth waters. While there are no activities for the Barossa GEP installation within NT waters, a spill within Commonwealth waters may enter NT waters.

3.3 Objectives

The objectives of this OPEP are as follows:

- To define the oil spill response arrangements and capabilities that are in place for the credible spill scenarios;
- To provide guidance to the IMT in relation to spill response selection and supporting the ERT during spill response implementation; and
- To provide procedures for identifying appropriate resources to support a marine hydrocarbon spill response.

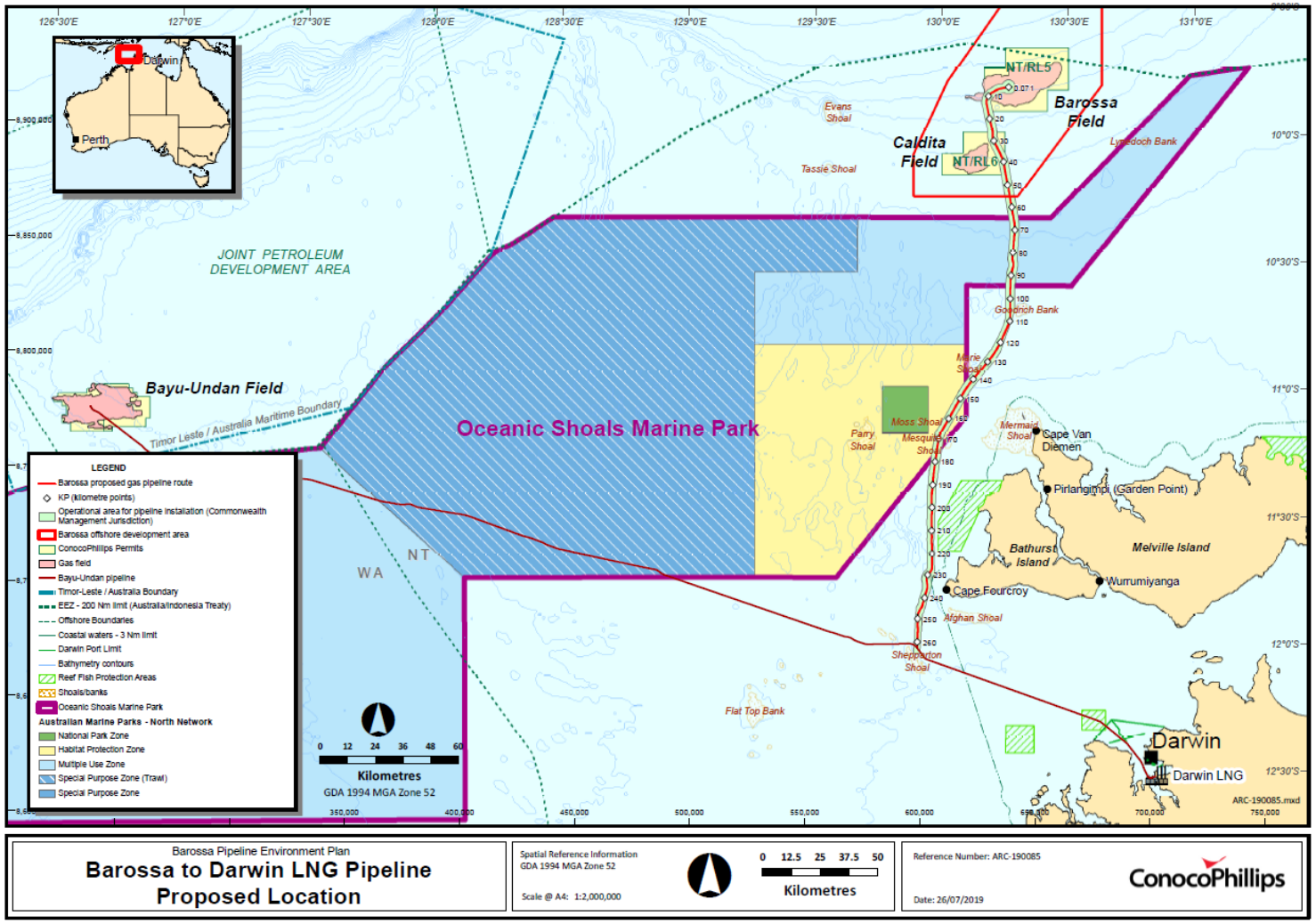

Figure 3-1: Barossa GEP installation activity location

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3.4 Interface with Other Documents

This OPEP interfaces with the Barossa GEP Installation EP (BAA-100 0329), which provides detailed information regarding the existing environment and risks to environmental, socio-economic and cultural receptors. The EP also demonstrates that potential for environmental impacts and risks that may arise from the activities considered within the EP, including hydrocarbon spill risks, are managed to a level that is considered to be as low as reasonably practicable (ALARP) and acceptable. This includes an assessment of response options that will reduce impacts and risks to ALARP and/or acceptable levels, and evaluation of the potential impact and risks of implementing these response options.

Details of the training, exercises, drills and audits that will be undertaken to provide preparedness and capability for delivery of this OPEP in the event of a spill are outlined in the EP (Implementation Strategy - Section 7).

This OPEP provides components of the Implementation Strategy for the EP, specifically in relation to Regulations 14 (8), (8AA), (8D), (8E) of OPGGS (E) Regulations. This OPEP is consistent with, and supports, the procedures and resources provided in the ConocoPhillips documents listed in **Table 3-1**, and the external plans and documents below:

- The National Plan for Maritime Environmental Emergencies (AMSA 2019);
- Northern Territory Oil Spill Contingency Plan (OSCP) (Department of Transport Marine Safety 2014); and
- Australian Marine Oil Spill Centre (AMOSC) Australian Industry Cooperative Oil Spill Response Arrangements (AMOSPlan) (AMOSC 2017).

Table 3-1: Key interfacing ConocoPhillips documents

ConocoPhillips Document	Description
Barossa GEP Installation EP (BAA-100 0329)	Provides a detailed description of the activity, the existing environment, environmental impacts and risks, and prescribes environmental performance outcomes and standards (i.e. management and mitigation measures) to reduce potential impacts of response strategy implementation to ALARP. The EP also details roles and responsibilities of personnel (including competencies, training, drills and exercises); management of non-conformance and change; internal and external reporting arrangements; and stakeholder consultation undertaken. The plan also provides details of the legislation applicable to hydrocarbon spills and the stakeholder engagement process that has informed the development of this OPEP.
Barossa Emergency Response Plan (BAA-100 0302)	Outlines the framework, expectations, strategies and arrangements that will support ConocoPhillips and Contractor emergencies during the phases of the Barossa project.
ConocoPhillips Australian Business Unit (ABU) Operational and Scientific Monitoring Program (OSMP) (ALL/HSE/PLN/032)	Describes a program of monitoring oil pollution that will be enacted in the event of an oil spill. The OSMP is the principal tool for determining the extent, severity, and persistence of environmental impacts from a marine hydrocarbon spill and informs any remediation activities that may be undertaken.
ConocoPhillips CIMP (ALL/HSE/ER/001)	The CIMP details the ConocoPhillips procedures for responding to an emergency incident, including a hydrocarbon spill event. The CIMP contains procedures for the activation of the IMT and Crisis Management Team (CMT), the roles and responsibilities of the IMT and CMT, and procedures for post-incident reporting and investigation.
ConocoPhillips Emergency Contacts Directory (ALL/HSE/ER/008)	Contains all contact numbers of agencies, regulators, Oil Spill Response Organisations, vendors and suppliers.
ConocoPhillips Incident Reporting and Investigation Procedure (ALL/HSE/PRO/003)	Identifies business rules and processes to be implemented to confirm that reporting, recording and investigation of incidents (including near misses) are undertaken, documented and communicated. These documents align with the ConocoPhillips' Health, Safety and Environmental Management System.

ConocoPhillips Document	Description
ConocoPhillips Waste Management Plan (ALL/HSE/PLN/004)	Defines ConocoPhillips' business rules for eliminating or minimising the environmental impacts resulting from production, storage, handling, transport, recycling and disposal of all waste generated during ConocoPhillips' operations and activities.

4 SPILL MANAGEMENT ARRANGEMENTS

4.1 Control Agencies and Jurisdictional Authorities

The spill source, initial spill location and eventual trajectory of the spill will influence the Jurisdictional Authorities and Control Agencies involved in the spill response. Definitions of Jurisdictional Authority and Control Agency are as follows:

- Jurisdictional Authority – the agency which has responsibility to verify that an adequate spill response plan is prepared and, in the event of an incident, that a satisfactory response is implemented. The Jurisdictional Authority is also responsible for initiating prosecutions and the recovery of clean-up costs on behalf of all participating agencies.
- Control Agency – the organisation that is assigned by legislation, administrative arrangement or within a relevant contingency plan to direct and manage the spill response. Control Agencies have the operational responsibility of response activities but may have arrangements in place with other parties to provide response assistance under their direction.

Table 4-1 provides guidance on the designated Control Agency and Jurisdictional Authority for Commonwealth and Territory/Port Waters, for vessel and petroleum activity spills.

4.1.1 Pipelay Vessel Spill Whilst Laying the Pipeline

The pipelay vessel is defined as a facility by Schedule 3, Part 1, Clause 4 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006 (*Cth) (OPGGS Act).

CONOCOPHILLIPS IS THE CONTROL AGENCY FOR ANY SPILLS ARISING FROM THE PIPELAY VESSEL WHILE IT IS LAYING THE PIPELINE.

In this situation, ConocoPhillips are responsible for incident control and implementation of this OPEP. Figure 4-1 outlines the activation process in this case, including the situation where the spill enters NT waters.

The pipelay vessel is not considered to be a facility when not laying the pipeline; it is considered to be a vessel. AMSA is the Control Agency for any spill within the Operational Area from the pipelay vessel whilst not laying the pipeline.

In all circumstances, the pipelay vessel master is responsible for implementing source control arrangements detailed in the vessel-specific SOPEP and/or ERP.

4.1.2 Vessel Spills

AMSA manages the National Plan for Maritime Environmental Emergencies (AMSA 2019) and is the Control Agency for all vessel-based spills in the Commonwealth jurisdiction. This includes supply or support vessels and the pipelay vessel when it is not laying the pipeline, regardless of whether they are in the Operational Area or not.

In all circumstances, the vessel master is responsible for implementing source control arrangements detailed in the vessel-specific SOPEP and/or ERP.

This activity involves the use of vessels; therefore, ConocoPhillips has engaged with AMSA, as relevant to the nature and scale of the potential hydrocarbon releases from this activity.

ConocoPhillips has arrangements in place to conduct the first strike response (e.g. SOPEP and/or aerial surveillance operations) until AMSA or a nominated National Plan agency assumes Incident Command (as the Control Agency).

ConocoPhillips will continue to implement response activities outlined in this plan and operational and scientific monitoring activities as outlined in the ABU OSMP (ALL/HSE/PLN/032), as deemed necessary by the Control Agency. **Figure 4-2** outlines the activation process for vessel-based spills and how ConocoPhillips Australia may support AMSA in response operations.

4.1.3 Spills Entering Northern Territory Waters

If a Tier 2/3 spill occurs within Commonwealth waters and trajectory modelling predicts entry of the hydrocarbon into NT waters, ConocoPhillips shall notify the NT Regional Harbourmaster and NT Pollution Hotline as per **Table 6-1** who will then contact the Territory Marine Pollution Controller (TMPC). The TMPC will then establish an NT Incident Controller (NT IC) and NT IMT, if required.

For Tier 2/3 spills that cross from Commonwealth waters into NT waters, ConocoPhillips will remain Control Agency but will ensure that all operational tasking has been reviewed by the NT IC. The NT IC and the TMPC will be consulted prior to the finalisation of each Incident Action Plan (IAP) that relates to activities in NT waters.

For Tier 2/3 spills that contact NT shorelines the NT IC will assume the role of Control Agency. An NT IMT will be established in Darwin, comprising staff from across NT Government. The NT IMT will be supported by existing NT emergency response arrangements and ConocoPhillips will provide support via resourcing and personnel. Additional support, if required, will be provided under the provisions of the NT *Emergency Management Act 2013* (NT), through the Territory Emergency Management Council and the NT Government Functional Groups. ConocoPhillips will provide Liaison Officer/s to sit within the NT IMT to ensure uniformity between the NT IMT and ConocoPhillips in the incident response.

Figure 4-1 illustrates the Control Agency and coordination structure for spills entering NT waters and contacting NT shorelines.

4.1.3.1 Oiled Wildlife Response

The NT Government have the following interim arrangements in place for oiled wildlife response (OWR) management:

- The NT Emergency Management Council will delegate responsibilities associated with wildlife and relevant activities in National Parks, Reserves and Marine Parks.
- Direct coordination shall be managed through the designated NT Government Functional Group.

The Commonwealth Department of the Environment and Energy (DoEE) is the Jurisdictional Authority for oiled wildlife in Commonwealth waters, although for vessel-based spills, the Control Agency function remains with AMSA. The framework for developing the Commonwealth Oiled Wildlife Response Plan (OWRP) is provided in AMSA's National Guidelines for the Development of Oiled Wildlife Response Contingency Plans and guidance may also be sought from State and Territory OWRPs.

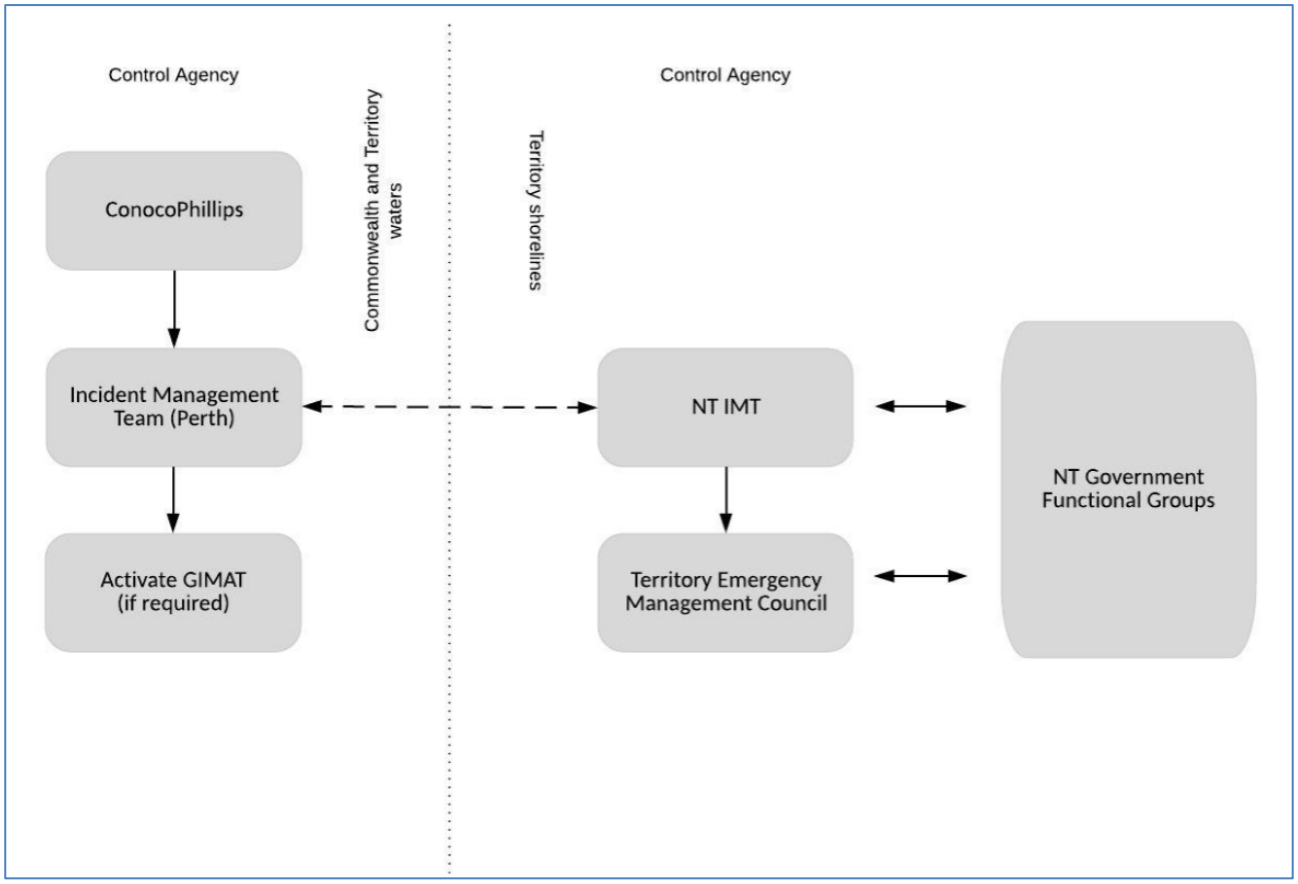

Figure 4-1: Activation Guidance – Petroleum Activity Spills

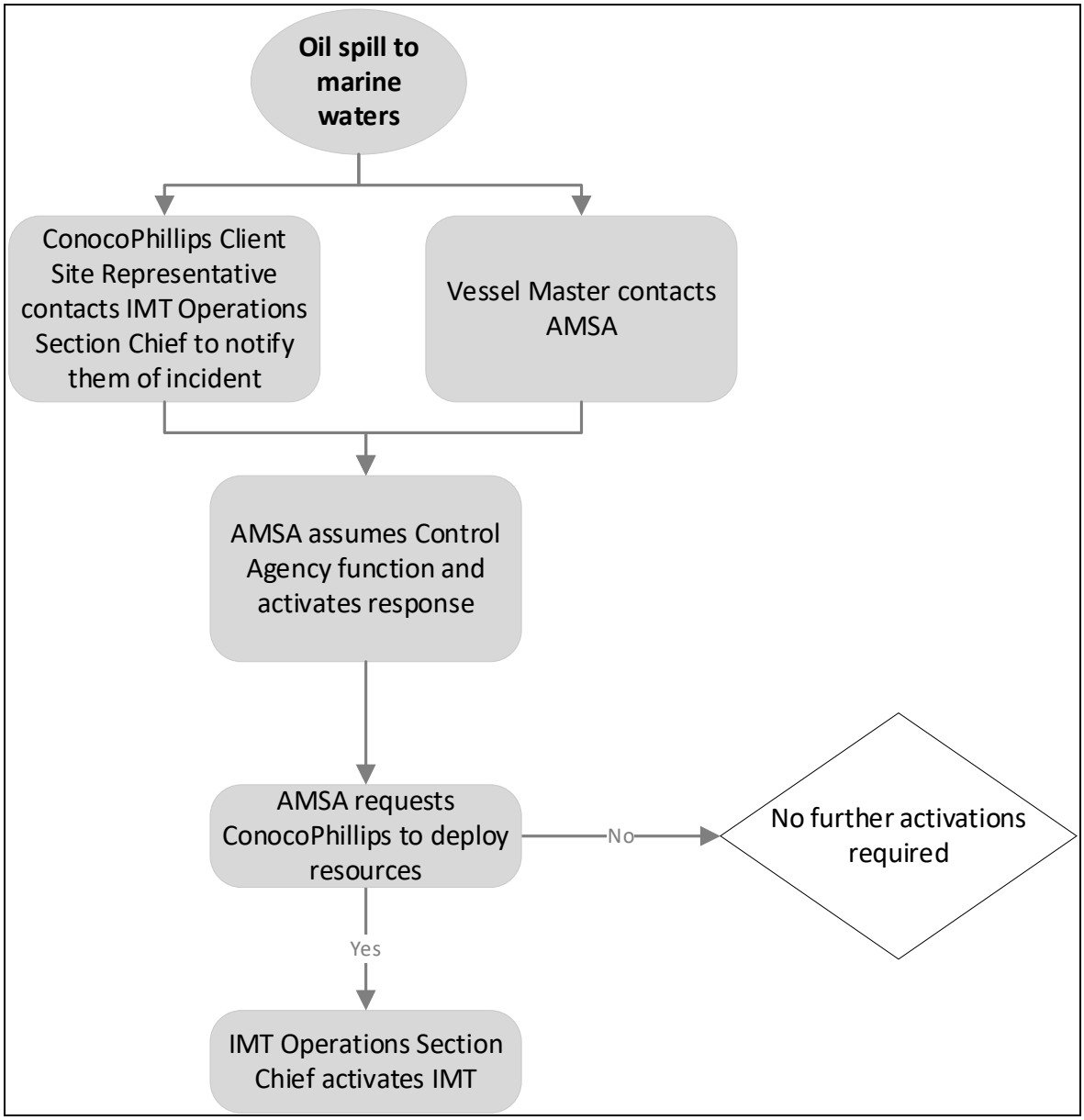

Figure 4-2: Activation Process – Vessel Based Spills in Commonwealth Waters

Table 4-1: Jurisdictional and Control Agencies for Hydrocarbon Spills

Jurisdictional Boundary	Spill Source	Jurisdictional Authority	Control Agency		Relevant Documentation
			Tier 1	Tier 2/3	
Commonwealth waters (three to 200 nautical miles from territorial/state sea baseline)	Vessel[3]	AMSA	AMSA		• Vessel SOPEP • National Plan
	Petroleum activities[4]	NOPSEMA	ConocoPhillips		• Activity OPEP
NT waters (territorial sea baseline to three nautical miles and some areas around offshore atolls and islands)	Vessel	NT Department of Environment and Natural Resources (DENR)	Vessel owner	NT IMT[5]	• Vessel SOPEP • NT OSCP (Department of Lands and Planning 2012)
	Petroleum activities	DENR	ConocoPhillips[6]		• Activity OPEP • NT OSCP (Department of Lands and Planning 2012)
NT shorelines	Vessel	DENR	Vessel owner	NT IMT[5]	• NT OSCP (Department of Lands and Planning 2012)
	Petroleum activities	DENR	ConocoPhillips	NT IMT[5]	• NT OSCP (Department of Lands and Planning 2012)

[3] Vessels are defined by Australian Government Coordination Arrangements for Maritime Environmental Emergencies (AMSA, 2017b) as a seismic vessel, supply or support vessel, or offtake tanker.

[4] Includes a 'Facility', such as a fixed platform, mobile offshore drilling unit, subsea infrastructure, or a construction, decommissioning and pipelaying vessel. As defined by Schedule 3, Part 1, Clause 4 of the OPGGS Act.

[5] NT IMT will be the Control Agency but will be supported by the Titleholder (additional support from AMOSC if required)

[6] ConocoPhillips will be the Control Agency but will request approval of IAPs from the NT IC.

4.2 Key Roles and Responsibilities

ConocoPhillips' IMT personnel are trained in emergency management in line with the ConocoPhillips Incident Command System (ICS) framework. The roles and responsibilities of the IMT are listed in detail in the ConocoPhillips CIMP (ALL/HSE/ER/001). The function of each team and key individual roles are summarised in Section 7 (Implementation Strategy) of the EP.

4.3 ConocoPhillips Tiered Response Framework

The ConocoPhillips crisis and incident management arrangement uses a tiered response framework which classifies incidents based on the significance of the consequences, the risks involved and potential for escalation. The significance of the emergency situation determines the tier level of response that is activated. ConocoPhillips emergency response personnel are trained to respond according to the characteristics of the emergency response tier, and hence this OPEP refers to the crisis and incident management tier levels. **Table 4-2** provides an overview of the characteristics and escalation criteria for each tier and how each tier aligns to the incident levels in the National Plan for Environmental Emergencies (AMSA 2019).

4.4 Response Tiers and Escalation Criteria

The incident tier will determine where the resources will be drawn from to respond to the spill and the level of incident management that is required to manage the response effort. In the event of a spill occurring where effective response is considered beyond the capabilities within a tier, the response will be escalated immediately to the next tier. The decision to escalate a response to a higher tier (or level) (as defined in **Table 4-2**) will be made by the responsible Control Agency. If the response tier is undetermined, then a worst-case scenario should be assumed when activating resources, as it is always possible to scale down the response effort.

Table 4-2: ConocoPhillips Incident Tier Guidance

Characteristic	ConocoPhillips Crisis and Incident Management Response Tier		
	Tier 1	**Tier 2**	**Tier 3**
General description and escalation criteria	An incident that has not caused severe injury to personnel or damage to assets or the environment Incident does not threaten the safety of a facility and can be managed by the ERT and its resources	An incident that exceeds tier 1 capability and requires the assistance of the IMT and external support services/agencies If no external support is required, an incident may be classified in a higher tier if there is potential for escalation or damaging public image or government relations	An incident that exceeds tier 2 capabilities and resources and requires the assistance of the CMT Incident may attract media coverage or create public outrage and has the potential to cause, or does cause, a major impact on ConocoPhillips worldwide
AMSA National Plan levels and escalation criteria	***Level 1*** Generally able to be resolved by Responsible Party through the application of local or initial response resources (first strike response)	***Level 2*** Typically, more complex in size, duration, resource management and risk than Level 1 incidents. May require deployment of resources beyond the first strike response	***Level 3*** Characterised by a high degree of complexity, require strategic leadership and response coordination. May require national and international response resources
ConocoPhillips IMT/CMT activation	On Site or Facility ERT activated	IMT activated CMT may be activated	IMT activated CMT activated
Resources at Risk			
Human	Potential for serious injuries	Potential for loss of life	Potential for multiple loss of life
Environment	Isolated impacts or with natural recovery expected within weeks.	Significant impacts and recovery may take months. Monitoring and remediation may be required.	Significant area and recovery may take months or years. Monitoring and remediation will be required.
Wildlife	Individuals of a small number of fauna species affected	Groups of fauna species or multiple numbers of individuals affected	Large numbers of fauna (individuals and species) affected
Economy	Business level disruption	Business failure	Disruption to a sector
Social	Reduced services	Ongoing reduced services	Reduced quality of life
Infrastructure	Short term failure. Non-safety/operational critical failure	Medium term failure. Potentially safety/operational critical failure	Severe impairment. Safety/operational critical system failure
Public affairs	Local and regional media coverage	National media coverage	International media coverage

5 INCIDENT MANAGEMENT

5.1 IMT Planning Process

ConocoPhillips uses the ICS Planning Process for managing incidents. This process ensures that response operations include sufficient, ongoing planning to enable development of strategic objectives, effective use of resources, and implementation of response options.

This Planning Process is commonly referred to as the 'Planning P'. The Planning P provides a guide to the key steps involved in the incident planning process. The leg of the 'P' describes the initial response period which is commonly characterised by the first operational period of the response (Reactive Phase). During this period, the IMT will conduct initial notifications, assess the incident, prepare the ICS 201 Briefing Forms and Weather Report and consider resourcing and tactics to respond to the incident. For a short-duration response, an initial response may be all that is required.

If the incident is likely to require additional operational periods, shift changes of personnel or third parties involved in the response, an IAP should be developed. The development of the IAP is facilitated by the IMT Planning Section Chief. This involves using IAP software to facilitate development of the IAP and recording of critical information and actions to enable effective management of the response.

5.2 Incident Action Plan Development

The initial IAP will contain the following:

- ICS 201 – 1: Incident Briefing map;
- ICS 201 – 2: Summary of current activities;
- ICS 201 – 3: IMT structure;
- ICS 201 – 4: Resources Summary;
- ICS 201 – 5: Site Safety and Control Analysis;
- Weather (Bureau of Meteorology information);
- Notification status report; and
- Incident log – including each sections 214a individual logs.

Additional components will be added to the IAP according to the size and complexity of the incident. For complex incidents, it may take a number of operational periods to achieve the incident objectives. The cyclical Planning P is designed to take the incident objectives and break them down into tactical assignments for each operational period. Typically, the Planning Section will commence work on the IAP for the next operational period during the current operational period.

The IMT Emergency Operations Centre contains specific display boards and technology that will facilitate the collection and review processes required in the IAP development processes.

5.3 Activation of Global ConocoPhillips Support Resources

If ConocoPhillips Australia requires additional support to respond to a spill, it can activate ConocoPhillips' Global Incident Management Assist Team (GIMAT) through the Crisis Hotline (**Table 5-1**). This team is comprised of personnel skilled in a range of emergency management functions. When these resources arrive, they are integrated into the existing IMT structure. Additional information on the resources available are provided the ABU CIMP (All/HSE/ER/001).

Table 5-1: Activation of Global ConocoPhillips Resources

Support Agency/Role	Activation Instructions	COP Person Responsible for Activating
GIMAT	**Step 1.** Provide notification brief to Crisis Hotline and on-call ConocoPhillips Crisis Management and Emergency Response (CM&ER) (Houston) **Step 2.** Liaise with ConocoPhillips CM&ER (Houston) to determine support required	Crisis Manager or delegated to Vice President – Health, Safety and Environment

5.4 Activation of External Agency Support Resources

If ConocoPhillips Australia requires additional support or technical expertise to monitor or respond to a spill, it can request the support of external agency resources. **Table 5-2** provides guidance on the resources offered by these support services and instructions on when and how to activate them.

5.5 Environmental Performance

Environmental Performance Outcomes, Standards and Measurement Criteria are listed in **Table 5-3**.

Table 5-2: Activation of External Agency Support Services

Support Agency/Role	Timing	Resources	Activation Instructions	COP Person Responsible for Activating
AMOSC Duty Manager	As soon as possible	ConocoPhillips is a participating company in AMOSC and can call upon AMOSC personnel and equipment. Under the AMOSPlan, ConocoPhillips can also call upon mutual aid from other trained industry company personnel and response equipment. AMOSC's stockpiles of equipment include dispersant, containment, recovery, cleaning, absorbent, oiled wildlife and communications equipment. Equipment is located in Geelong, Fremantle, Exmouth and Broome	**Step 1**. Obtain approval from ConocoPhillips Incident Commander to mobilise AMOSC **Step 2.** Notify AMOSC that a spill has occurred. Put on standby as required – activate if spill response escalates in order to mobilise spill response resources consistent with the AMOSPlan **Step 3.** E-mail confirmation and a telephone call to AMOSC will be required for mobilisation of response personnel and equipment, and callout authorities will be required to supply their credentials to AMOSC. A signed service contract must also be completed by a call out authority and returned to AMOSC prior to mobilisation	OSC and EUL to discuss need for AMOSC resources If support is required, this must be approved by the IMT Incident Commander (see step 1). The IMT EUL (or delegate) will notify AMOSC
Oil Spill Response Limited (OSRL), OSRL Duty Manager	If spill requires additional resources or technical expertise	ConocoPhillips has a contract with OSRL, which includes the provision of support functions, equipment and personnel to meet a wide range of scenarios **Personnel** Personnel are on standby and available 24 hours a day, 365 days a year with equipment and logistics support to initiate, mobilise, and sustain a response comprising: 1 Senior Oil Spill Response Manager 1 Oil Spill Response Manager 18 Oil Spill Response Specialists / Oil Spill Responders 1 Logistics Service Branch Coordinator Technical advisors and additional response personnel may also be provided **Equipment and services** Equipment includes subsea well intervention equipment, dispersant, dispersant application systems, containment, recovery, cleaning, absorbent, waste storage, oiled wildlife kits, vehicles, vessel and communications equipment, plus	**Step 1.** Contact OSRL Duty Manager in Singapore and request assistance from OSRL **Step 2.** Advise ConocoPhillips CM&ER Houston that OSRL resources have been requested **Step 3.** Send notification to OSRL in conjunction with CM&ER Houston as soon as possible after verbal notification **Step 4.** Upon completion of the OSRL incident notification form, OSRL will plan and place resources on standby. Mobilisation of resources will take place once OSRL has received mobilisation authorisation from ConocoPhillips Houston	IMT Incident Commander, OSC and EUL to discuss need for OSRL resources If support is required, the IMT Incident Commander must formally request the ConocoPhillips CMT Crisis Manager to activate OSRL

Support Agency/Role	Timing	Resources	Activation Instructions	COP Person Responsible for Activating
		logistics support (Access to 50% of equipment by type)		
RPS Group	As soon as practicable	ConocoPhillips has an agreement in place with RPS to allow rapid marine hydrocarbon spill modelling capability to be activated at any time during activities, which will be undertaken for any spill greater than tier 1. AMOSC can also run modelling on behalf of ConocoPhillips, if required, as part of contracting arrangements with RPS	Contact RPS Group Duty Officer	IMT EUL (or delegate)
Operational and Scientific Monitoring Plan (OSMP) Providers (Refer to Attachment B – Response Preparedness, Resources and Support Summary for list of providers)	If OSMP initiation criteria are triggered (Refer to Appendix F of the EP	ConocoPhillips has contract arrangements in place with its third party OSMP providers to make ready personnel and equipment to undertake operational and scientific monitoring scopes	Contact ConocoPhillips Project Manager for each provider IMT EUL (or delegate)	IMT EUL (or delegate)

Note: The ConocoPhillips Emergency Contacts Directory (ALL/HSE/ER/008) contains the contact numbers for external personnel and facilities. The Emergency Contacts Directory is reviewed and updated every six months.

Table 5-3: Environmental Performance – Incident Management

Environmental Performance Outcome	Performance Standard	Measurement Criteria
EPO IS 1 Manage incident via a systematic planning process	***EPS IS 1.1*** IMT to complete ICS Briefing Forms (ICS-201) during the initial phase of the incident, followed by an IAP for each operational period	***MC IS 1.1.1*** Records demonstrate IMT completed ICS Briefing Forms (ICS-201) during the initial phase of the incident, followed by an IAP for each operational period
	EPS 1.2 IMT to monitor effectiveness of tactics being implemented and use information in the development of IAPs	***MC 1.2.1*** Records demonstrate IMT used information on effectiveness of tactics in the development of IAPs
EPO IS 2 Maintain contracts with support agencies to obtain additional support or technical expertise to monitor and/or respond to a spill	***EPS 2.1*** Service Level Agreement maintained with OSRL, Master Services Contract maintained with AMOSC and agreement maintained with RPS Group for the duration of the activity	***MC 2.1.1*** Records demonstrate that Service Level Agreement maintained with OSRL, Master Services Contract maintained with AMOSC and agreement maintained with RPS Group for the duration of the activity

6 EXTERNAL NOTIFICATIONS AND REPORTING

ConocoPhillips is required to make timely notifications to several government agencies in the event of a spill. In addition, ConocoPhillips has stringent global health, safety and environmental reporting requirements that must be met.

All spills are reported in accordance with the ConocoPhillips Incident Reporting and Investigation Procedure (ALL/HSE/PRO/003).

The key external contact points and agencies that require notification in the event of a reportable spill are provided in **Table 6-1**.

This notification summary table is a guide to be used by the ConocoPhillips IMT for agencies that must be contacted in the event of a spill incident.

The ConocoPhillips Emergency Contacts Directory (ALL/HSE/ER/008); contains the contact numbers for all agencies listed. The Emergency Contacts Directory is reviewed and updated every six months.

Table 6-1: External Notification and Reporting Requirements

Agency or Authority	Type of Notification /Timing	Legislation/Guidance	Reporting Requirements	Responsible Person/Group	Forms
NOPSEMA Reportable Incidents					
NOPSEMA (Incident Notification Office)	If volume of oil is greater than 80 Litres: • Verbal notification within **2 hours** • Written report as soon as practicable, but no later than 3 days	*Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) Offshore Petroleum Greenhouse Gas Storage (Environment) Regulations 2009 (Cth)	A spill associated with the Barossa GEP installation activities that has the potential to cause moderate to significant environmental damage[7]	Notification by ConocoPhillips IMT EUL (or delegate)	Incident reporting requirements: https://www.nopsema.gov.au/environmental-management/notification-and-reporting/
National Offshore Petroleum Titles Administrator (NOPTA) (Titles Administrator)	Written report to NOPTA within 7 days of the initial report being submitted to NOPSEMA	Guidance Note (N-03000-GN0926) Notification and Reporting of Environmental Incidents	Spill in Commonwealth waters that is reportable to NOPSEMA	Notification by ConocoPhillips IMT EUL (or delegate)	Provide same written report as provided to NOPSEMA
Tier 1-3 Spills					
AMSA (Rescue Coordination Centre (RCC)	Immediate verbal notification to include: • name of ship/s involved • time, type and location of incident • quantity and type of harmful substance • assistance and salvage measures • any other relevant information	National Plan for Maritime Environmental Emergencies	• All slicks trailing from a vessel • All spills to the marine environment • All spills where National Plan equipment is used in a response	Vessel Master	Incident reporting requirements: https://www.amsa.gov.au/marine-environment/marine-pollution/mandatory-marpol-pollution-reporting Online POLREP - https://amsa-forms.nogginoca.com/public/

[7] A reportable incident is defined by the OPGGS (E) Regulations as 'an incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage'. For the purpose of determining whether an incident is a reportable incident, ConocoPhillips considers any incident that causes, or has the potential to cause, a consequence severity rating of 3 or greater to be a reportable incident

Agency or Authority	Type of Notification /Timing	Legislation/Guidance	Reporting Requirements	Responsible Person/Group	Forms
	• Written POLREP form, within 24 hours of request from AMSA				
Commonwealth DoEE (Director of monitoring and audit section)	Email notification as soon as practicable	*Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)	If matters of national environmental significance are considered at risk from a spill or response strategy, or where there is death or injury to a protected species	ConocoPhillips IMT EUL (or delegate)	Not applicable
NT RHM	• **Immediate** verbal notification • Follow up with POLREP as soon as practicable following verbal notification	NT OSCP. As per State legislation (i.e. *Marine Pollution Act 1999* (NT))	All actual or impending spills in NT waters, regardless of source or quantity. Notify if spill has the potential to impact wildlife in Territory waters (to activate the Oiled Wildlife Coordinator)	ConocoPhillips IMT EUL (or delegate)	Marine Pollution Reports (POLREPS) are to be emailed to rhm@nt.gov.au (RHM) Instructions for submitting POLREPS (including a POLREP Template) are provided on the NT Government webpage https://nt.gov.au/marine/marine-safety/report-marine-pollution
DENR (Pollution Response Hotline; Environmental Operations)	• Verbal notification as soon as practicable • Written report to be provided as soon as practicable after the incident, unless otherwise specified by the Minister	NT OSCP. As per State legislation (i.e. *Marine Pollution Act 1999* (NT))	All actual or impending spills in NT waters, regardless of source or quantity. Notify if spill has the potential to impact wildlife in Territory waters (to activate the Oiled Wildlife Coordinator)	ConocoPhillips IMT EUL (or delegate)	NT EPA POLREP: POLREPS are to be emailed to pollution@nt.gov.au (Environmental Operations) Instructions for submitting POLREPS (including a POLREP Template) are provided on the NT Government webpage https://nt.gov.au/marine/marine-safety/report-marine-pollution

Agency or Authority	Type of Notification /Timing	Legislation/Guidance	Reporting Requirements	Responsible Person/Group	Forms
Parks Australia (Director of National Parks)	Verbal notification as soon as practicable	EPBC Act	All actual or impending spills which occur within an Australian marine park or are likely to impact on an Australian marine park	ConocoPhillips IMT EUL (or delegate)	Not applicable, but the following information should be provided: • Titleholder's details • Time and location of the incident (including name of marine park likely to be affected) • Proposed response arrangements as per the OPEP • Details of the relevant contact person in the IMT
Australian Fisheries Management Authority	Verbal phone call notification within 8 hours		• Fisheries within the 'Environment that may be affected' (EMBA) • Consider a courtesy call if not in exposure zone	ConocoPhillips IMT Public Information Officer (Government and Public Affairs)	Not applicable
NT DPIR	Verbal phone call notification within 8 hours		• Fisheries within the EMBA • Consider a courtesy call if not in exposure zone	ConocoPhillips IMT Public Information Officer (Government and Public Affairs)	Not applicable

7 SELECTING RESPONSE OPTIONS

7.1 Response Objectives

ConocoPhillips' response priorities are consistent with Territory and State response priorities and the National Plan for Maritime Environmental Emergencies (AMSA 2019). ConocoPhillips' CIMP (ALL/HSE/ER/001) states the following elements should be considered during any incident:

- Safety;
- Impact on people;
- Impact on the environment;
- Impact on assets;
- Public information;
- Impact on reputation;
- Business recovery; and
- Legal aspects.

For spills where ConocoPhillips is the Control Agency, the response objectives are to develop and implement appropriate and effective response options commensurate to the scale, nature and risk of the spill, including the following:

- Minimise the volume or duration of a hydrocarbon spill;
- Obtain situational awareness as soon as practicable, and maintain for the duration of the response; and
- Protect sensitive receptors from hydrocarbon impacts.

7.2 Spill Scenarios

There are two worst-case credible spill scenarios associated with marine vessel operations during pipeline installation activities, which could occur at any location along the GEP route. These scenarios are outlined in **Table 7-1**. Additional detail on hydrocarbon characteristics and weathering data are included in **Attachment A - Hydrocarbon Characteristics, Weathering Properties and Modelling Results**.

Table 7-1: Barossa GEP Installation Spill Scenario Summary

Worst Case Credible Spill Scenario	Hydrocarbon Type	Maximum Credible Volume Released (m^3)	EMBA for Surface Hydrocarbons	Estimated Minimum Time and Volumes for Shoreline Contact
Scenario 1: Pipelay vessel collision – fuel tank rupture	MDO (Group II)	700 m^3 surface release over a 6-hour period	Moderate exposure threshold (10 - 25 g/m^2) at the sea surface up to approximately 41.3 km from release location (Winter)	Estimated minimum time for contact with Bathurst Island is 6 hours (20% probability). Maximum volume ashore: 224.5 m^3
Scenario 2: Bunkering incident. *Note: no bunkering within 20 km of Tiwi Islands shorelines*	MDO (Group II)	10 m^3 instantaneous surface release	Above moderate exposure threshold (10 g/m^2) up to approximately 9.5 km from release location (Summer)	No contact predicted.

7.3 Priority Protection Areas

Results from hydrocarbon spill modelling were compared against the location of key sensitive receptors with high conservation valued habitat or species or important socio-economic/heritage value within the EMBA. Sensitive receptors within the EMBA with shortest potential timeframes to contact above the following moderate impact thresholds were identified:

- Floating oil: 10 g/m^2;
- Entrained oil: 100 parts per billion (ppb);
- Dissolved aromatic hydrocarbons: 50 ppb; and
- Shoreline accumulation: 100g/m^2.

More information on the development of the moderate impact thresholds is provided in Section 5.3.7 of the EP.

Table 7-2 outlines the list of priority protection areas in the event of a spill associated with the pipeline operation activities. Depending on the spill scenario (i.e. volume and location), the priority protection areas could be impacted by surface hydrocarbons at or above moderate threshold concentrations.

Implementation of operational and scientific monitoring may focus on Priority Protection Areas relative to other areas due to their high environmental value.

Table 7-2: Priority Protection Areas in the EMBA

Priority Protection Area	Description
Tiwi Island shorelines	Contains a range of shoreline types that are vulnerable to oil pollution, including: • Mangroves; • Sandy beaches; • Exposed rocky shores; • Wavecut platforms; and • Tidal flats. Contains cultural heritage sites, including: • Culturally significant heritage sites for Tiwi Islanders. Contains nesting beaches for flatback and olive ridley turtles and crested terns.
Oceanic Shoals Marine Park	The Oceanic Shoals Marine Park is protected under the EPBC Act. The Oceanic Shoals Marine Park is significant because it contains habitats, species and ecological communities associated with the Northwest Shelf Transition. It contains four key ecological features: carbonate bank and terrace systems of the Van Diemen Rise; carbonate bank and terrace systems of the Sahul Shelf; pinnacles of the Bonaparte Basin; and shelf break and slope of the Arafura Shelf (all valued as unique seafloor features with ecological properties of regional significance).

7.4 Net Environmental Benefit Analysis

A pre-spill net environmental benefit analysis (NEBA) was completed to identify the potential net environmental benefit to key sensitive receptors associated with the implementation of potential spill response options (Appendix C of the Barossa GEP Installation EP (BAA-100 0329). **Table 7-4** presents a summary of the outcomes of the NEBA process and outlines response options which may result in a net environmental benefit based on the credible hydrocarbon spill scenarios defined in **Section 7.2**.

The pre-spill NEBA identified primary and secondary response options recommended to be used during the response. Primary response options are the principal methods that have been assessed to have a net environmental benefit of managing the spill. Additional secondary (contingency) response options are those that may either be used to supplement the primary response option, or which may be appropriate under specific circumstances (e.g. surveillance activities indicate the spill will contact sensitive wildlife). The secondary response options which may be suitable and have been subject to the pre-spill NEBA include offshore wildlife hazing and offshore pre-emptive capture/post-contact wildlife response.

Response option selection requires an evaluation of trade-offs associated with each response option (e.g. health and safety, feasibility, flexibility etc.), in addition to geographic/environmental conditions and the fate and weathering characteristics of the spill. As a result of this evaluation, mechanical physical dispersion, shoreline protection and deflection and shoreline clean-up were not selected as suitable response options (Refer to **Table 7-4**).

During a response, the EUL in the IMT is responsible for ensuring a spill response (operational) NEBA is conducted, to determine if output from the pre-spill NEBA is still appropriate. The spill response (operational) NEBA should incorporate post-spill modelling data, surveillance and operational monitoring data and should be incorporated into the IAP. The spill response (operational) NEBA will also be used to inform decision making around the initiation and termination of response options. Environmental Performance Outcomes, Standards and Measurement Criteria are listed in **Table 7-3**.

Table 7-3: Environmental Performance – NEBA

Environmental Performance Outcome	Performance Standard	Measurement Criteria
EPO IS 3 Implement emergency response options that result in net environmental benefit	***EPS IS 3.1*** IMT to undertake spill response (operational) NEBA to determine initiation and termination of response options	***MC IS 3.1.1*** Records demonstrate spill response (operational) NEBA undertaken during OPEP implementation
	EPS IS 3.2 IMT to undertake an operational NEBA during the preparation and review of IAPs	***MC IS 3.2.1*** Records demonstrate IMT completed an operational NEBA during the preparation and review of IAPs

Table 7-4: NEBA Summary of Response Options

Response Option	Scenario 1 – Pipelay Vessel Collision – Fuel Tank Rupture (700 m^3 MDO)	Scenario 2 – Bunkering Incident (10 m^3 MDO)	NEBA Summary
Monitor and evaluate	Primary response option	Primary response option	The requirement for situational awareness is critical to implementing an effective spill response and to understand the impacts that may result from a spill. Therefore, the benefits of undertaking this response are considered to significantly outweigh the potential environmental risks/impacts for both worst-case credible spill scenarios.
Wildlife response – hazing	Secondary response option	N/A	Wildlife response - hazing is considered a secondary response option for the vessel collision scenario. This means that this response would not be automatically triggered but will be considered where it is safe and practicable to implement, and where significant aggregations of wildlife are detected during the monitor and evaluate response. Implementing wildlife hazing on the shoreline would result in health and safety risks to personnel due to the remote tropical location and lack of infrastructure (e.g. access roads). Shoreline-based hazing is likely to be effective for birds, which are not at high risk from spilled oil as little MDO is predicted to accumulate on shorelines. Displacing seabirds from the shoreline may expose them to floating oil at sea. Hence, the wildlife hazing secondary response strategy would only be implemented in offshore or nearshore waters.
Pre-emptive capture/post-contact wildlife response (offshore, vessel based responses only)	Secondary response option	N/A	Pre-emptive capture/post-contact wildlife response is considered a secondary response option for the vessel collision scenario. This option would only be triggered if the monitor and evaluate option and/or operational monitoring showed offshore wildlife were at risk of being impacted or had already been impacted by the spill, and it is safe and practicable to implement wildlife response tactics.

Response Option	Scenario 1 – Pipelay Vessel Collision – Fuel Tank Rupture (700 m^3 MDO)	Scenario 2 – Bunkering Incident (10 m^3 MDO)	NEBA Summary
(Mechanical) physical dispersion	N/A	N/A	Mechanical dispersion may assist natural dispersion (e.g. prop wash or use of fire monitor sprays from vessels) to remove MDO from the sea surface. However, MDO is expected to weather rapidly at the sea surface and the benefits of undertaking this response are not considered to significantly outweigh the potential risk to human health. The volatile components in MDO have the potential to cause human health issues such as difficulty breathing, and also present a fire / explosion risk. As such mechanical dispersion is not considered a suitable response for these scenarios
Chemical dispersion – surface application	N/A	N/A	MDO is not a persistent hydrocarbon and has high natural spreading, dispersion and evaporation rates in the marine environment. Dispersant application has a low probability of being effective in increasing the dispersal rate of MDO and would introduce more chemicals to the marine environment. The benefits of applying chemical dispersant do not significantly outweigh the potential environmental risks/ impacts and therefore this response option is not considered suitable.
Containment and recovery	N/A	N/A	Containment and recovery is unlikely to be effective in either scenario. This is due to the hydrocarbon type and the scenarios being in open ocean where MDO forms a thin film and weathers rapidly making recovery via skimmers difficult and ineffective.

Response Option	Scenario 1 – Pipelay Vessel Collision – Fuel Tank Rupture (700 m^3 MDO)	Scenario 2 – Bunkering Incident (10 m^3 MDO)	NEBA Summary
Protection and deflection	N/A	N/A	Modelling indicates low probability of shoreline contact. Contact exposure levels are also well below thresholds that would cause significant impact in most circumstances. The exposed nature of the shorelines and typical metocean conditions (large tidal range and associated strong currents) means that shoreline protection and deflection is unlikely to be effective along much of the shoreline. Shoreline protection and deflection activities involve mobilising personnel and equipment to remote coastal environments, which can result in physical disturbance to intertidal and shoreline habitats. Given the volumes and area of shoreline predicted to be impacted, leaving the product to degrade naturally would cause less harm than active methods of protection and deflection. The remote environment of the Tiwi Islands coastlines also present a range of safety challenges, such as • Remote working location; • Exposure to elements – tropical environment; • Dangerous wildlife – feral pigs and saltwater crocodiles; and • Lack of transport infrastructure – very difficult to access sites by land. The benefits of conducting this response option do not significantly outweigh the potential environmental and safety risks/ impacts associated with its implementation. Therefore, shoreline protection and deflection is not considered a suitable response option.

Response Option	Scenario 1 – Pipelay Vessel Collision – Fuel Tank Rupture (700 m^3 MDO)	Scenario 2 – Bunkering Incident (10 m^3 MDO)	NEBA Summary
Shoreline clean-up	N/A	N/A	Modelling indicates low probability of shoreline contact. Contact exposure levels are also well below thresholds that would cause significant impact in most circumstances. Shoreline clean-up activities involve mobilising personnel and equipment to remote coastal environments, which can result in physical disturbance to intertidal and shoreline habitats. Given the small volumes and area of shoreline predicted to be impacted, leaving the product to degrade naturally would cause less harm than active methods of clean-up The remote environment of the Tiwi Islands coastlines presents a range of safety challenges, such as • Remote working location; • Exposure to elements – tropical environment; • Dangerous wildlife – feral pigs and saltwater crocodiles; and • Lack of transport infrastructure – very difficult to access sites by land. The benefits of conducting this response option are not considered to significantly outweigh the potential environmental and safety risks/ impacts associated with its implementation. Therefore, shoreline clean-up is not considered a suitable response option.

N/A - Response option excluded after NEBA assessment

8 IMPLEMENTING RESPONSE OPTIONS

AMSA is Control Agency for vessel-based spills in Commonwealth waters and will decide whether to initiate a response in the event of a vessel-based spill. In all circumstances, the pipelay vessel master is responsible for implementing source control arrangements detailed in the vessel-specific SOPEP and/or ERP. ConocoPhillips will provide support for delivery of response activities, including implementation of the following response options under AMSA's direction.

The pipelay vessel is defined as a petroleum facility under the OPGGS Act when laying the pipeline. Hence, as the titleholder, ConocoPhillips is the Control Agency for any spills from the pipelay vessel when it is laying the GEP.

8.1 Monitor and Evaluate

Monitor and evaluate involves the collection and evaluation of information to provide and maintain situational awareness in the event of a spill. This response option includes fate and weathering modelling, trajectory modelling, satellite surveillance and spill tracking via use of buoys and field observations.

Monitor and evaluate activities should be conducted throughout the spill response, as it provides the IMT with ongoing information on sensitive receptors at risk of impact from the spill and the effectiveness of spill response operations. This information should be used by the IMT when updating response (operational) NEBAs and in the development of IAPs.

Monitor and evaluate can include one or more of the following tactics:

- Deployment of tracking buoy(s) – requires a buoy to be deployed to the water at the leading edge of the spill to track the movement of the spill
- Fate and weathering modelling – uses computer modelling (e.g. ADIOS2) to estimate the weathering of an oil spill
- Oil spill trajectory modelling – uses computer modelling (e.g. SIMAP) to estimate the movement, fate and weathering of spills
- Visual observation (via aerial and/or vessel surveillance) – requires trained observers to identify and characterise spills. Survey platforms typically include aircraft and/or vessels. Is also used to ground truth oil spill trajectory modelling and monitor the effectiveness of response options
- Satellite surveillance and data capture – uses satellite technology to identify and track oil spills.

The process for selecting which tactic to apply is shown in **Figure 8-1**. **Table 8-1** provides guidance to the ERT and IMT on tasks and responsibilities that should be considered when implementing this response option.

Note: these are provided as a guide only. The Emergency Commander and/or Incident Commander are ultimately responsible for the implementation of the response and may therefore determine that some tasks be varied, should not be undertaken or should be reassigned.

Information on resources, implementation times and termination criteria for this option are shown in **Table 8-2**. Environmental Performance Outcomes, Standards and Measurement Criteria are listed in **Table 8-3**.

Limitation/s: *Surveillance activities should not be deployed in areas where the hydrocarbon release potentially poses a safety hazard to response personnel*

Termination criteria: *The response will be terminated when either a silvery-grey sheen (as defined by the Bonn Agreement Oil Appearance Code 1 – Sheen) is no longer evident to observers from the release area or when the spill response is terminated. This decision will be made by the control agency.*

Figure 8-1: Decision Guide for Monitor and Evaluate

Table 8-1: Monitor and Evaluate Implementation Guide

Responsibility	Task	Consideration/s	Complete
Fate and Weathering Modelling (if selected)			
IMT	Conduct hydrocarbon distribution, fate and weathering assessment using Automated Data Inquiry for Oil Spills (ADIOS2) using information available on oil type in **Attachment A - Hydrocarbon Characteristics, Weathering Properties and Modelling Results** of this OPEP		☐
Tracking Buoy (if selected)			
ERT	Use available vessel to deploy tracking buoy as close as possible to spill location (vessel safety is priority)	Tracking buoy available on the vessel	☐
IMT	Verify deployment of tracking buoy using tracking buoy deployment guideline	Tracking buoy login details and deployment guideline available in the IMT EUL folder.	☐
IMT	Use tracking buoy data to maintain situational awareness	Data tracked online and fed into spill models and IMT situational awareness boards	☐
Trajectory Modelling (if selected)			
IMT	Call RPS Duty Manager to execute service contract and initiate trajectory modelling. Request supply chain unit leader to execute hydrocarbon modelling provider service contract	Refer to Emergency Contacts Directory for contact details Potentially inaccurate modelling outputs require ground truthing by surveillance activities conducted during the course of operational monitoring	☐
IMT	Complete and submit the hydrocarbon spill modelling request form to RPS.	Modelling to be undertaken within 3 hours of the request sent to RPS, then every operational day during the spill response or, if additional response options are employed, to identify possible changes to trajectory etc. Results from surveillance activities, tracking buoys and/or satellite-derived observations and data derived from hydrocarbon assays of the source hydrocarbon or from other reservoirs in the region that may be available should be used as input data to improve model accuracy Form available in the IMT EUL folder.	☐
Satellite Surveillance (if selected)			
IMT	Notify AMOSC Duty Officer to request initiation of satellite services	Refer to Emergency Contacts Directory (request for AMOSC support must be approved by Incident Commander)	☐

Responsibility	Task	Consideration/s	Complete
IMT	Combine satellite data with optical imagery (aerial surveillance, vessel-based observations) to mitigate issues of angle of insolation, thick cloud cover and night	Satellite derived data can be used to broaden aerial survey data in terms of both spatial and temporal scale and provide images	☐
Aerial Surveillance (if selected)			
IMT	Confirm availability of aerial surveillance platform	If aviation asset available at spill location, utilise where possible to gather as much information about the spill If aviation asset not available at spill location IMT is to seek available resources through existing contractual arrangements. Aerial platform should be capable of providing the following: • immediate accessibility from a Darwin based airport • capability to fly at 150 feet • provision of aircraft crew for 1 x aircraft and space for at least one trained aerial observer	☐
IMT	Mobilise aircraft and trained observers to the spill location to undertake surveillance activities	Trained observers should be familiar with the BONN Agreement Aerial Operations Handbook (Part III) (Bonn Agreement 2016). An Aerial Surveillance Observation Log is provided in **Attachment C – Aerial Surveillance Observation Log** of the Handbook. The following data should be obtained during surveillance activities. • name of observer, date, time, aircraft type, speed and altitude of aircraft • location of slick or plume (global positioning system (GPS) positions) • spill source and access • size of the spill, including length, width, volume and percentages of cover of the slick or plume • visual appearance of the slick (e.g. colour, emulsification) • edge description (clear or blurred) • general description (windrows, patches etc.) • wildlife, habitat or other sensitive receptors observed • information on any response activities observed • basic metocean conditions (e.g. sea state, wind, current) • photographic/video images	☐

Responsibility	Task	Consideration/s	Complete
ERT	All records to be relayed to ConocoPhillips IMT when aircraft returns from observation flight	Visual observations from aircraft have inherent subjectivity due to the effect of the angle of insolation on the surface of the ocean. Optical techniques are also dependent on cloud cover and daylight. Where possible, a verbal report via radio/telephone en-route providing relevant information should be considered if the aircraft has long transits from the spill location to base	☐
Vessel Surveillance (if selected)			
ERT	Vessel Master to provide IMT initial report on estimated spill volumes and movement based on visual observation (if possible)	Preliminary observations are intended to provide initial projections of spill trajectory and scale prior to more detailed modelling and surveillance. These observations should be immediately verified by more detailed surveillance. The following data should be obtained during surveillance activities: • name of observer, date, time, vessel type, speed of vessel • location of slick or plume (GPS positions) • spill source and access • visual appearance of the slick (e.g. colour, emulsification) • quantity of hydrocarbons on surface and how this was calculated • wildlife, habitat or other sensitive receptors observed • information on any response activities observed • basic metocean conditions (e.g. sea state, wind, current) • photographic/video images	☐
General			
ERT	Record relevant data e.g. equipment used, time deployed, weather conditions, Job Safety Analysis (JSA) for all tasks		☐
ERT	Hold pre-mobilisation survey team meeting, including communication of field survey schedules (provision for field personnel rotation)		☐
IMT	Obtain weather and tidal information from the Bureau of Metrology and on-scene observers		☐
IMT	Assemble competent field team(s) (if required), including required personal protective equipment (PPE). Arrange any required inductions and/or permits		☐

Responsibility	Task	Consideration/s	Complete
IMT	Arrange transportation (e.g. flights, vehicles), accommodation and food/equipment for field teams		☐
IMT	Activate Geographic Information Systems (GIS) personnel to develop maps that can overlay surveillance data to enhance situational awareness of the spill		☐
IMT	Review fate and weathering, tracking buoy, oil spill modelling data and satellite data with field surveillance data (aerial and vessel surveillance) to validate spill fate and trajectory	Use available data to conduct response (operational) NEBA and confirm that pre-identified response options are appropriate	☐
IMT	Use monitor and evaluate data to periodically reassess the spill and modify the response (through the IAP), as required		☐
IMT	Review OSMP to determine which operational and/or scientific monitoring initiation criteria have been reached, and activate OSMP personnel to implement relevant monitoring programs	Situational awareness data will be used by the IMT to help determine response effectiveness; operational monitoring teams to direct monitoring; and by the scientific monitoring teams to prioritise the sampling areas for impact assessment	☐

Table 8-2: Monitor and Evaluate Resource Guide

Tactic	Resources Available	Service Providers	Implementation Timeframe	Termination Criteria
Fate and weathering modelling	IMT Environment Unit members utilise ADIOS2 Programs installed on IMT computers	N/A	Within 2 hours of IMT activation	The response will be terminated when either a silvery-grey sheen (as defined by Bonn Agreement Oil Appearance Code 1- Sheen) is no longer evident to observers from the release area or when the spill response is terminated. This decision will be made by the control agency
Tracking buoy	Tracking buoys available onboard pipelay vessel	AMOSC (additional buoys)	Immediately available in field onboard vessels. 24 days for additional tracking buoys (if required) from AMOSC, Geelong	
Trajectory modelling	Spill response modelling software provided by RPS Modelling staff provided by RPS	RPS	Within 3 hours of request being sent to RPS	
Satellite surveillance	Satellite data from supplier sourced through AMOSC subscription (OSRL subscription available as secondary option)	AMOSC, OSRL	Data available within 24 hours, then every 6 to 24 hours thereafter depending on satellite positions.	
Aerial surveillance	1 x aircraft sourced through existing contracts with aviation service providers. Aerial surveillance observers using national pool of trained/experienced observers – sourced through AMOSC or AMSA	AMOSC, AMSA	2 days for national pool trained/experienced aerial observers 4 hours for aircraft to be ready for mobilisation	
Vessel surveillance	1 x vessel crew supplied by ConocoPhillips or vessel contractor	Marine vessel contractors	Within 2 hours for vessels situated close to the spill source (if available)	

Table 8-3: Environmental Performance – Monitor and Evaluate

Environmental Performance Outcome	Performance Standard	Measurement Criteria
EPO IS 4 Maintain situational awareness and inform IMT decision making using monitor and evaluate tactics	***EPS IS 4.1*** IMT to undertake fate and weathering modelling to estimate the current and projected weathering of the spill	***MC IS 4.1.1*** Records demonstrate fate and weathering modelling (ADIOS2) undertaken within 2 hours of IMT activation
	EPS IS 4.2 IMT to select appropriate monitor and evaluate tactics based on the nature and scale of the spill.	***MC IS 4.2.1*** Records demonstrate monitor and evaluate response option decision-making by the IMT are appropriate for the nature and scale of the spill.
	EPS IS 4.3 Use monitor and evaluate data to periodically reassess the spill and modify the response, using the IAP	***MC IS 4.3.1*** Records demonstrate monitor and evaluate data incorporated into the IAP
	EPS IS 4.4 ConocoPhillips to maintain contracts with third-party providers to provide access to suitably qualified and competent personnel and equipment to assist in the implementation of monitor and evaluate tactics	***MC IS 4.4.1*** Records demonstrate that ConocoPhillips maintains contracts with third-party providers to provide access to suitably qualified and competent personnel and equipment to assist in the implementation of monitor and evaluate tactics

8.2 Offshore Oiled Wildlife Response

Oiled wildlife response (OWR) includes wildlife hazing, pre-emptive capture and the capture, cleaning, treatment, and rehabilitation of animals that have been oiled. In addition, it includes the collection, post-mortem examination, and disposal of deceased animals that have succumbed to the effects of oiling. For this activity, it is considered to be a secondary response option, which would only be triggered if monitor and evaluate activities and/or operational monitoring activities indicate wildlife were at risk of contact/have been contacted by the spill.

ConocoPhillips has an Oiled Wildlife Response - Implementation Plan (ALL/HSE/PLN/025) which aligns to the current Commonwealth and State/Territory arrangements for OWR and provides operational guidance to the IMT for the protection of wildlife during a hydrocarbon spill event. The Plan provides the following detail:

- Overview of the impacts of oil on fauna groups
- Advice on suitable tactics to protect and treat fauna groups
- OWR arrangements in Commonwealth and State/Territory waters
- Structure of the Oiled Wildlife Branch and detail on how this should be integrated into the ConocoPhillips IMT

Roles, responsibilities and actions for key oiled wildlife response personnel during each stage of the oiled wildlife response effort (including activation of the oiled wildlife response through to rehabilitation and termination of the response)

Implementation of the OWR-Implementation Plan will follow the stages shown in **Figure 8-2** (derived from the Western Australian OWR Plan (DPAW, 2014)). Implementation of stages will occur as appropriate to the nature and scale of the incident. For example, if only a small number of wildlife are affected by a spill, there would be no need to establish an OWR treatment facility, given that small numbers of animals are likely to be cared for utilising existing local wildlife care networks.

Table 8-4 outlines the initial responsibilities and tasks for the ERT and IMT for OWR for the first few stages of the response. Note: these are provided as a guide only and the IMT should refer to the OWR - Implementation Plan (ALL/HSE/PLN/025) if monitor and evaluate activities and/or operational monitoring activities indicate offshore wildlife are at risk of contact/have been contacted by the spill. The Emergency Commander and/or Incident Commander are ultimately responsible for the implementation of the response and may therefore determine that some tasks be varied, should not be undertaken or should be reassigned.

Information on resources, implementation times and termination criteria for this option are shown in **Table 8-5**. Environmental Performance Outcomes, Standards and Measurement Criteria are listed in **Table 8-6**.

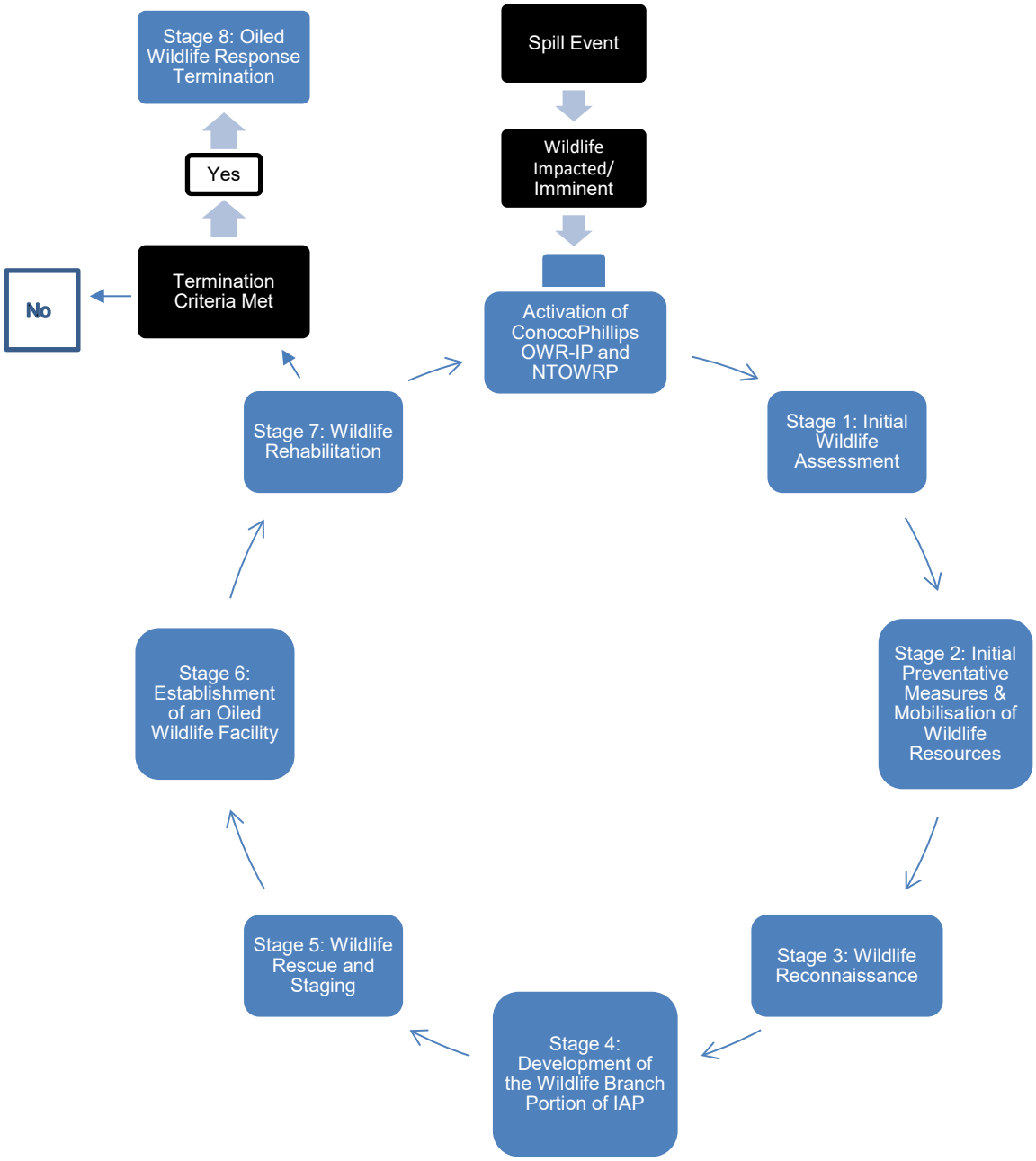

Figure 8-2: Stages of an Oiled Wildlife Response

Table 8-4: Wildlife Response Implementation Guide

Responsibility	Task	Consideration/s	Complete
Situational Awareness			
ERT	Vessel Master to report all wildlife sightings (including those contacted with hydrocarbons or at risk of contact) near the spill source to the IMT within 2 hours of detection		☐
ERT	Personnel conducting aerial surveillance activities (as part of monitor and evaluate and/or operational monitoring activities) shall report wildlife sightings in or near the spill trajectory (including those contacted with hydrocarbons or at risk of contact) and report them to the IMT within 2 hours of detection	Many species are not visible due to the lack of time they spend on the ocean surface	☐
Activate Oiled Wildlife Response (tasks below provide a guide only. Refer to OWR - Implementation Plan (ALL/HSE/PLN/025) for additional guidance)			
IMT	If wildlife are sighted and are at risk of contact (or have been contacted), initiate oiled wildlife response	Record all reports of wildlife potentially impacted and impacted by spill. Record reports on: • Location • Access • Number • Species • Condition of impacted animals (if available)	☐
IMT	Obtain approval from Incident Commander to initiate an OWR and notify the relevant State/Territory Agency/Authority (as per **Table 6-1** of this OPEP)		☐
IMT	Obtain approval from Incident Commander to mobilise AMOSC Technical Officer / OSRL Wildlife Response Advisor as per **Section 5.4** of this OPEP		☐

Responsibility	Task	Consideration/s	Complete
Initial wildlife assessment (tasks below provide a guide only. Refer to OWR - Implementation Plan (ALL/HSE/PLN/025) for additional guidance)			
IMT	Confirm wildlife reports directly with field personnel and obtain any additional information as required	Obtain all current wildlife reports from the field (e.g. from opportunistic/incidental observations from other monitoring activities (e.g. operational monitoring and monitor and evaluate activities) Compile known existing wildlife data: • OMP03: Pre-emptive assessment of Sensitive Receptors at Risk • Relevant OWR regional plan • Relevant EPs • OPP • Oil Spill Response Atlas • Birdlife Australia Review oil spill trajectory modelling	☐
IMT	Ensure data from initial assessments and reports are incorporated into Operational NEBA	Oiled wildlife response tactics can cause additional stress and mortality on individuals than oil pollution alone. ConocoPhillips will determine via an Operational NEBA whether capture and cleaning of oiled wildlife will result in a net environmental benefit	☐
IMT	Determine initial OWR Response Level (1-6), based on the determined risk areas and likely number of oiled wildlife	Refer to the OWR - Implementation Plan (ALL/HSE/PLN/025) for guidance on OWR Response Level classification	☐
IMT	Obtain approval from Incident Commander for the activation and mobilisation of OWR equipment		☐
IMT	Wildlife Specialist and Environment Unit Lead to liaise and assess wildlife assets at risk and develop recommendations for the resource requirements for Stage 2 of the response (Initial Preventative Measures and Mobilisation of Wildlife Resources)		☐
General			
ERT	Record relevant data e.g. equipment used, time deployed, weather conditions, Job Safety Analysis (JSA) for all tasks		☐
ERT	Hold pre-mobilisation survey team meeting, including communication of field survey schedules (provision for field personnel rotation)		☐

Responsibility	Task	Consideration/s	Complete
IMT	Assemble trained personnel (if required), including required personal protective equipment (PPE). Arrange any required inductions and/or permits		☐
IMT	Arrange transportation (e.g. flights, vehicles), accommodation and food/equipment for survey teams		☐
IMT	Prepare a communications plan for field personnel		☐

Table 8-5: Wildlife Response Resource Guide

Tactic/Activity	Resources Required and Available	Service Providers	Implementation Timeframe	Termination Criteria
Situational awareness and ongoing reconnaissance	1 x aircraft sourced through existing contracts with aviation service providers Aerial surveillance observers using national pool of trained/experienced observers – sourced through AMOSC or AMSA	AMOSC Aviation service providers	2 days for national pool trained/experienced aerial observers 4 hours for aircraft to be ready for mobilisation	Agreement is reached with the jurisdictional authority relevant to the spill to terminate the response. No wildlife observed in the trajectory of the spill
Activate oiled wildlife response and initial assessment	EUL Wildlife Specialist (in Planning Section)		< 1 day from reports of imminent wildlife impact or actual impact	
Wildlife hazing	1 x vessel and crew supplied by vessel contractor Hazing equipment (vessel fire water monitors vessel horns) – Vessel Contractor Contract with AMOSC to provide trained Oiled Wildlife Branch Director, Oiled Wildlife Responders (including mutual aid – via AMOSC) National Response Team trained Oiled Wildlife Responders	AMOSC Marine vessel contractors	< 3 days for support vessel on site, if available 3 days for ConocoPhillips marine dept. approved vessel sourced in Darwin 2 days for Industry Oiled Wildlife Advisor via AMOSC	
Pre-emptive capture and post-contact response	1 x vessel and crew supplied by vessel contractor One AMOSC owned OWR container positioned in Geelong One AMOSC owned OWR container positioned in Fremantle 4 x National Plan OWR AMSA owned containers in Dampier, Darwin, Devonport and Townsville available through National Plan request OSRL OWR equipment (Search, Rescue and Medical Kit; and Cleaning and Rehabilitation Kit) Contract with AMOSC to provide trained Oiled Wildlife Branch Director and Oiled Wildlife Responders (including mutual aid – via AMOSC) National Response Team trained Oiled Wildlife Responders	AMOSC (Includes contract with DwyerTech to assist with set-up of OWR containers) OSRL Marine vessel contractors	< 3 days for support vessel on site, if available 3 days for ConocoPhillips marine dept. approved vessel sourced in Darwin 2 days for Industry Oiled Wildlife Advisor via AMOSC 4 days for equipment to be mobilised to Darwin	

Table 8-6: Environmental Performance – Wildlife Response

Environmental Performance Outcome	Performance Standard	Measurement Criteria
EPO IS 5 Locate, identify and apply suitable response tactics to wildlife to prevent them from being contacted by oil or treat them if already contacted by oil (if deemed to result in a net environmental benefit)[8]	***EPS IS 5.1*** Establish Wildlife Branch if monitor and evaluate activities and/or operational monitoring have confirmed that wildlife are at risk of being contacted or have already been contacted by the spill	***MC IS 5.1.1*** Records demonstrate that Wildlife Branch established if wildlife impacts confirmed via monitor and evaluate or operational monitoring activities
	EPS IS 5.2 Conduct oiled wildlife operations in accordance with ConocoPhillips' OWR – Implementation Plan (ALL/HSE/PLN/025)	***EPS 5.2.1*** Records demonstrate that oiled wildlife operations were conducted in accordance with ConocoPhillips' OWR – Implementation Plan (ALL/HSE/PLN/025)

[8] Capture and cleaning of oiled wildlife may result in additional stress and mortality than oil pollution alone. ConocoPhillips will determine during implementation of the OWR as to whether capture and cleaning of oiled wildlife will result in a net environmental benefit. This will be considered during the operational NEBA.

9 OPERATIONAL AND SCIENTIFIC MONITORING

ConocoPhillips' ABU OSMP (ALL/HSE/PLN/032), describes a program of monitoring oil pollution that will be adopted in the event of a hydrocarbon spill incident (tier 2 or 3) to marine or coastal waters. The OSMP is structured so that it can provide a flexible framework that can be adapted to individual spill incidents. A series of Operational Monitoring Plans (OMPs) and Scientific Monitoring Plans (SMPs) sit under this framework and provide detail on the initiation criteria, termination criteria and guidance on objectives, monitoring design, standard operating procedures, data management and reporting.

These plans are listed in **Table 9-1** and consider the environmental and socio-economic receptors found within the EMBA. The plans will only be implemented when individual initiation criteria are met, as specified in the individual OMPs and SMPs (ALL/HSE/PLN/032).

A summary of the objectives, initiation and termination criteria are provided in Appendix F of the Barossa GEP Installation EP (BAA-100 0329).

Operational monitoring collects information about the spill and associated response activities to aid situational awareness, planning and decision making for executing spill response activities. Operational monitoring data must be provided to the IMT in a timely manner to ensure situational awareness is current so that it can inform decision making on protection priorities and response options. In the event of a spill, the ConocoPhillips Incident Commander, in consultation with the OSC, the OSMP Implementation Lead and the OSMP Service Providers, will coordinate and manage OSMP activities.

Environmental Performance Outcomes, Standards and Measurement Criteria relevant to operational and scientific monitoring are listed in **Table 9-2**.

Table 9-1: ConocoPhillips OMPs and SMPs

Plan	Title
OMPs	
OMP01	Oil properties and weathering behaviour at sea
OMP02	Pre-emptive assessment of sensitive receptors at risk
OMP03	Shoreline clean-up assessment team
OMP04	Water quality assessment
OMP05	Sediment quality assessment
OMP06	Marine fauna assessment
OMP07	Air quality modelling (responder health and safety)
SMPs	
SMP01	Water quality impact assessment
SMP02	Sediment quality impact assessment
SMP03	Intertidal and coastal habitat assessment
SMP04	Benthic habitat assessment
SMP05	Seabird and shorebird assessment
SMP06	Marine mega-fauna assessment
SMP07	Demersal fish assessment
SMP08	Fisheries Assessment

Table 9-2: Environmental Performance – Operational and Scientific Monitoring

Environmental Performance Outcome	Performance Standard	Measurement Criteria
EPO IS 6 Implement relevant OMPs and SMPs	***EPS IS 6.1*** IMT will ensure operational and scientific monitoring initiation criteria are reviewed during the initial IAP and subsequent IAPs, and if any criteria are met, the relevant OMPs and/or SMPs will be activated.	***MC IS 6.1.1*** Records demonstrate that the IMT reviewed operational and scientific monitoring initiation criteria during the initial and subsequent IAPs, and when criteria were met, the relevant OMP and/or SMP was activated
	EPS IS 6.2 ConocoPhillips maintains the capability and capacity to deliver the OSMP through: • OSMP Implementation Plan describes the process for implementing the OSMP • Individual OMP and SMP methodology describe data acquisition techniques, personnel and equipment required to conduct OMPs and SMPs • ConocoPhillips maintains access to OSMP resources through contracts with service and equipment providers listed in **Attachment B – Response Preparedness, Resources and Support Summary**.	***MC IS 6.2.1*** Records demonstrate OSMP carried out in accordance with the following: • OSMP Implementation Plan • Individual OMP and SMP methodologies • Service provider and equipment provider contracts in place and maintained in accordance with **Attachment B – Response Preparedness, Resources and Support Summary**.

10 WASTE MANAGEMENT

The implementation of some spill response options will collect and generate waste that will require management, storage, transport and disposal, and may consist of solid and liquid waste.

Waste management aims to ensure wastes are handled and disposed of safely and efficiently and prevent contamination of unaffected areas.

The type and amount of waste generated during a spill response will vary depending on the spill type/characteristics, volume released, and response options implemented. To account for this potential variability, waste management (including handling and capacity) needs to be scalable to allow a continuous response to be maintained.

The potential types and total volumes of waste anticipated for each response option are provided in **Table 10-1**.

Table 10-1: Waste Types and Volumes Anticipated During a Spill Response

Spill Response Option	Oily Liquid Waste	Solid Oily Waste	PPE and Consumables
Source control	None	None	< 1 m^3
Monitor and evaluate	None	None	< 1 m^3/day
Wildlife response - hazing	None	None	< 1 m^3/day
Wildlife response – post contact	< 1 m^3/day	< 1 m^3/day	< 2 m^3/day

Table 10-2 summaries the waste storage, treatment and disposal options available to manage waste associated with the spill response options. The capacity is considered appropriate and acceptable to manage the maximum waste volumes that may be produced through implementation of the various response options.

Based on the credible spill scenarios modelled, ConocoPhillips do not anticipate that large volumes of waste will be generated. As soon as the details of an actual spill are available, waste management arrangements to allow a continuous response to be maintained would be reviewed.

Any waste products will be transported from the response location to Darwin Port. Waste will be transported from Darwin Port to licensed waste disposal facilities by a dedicated waste contractor. ConocoPhillips has existing service agreements with Veolia Waste Management (primary waste manager) which include the provision of waste management services during a spill response. Transport to the licensed waste management facilities would be undertaken via controlled-waste-licensed vehicles and in accordance with the NT *Waste Management and Pollution Control Act* (NT).

Table 10-2: Spill Response Waste Storage, Treatment and Disposal Options

Waste Category	On-site Storage	Treatment/Disposal Option	End Disposal Destination
Solid waste – PPE and consumables (e.g. oily gloves)	Lined skips, oil drums, industrial waste bags, plastic rubbish bags	Recovery (e.g. thermal desorption or fixation process) and recycling Incineration Landfill	Toll Veolia Waste Management
Oiled wildlife response	Industrial waste bags, plastic rubbish bags	Incineration Landfill	

Waste will be managed in accordance with the ConocoPhillips ABU-W Waste Management Plan (ALL/HSE/PLN/004), MARPOL 73/78 (as appropriate to vessel class), relevant Commonwealth and NT legislation, and the contractor waste management plan to dispose of waste generated as a result of spill response options.

Although the ConocoPhillips ABU-W Waste Management Plan (ALL/HSE/PLN/004) does not directly refer to spill response activities, it does provide guidance for the handling and management of waste generated from spill response operations. All waste stored or transferred shall be documented, including details of the volumes and nature of the waste, receiver and destination of the waste.

Should waste management activities be required in environmentally sensitive locations, the impact of the activities will be monitored, and appropriate controls implemented as informed by response (operational) NEBAs.

Environmental Performance Outcomes, Standards and Measurement Criteria are listed in **Table 10-3**.

Table 10-3: Environmental Performance – Waste Management

Environmental Performance Outcome	Performance Standard	Measurement Criteria
EPO IS 7 Collect, manage, transport and dispose of waste produced from response options to minimise secondary contamination of sensitive receptors	***EPS IS 7.1*** Use the ConocoPhillips ABU-W Waste Management Plan as guidance to collect, manage, transport and dispose of waste produced from response options	***MC IS 7.1.1*** Records demonstrate that the ConocoPhillips ABU-W Waste Management Plan was used as guidance to collect, manage, transport and dispose of waste produced from response options
	EPS IS 7.2 Waste management, storage, transport and disposal will comply with relevant legislation, conventions and standards, including: • Relevant NT and Commonwealth Regulations, including: - Marine Order 91 (Marine pollution prevention – oil) (as appropriate for vessel class) - *Waste Management and Pollution Control Act 1998* (NT)	***MC IS 7.2.1*** Records demonstrate waste generated during a hydrocarbon spill response is managed, stored, transported and disposed of in accordance with relevant legislations, conventions and legislation, including: • Marine Order 91 • *Waste Management and Pollution Control Act 1998* (NT)
	EPS IS 7.3 ConocoPhillips to maintain contracts with third-party providers to provide access to suitably qualified and competent personnel and equipment to assist in the implementation of waste management activities	***MC IS 7.3.1*** Records demonstrate that ConocoPhillips maintains contracts with waste management service providers capable of handling the types and volumes of wastes generated.

11 RESPONSE IMPLEMENTATION AND TERMINATION PROCESSES

This Plan addresses the initial and ongoing actions in response to the potential spill scenarios outlined in **Section 7.2**. Although AMSA is the Control Agency for vessel-based spills (excluding the pipelay vessel while laying the GEP), ConocoPhillips may be directed to undertake response activities as part of the response effort and will establish an IMT to coordinate its response.

11.1 Terminating the Response

Terminating the spill response may involve demobilising personnel and equipment from response locations, post-incident reporting, identifying improvement opportunities, reviewing and updating plans and restocking equipment supplies. Scientific monitoring may continue after response operations have ceased and may be used to inform remediation activities.

The decision to terminate response opertaions will be made by the Control Agency, in accordance with the National Plan (AMSA 2019). **Figure 11-1** provides guidance on termination activities.

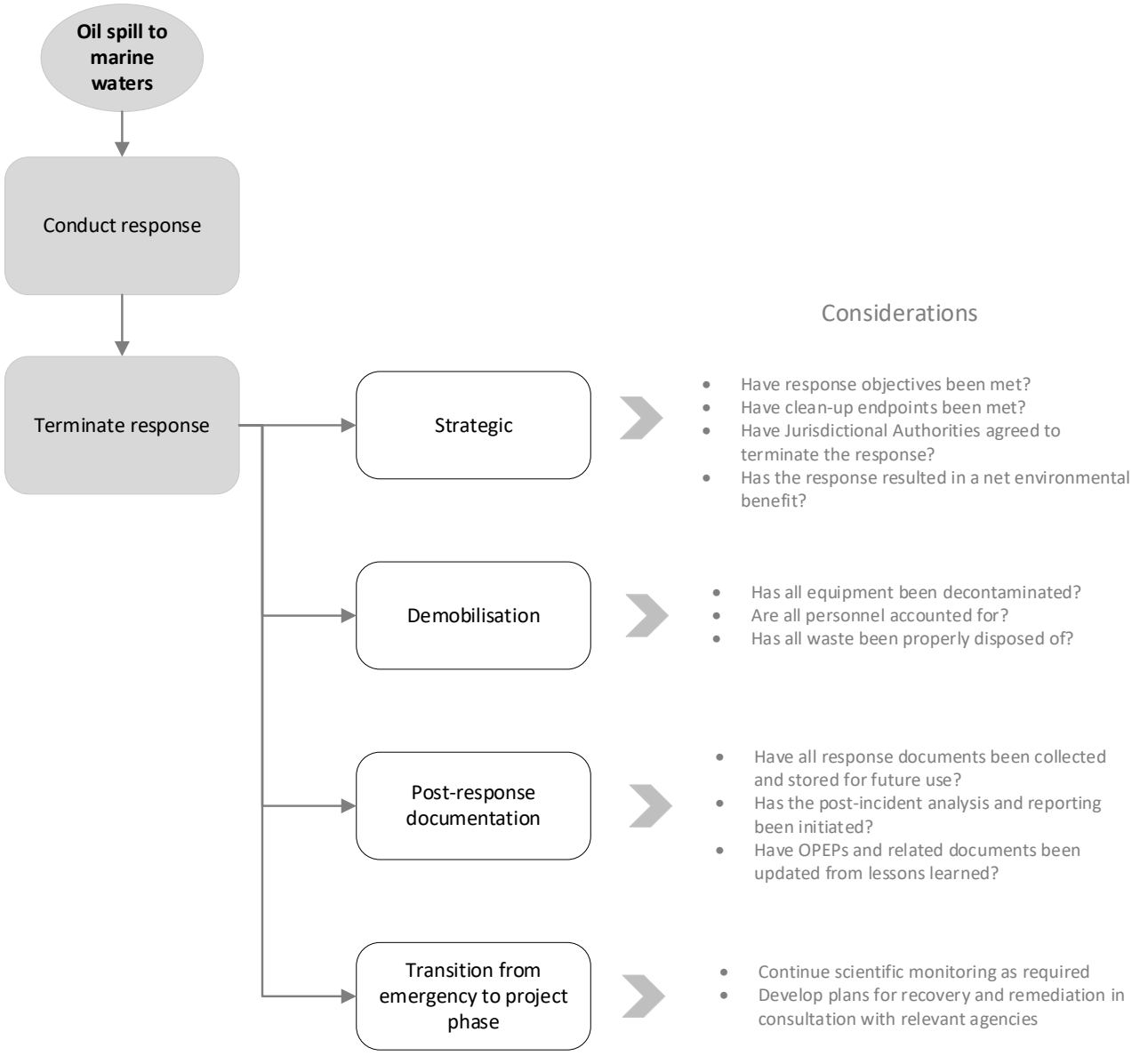

Figure 11-1: Guidance for Response Termination

12 REFERENCES

Australian Marine Oil Spill Centre, 2017. AMOSPlan. Australian Marine Oil Spill Centre, Geelong.

Australian Maritime Safety Authority, 2019. National Plan for Maritime Environmental Emergencies (Edition No. 2019). Australian Maritime Safety Authority, Canberra.

Bonn Agreement, 2016. Guidelines for oil pollution detection, investigation and post flight analysis / evaluation for volume estimation, in: Bonn Agreement Aerial Operations Handbook. Bonn Agreement Secretariat, London.

Department of Parks and Wildlife, Australian Marine Oil Spill Centre, 2014. Western Australian oiled wildlife response plan. Department of Parks and Wildlife, Perth.

Department of Transport Marine Safety, 2014. Northern Territory Oil Spill Contingency Plan. Northern Territory Government, Darwin.

International Tanker Owners Pollution Federation, 2011. Fate of marine oil spills (Technical Information Paper No. 2). International Tanker Owners Pollution Federation Limited, London.

ATTACHMENT A - HYDROCARBON CHARACTERISTICS, WEATHERING PROPERTIES AND MODELLING RESULTS

Marine Diesel Oil

MDO (classified as Group 2 by ITOPF 2011) non-persistent fuel used in the maritime industry.

MDO is a mixture of volatile and persistent hydrocarbons with low viscosity. When released to the marine environment it will spread quickly and thin out to low thickness levels, thereby increasing the rate of evaporation. Physical characteristics of MDO are summarised in **Table A-1**. Due to its chemical composition, up to 60% will generally evaporate over the first two days depending upon the prevailing conditions and spill volume. Approximately 5% is considered “persistent hydrocarbons”, which are unlikely to evaporate and will decay over time.

The MDO also has a strong tendency to entrain into the upper water column (0–10 m) (and consequently reduce evaporative loss) in the presence of moderate winds (> 10 knots) and breaking waves. However, MDO re-surfaces when the conditions calm. It does not form mousse.

Table A-1: MDO characteristics

Hydrocarbon type	Density at 25 °C (kg/m^3)	Viscosity at 25 °C (cP)	Component	Volatile (%)	Semi-volatile (%)	Low volatility (%)	Residual (%)
			BP (ºC)	<180	180–265	265–380	>380
Marine diesel	829	4	% of total	6	35	54	5

Figure A-1 provides the predicted weathering and fates of surface MDO. The graph show that MDO on the sea surface is expected to evaporate rapidly, with > 50% of the spilled hydrocarbon expected to evaporate within 2 days.

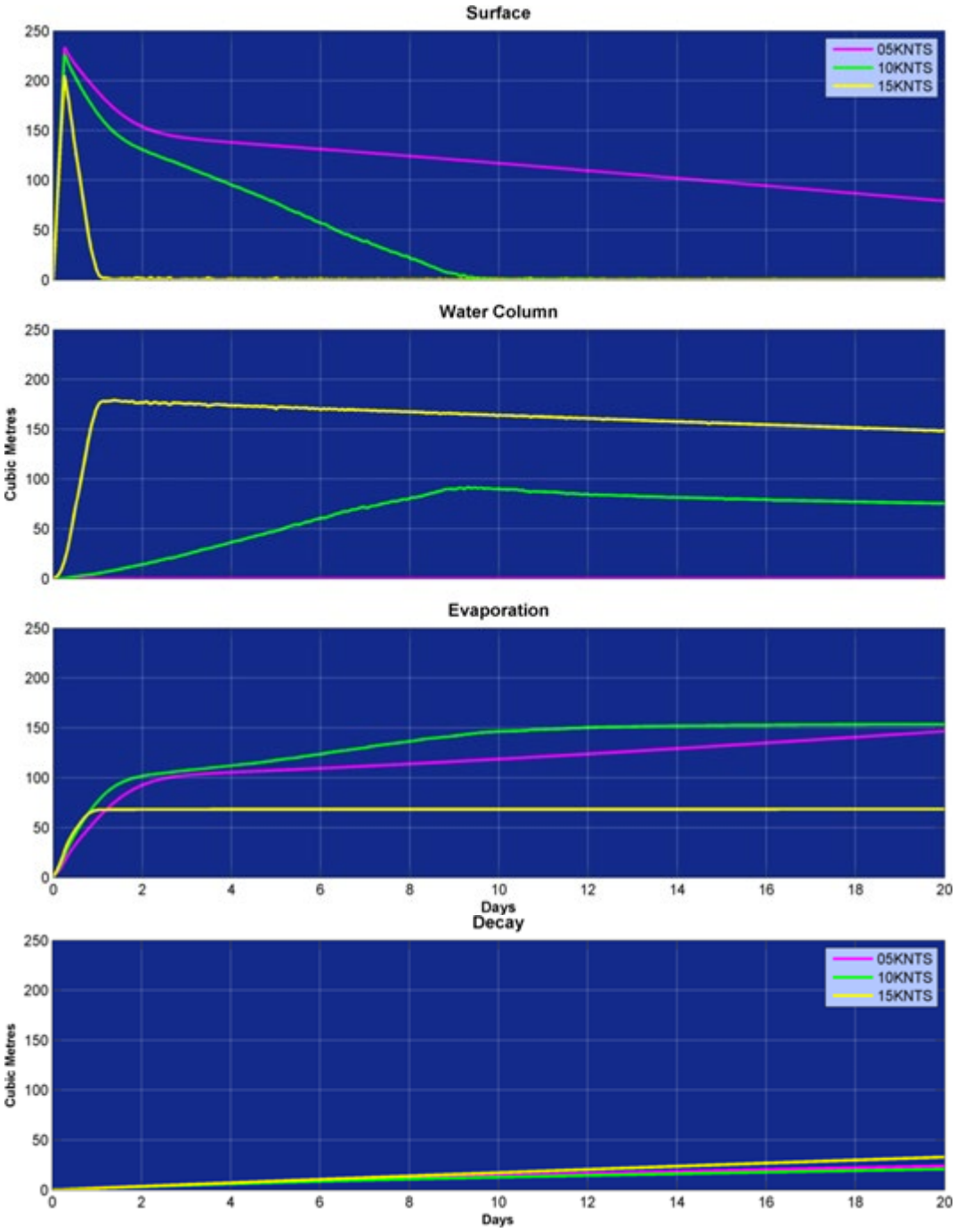

Figure A-1: Predicted weathering and fates of MDO for a 250 m^3 spill

ATTACHMENT B – RESPONSE PREPAREDNESS, RESOURCES AND SUPPORT SUMMARY

ConocoPhillips response preparedness, resources and support arrangements for pipeline activities are outlined in **Table B-1**. Contact details for each organisation are available through the ConocoPhillips Emergency Contacts Directory (ALL/HSE/ER/008) contains the contact numbers for external personnel and facilities. The Emergency Contacts Directory is reviewed and updated every six months.

Table B-1: ConocoPhillips Spill Response Support Summary

Organisation	Relevant Tier	Services Provided	Relevant Plan	Contract Details	Maintenance of Capability
AMOSC	Tier 2 and Tier 3	• Manned 24/7 Duty Officer support; • AMOSC Staff availability – 8 staff provided at best endeavours within 3 hours and guaranteed onsite (terrestrially) within 12 hours as per AMOSC website • Equipment availability per monthly status reporting at; http://amosc.com.au/member-login/ & performance indicators as per AMOSC website • Core Group availability per monthly reporting status at; http://amosc.com.au/member-login/ • Mutual aid for equipment per http://amosc.com.au/member-login/ • Access to the National Plan via AMSA within 1 hour on a 24/7 basis • Access to the Fixed Wing Aerial Dispersant capability within 1 hour on a 24/7 basis • Access to RPS Trajectory Modelling within 60 minutes • 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	AMOSPlan	ConocoPhillips holds a current agreement that has been valid since May 2013 and pays an annual associate company subscription	• Monthly AMOSC Core Group report for personnel availability distributed to member companies monthly • Annual Joint Industry Audit by member companies, including auditing of systems, controls, competencies and equipment stockpiles
	Mobilisation	Refer to **Table 5-2** for activation instructions.			

Organisation	Relevant Tier	Services Provided	Relevant Plan	Contract Details	Maintenance of Capability
OSRL	Tier 2 and Tier 3	Contracted oil spill response equipment and personnel appropriate to the required tier to support response strategy deployment, satellite surveillance and operational monitoring. As a member of OSRL, ConocoPhillips has access to OSRL's full range of equipment[9] and is entitled to 50% of the OSRL global stockpile	N/A	ConocoPhillips holds a current service agreement that has been valid since 2011 and pays an annual subscription	• OSRL conduct an annual self-audit
	Mobilisation	Refer to **Table 5-2** for activation instructions.			
RPS	All Tiers	Spill modelling to determine real-time predictions at the time of the spill. The spill trajectory and probability information is used in planning and implementing response options.	N/A	313169.MSA.AUSW.COPA	RPS maintain records of call outs and time to respond with initial results.
	Mobilisation	ConocoPhillips has an agreement in place with RPS to allow rapid marine hydrocarbon spill modelling capability to be activated at any time during activities, which will be undertaken for any spill greater than Tier 1. AMOSC can also run modelling on behalf of ConocoPhillips, if required, as part of contracting arrangements with RPS. Refer to **Table 5-2** for activation instructions.			
AMSA	Tier 2 or 3	AMSA manage the National Plan and can provide both oil spill response equipment and personnel as appropriate to the required tier.	The National Plan, for Maritime Environmental Emergencies	N/A	AMSA coordinates State and National Plan exercises to test and assess the preparedness of Commonwealth, State and Territory responders under the National Plan.

[9] OSRL's full inventory of equipment can be found at https://www.oilspillresponse.com/globalassets/technical-library/publications-2017/2017-mobilisation-fact-file.pdf

Organisation	Relevant Tier	Services Provided	Relevant Plan	Contract Details	Maintenance of Capability
	Mobilisation	Refer to **Table 5-2** for activation instructions.			
Mermaid Marine	All Tiers	Supply vessels to convey and deploy oil spill equipment.	N/A	309621.VCA.AUSW.COPA MMA Offshore Vessel Operations	ConocoPhillips Australia holds contract for exclusive use and vessels are available 24/7
	Mobilisation	IMT IC to mobilise as per contract arrangements.			
Aerial surveillance contractors	Tier 2 and 3	Aerial logistic support for aerial surveillance and spill assessment.	N/A	Additional logistical support provided by the ConocoPhillips IMT	ConocoPhillips Australia holds contract for exclusive use and aircraft are available 24/7
	Mobilisation	Helicopter aerial surveillance aircraft will be contracted through selected aviation provider. Additional aviation support may be provided through AMSA.			
Waste management contractor	All Tiers	Waste and hazardous waste collection and disposal, including oily water.	ConocoPhillips Waste Management Plan (ALL/HSE/PLN/004)	Veolia Waste Management (primary waste manager) (ConocoPhillipsA.MAA.62230) Toll (ConocoPhillipsA.MAA.38829)	
	Mobilisation	IMT IC to mobilise as per contract arrangements			

Organisation	Relevant Tier	Services Provided	Relevant Plan	Contract Details	Maintenance of Capability
Environmental Service Provider(s)	Tier 2/3	Deliver the activated OMPs and SMPs for the duration of the Project. The services will include operational readiness to enable fast deployment of personnel and resources during a response. The Environmental Service Provider(s) contract and contractual arrangements will be in place prior to the commencement of the petroleum activity.	ABU OSMP (ALL/HSE/PLN/032)	Environmental Service Provider Panel Contractors: Jacobs (COPA.MSA.317582) CDM Smith (COPA.MSA.317581) ERM (COPA.MSA.317580)	Conduct quarterly capability checks of key providers.
	Mobilisation	IMT IC to give direction to the EUL to mobilise as per contract arrangements			

ATTACHMENT C – AERIAL SURVEILLANCE OBSERVATION LOG

Date	Incident	Aircraft Type	Call Sign	Start Time	End Time	Av Altitude/ Air Speed
Wind Speed (kn)	**Wind Direction**	**Visibility (nm)**	**Cloud Base (ft)**	**Sea State**	**Observer Name/s**	**Spill Source**
Survey Start /End Coordinates	**Survey Start Time**	**Survey End Time**	**Time High Tide**	**Time Low Tide**	**Current Speed (nm)**	**Current Direction**
Notes (e.g. wildlife or sensitive receptors observed, any response activities observed):						

Slick Details

Slick	Time local	Slick (Centre or Start)		Slick (End)		Slick Orient Degrees	Oil Slick Length			Oil Slick Width			Area km^2	Coverage %	Oiled area km^2
		LAT N/S	LONG E/W	LAT N/S	LONG E/W		SOG KT	Time seconds	Distance km	SOG KT	Time Seconds	Distance km			
A															
B															
C															
D															
E															

Slick	Oil appearance coverage - %						Minimum volume - m^3	Maximum volume - m^3	Type of detection (etc. visual, IR)	Edge description (clear or blurred)	General description (windrows/patches)	The Bonn Agreement Oil Appearance Code (BAOAC)			
	1	2	3	4	5	other						No	Oil appearance	Min. Volume m^3 / km^2	Max. Volume m^3 / km^2
A															
B												1	Sheen	0.04	0.30
C												2	Rainbow	0.30	5.00
D												3	Metallic	5.00	50.0
E												4	Discontinuous true colour	50.0	200
												5	True colour	200	>200

NOTE: Ground Speed (SOG) is the speed of the aircraft relative to the ground (sea) measured in knots (kt). One knot is one nautical mile (nm) per hour. 1 kt = 1 nm per hour = 1.85 Kilometres (km) per hour = 0.03 km (31m) per minute = 0.0005 km per second