



Minerva Decommissioning and Field Management Environment Plan Minerva Decommissioning

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Woodside Minerva Decommissioning and Field Management Environment Plan

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Terms and Acronyms

Term	Description
"	inch
μ	Micron
ABF	Australian Border Force
AE	Asphalt Enamel
AFMA	Australian Fisheries Management Authority
AHO	Australian Hydrographic Office
AHTS	Anchor Handling Tug Supply (vessel)
AIS	Automatic identification system
ALARP	As low as reasonably practicable
AMOSOC	Australian Maritime Oil Spill Centre
AMOSPlan	Australian Industry Cooperative Spill Response Arrangements
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Association
ANZECC	Australian & New Zealand Environment and Conservation Council
API	American Petroleum Institute
APPEA	Australian Petroleum Production and Exploration Association
AS	Australian Standard
ASBTIA	Australian Southern Bluefin Tuna Industry Association
ASTM	American Society for Testing and Materials
AUV	Autonomous Underwater Vehicle
Bass Strait CZSF	Bass Strait Central Zone Scallop Fishery
bbl/d	Barrels per day
bpm	Barrel per minute
BACI	Before-After-Control-Impact
BHP Petroleum	BHP Petroleum (Victoria) Pty Ltd
BIA	Biologically Important Area
BOP	Blowout preventer

Term	Description
BSSIA	Bass Strait Scallop Industry Association
BTEX	Benzene, Toluene, Ethyl benzene, Xylene
BWM	ballast water management
BWMC	ballast water management certificate
BWMP	ballast water management plan
BWMS	Ballast water management system
BWTS	ballast water treatment system
CAMBA	Agreement between the Government of Australia and the Government of the People's Republic of China for the protection of Migratory Birds and their Environment. (China Australia Migratory Birds Agreement)
CBTA	Competency-based training and assessment
CEFAS	Centre for Environment Fisheries & Aquaculture Science
CEM	Crisis and Emergency Management
CHARM	Chemical Hazard and Risk Management
CH ₄	Methane
CIMT	Corporate Incident Management Team
CMP	Conservation Management Plan
CMT	Crisis Management Team
CO ₂	Carbon dioxide
CoA	Commonwealth of Australia
CP	Cathodic Protection
CRG	Community Reference Group
CSC	Corangamite Shire Council
CTS	Commonwealth Trawl Sector
Cwlth	Commonwealth
CW	Commonwealth Waters
DAWE	Department of Agriculture, Water and the Environment

Woodside Minerva Decommissioning and Field Management Environment Plan

Term	Description
DAWR	Department of Agriculture, Water and Resources
DCCEEW	Department of Climate Change, Energy, Environment and Water
DEECA	Department of Energy, Environment, and Climate Action (Victoria)
DELWP	Department of Environment, Land, Water and Planning
DEWHA	Department of the Environment, Water, Heritage and the Arts
DFT	Dry Film Thickness
DJSIR	Department of Jobs, Skills, Industry and Regions (Victoria)
DISER	Department of Industry, Science, Energy and Resources
DNP	Director of National Parks
DoD	Department of Defence
DoE	Department of Environment
DoEE	Department of Environment and Energy
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DSV	Drive Support Vessel
DTP	Department of Transport and Planning (Victoria)
DP	Dynamic positioning
DVR	Daily Vessel Report
DWH	Deepwater Horizon
EERM	Environmental Emergency Response Manual
EES	Environment Effects Statement
EEZ	Exclusive Economic Zone
EFL	Electrical flying lead
EHU	electro-hydraulic umbilical
EM	Emergency Management
EMBA	Environment that may be affected
EMT	Emergency Management Team
ENVID	Environment Impact (and risk) Identification

Term	Description
Environment Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023
EP	Environment Plan
EPA	Environmental Protection Authority (Victoria)
EP Act	Environment Protection Act (2017) Victoria
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPG	Environment Protection Group
EPO	Environmental Performance Outcome
EP Regs	Environment Protection Regulations (2021) Victoria
EPS	Environmental Performance Standard
ERP	Emergency Response Plan
ESD	Ecologically Sustainable Development
ETBF	Eastern Tuna and Billfish Fishery
FLOT	Flying Lead Orientation Tool
FO	Fuel Oil
FRT	Field Response Team
GAB	Great Australian Bight
GHG	Greenhouse gas
GVI	general video inspection
HDD	Horizontal Directional Drill
HDLPE	High Density Linear PolyEthylene
HF	High Frequency
HFL	Hydraulic flying lead
Hg	Mercury
HMA	Hazard Management Agency
HSEC	Health, Safety, Environment and Community
HSE	Health, Safety and Environment
HYCOM	Hybrid Coordinate Ocean Model
IAP	Incident Action Plan
IAPP	International air pollution prevention

Woodside Minerva Decommissioning and Field Management Environment Plan

Term	Description
IBC	International Bulk Carriers
IBRA	Interim Biogeographic Regionalisation for Australia
ICC	Incident Coordination Centre
ICS	Incident Command Structure
IMCRA	Integrated Marine and Coastal Regionalisation of Australia
IMGDC	International Maritime Dangerous Goods Code
IMO	International Maritime Organisation
IMR	Inspection Maintenance and Repair
IMS	Introduced marine species
IMT	Incident Management Team
IOGP	International Oil & Gas Producers
IOPP	International oil pollution prevention
IPCC	Intergovernmental Panel On Climate Change
IPIECA	International Petroleum Industry Environmental Conservation Association
ISM	International Safety Management
ISPP	International sewage prevention pollution
ITOPF	International Tank Owners Pollution Federation
IUCN	International Union for Conservation of Nature
JAMBA	Agreement between the Government of Japan and the Government of Australia for the Protection of Migratory Birds and Birds in Danger of Extinction and their Environment. (Japan Australia Migratory Birds Agreement)
JRCC	AMSA's Joint Rescue Coordination Centre
JSCC	Joint Strategic Coordination Committee
KEF	Key ecological feature
km	Kilometre

Term	Description
kn	Knot
KP	kilometre point
L	Litre
LED	Light Emitting Diode
LF	Low frequency
LNG	Liquefied Natural Gas
LPG	Liquid Petroleum Gas
LOWC	Loss of well control
m	Metre
mm	Millimetre
MMbbl	Million Barrels
m ³	Cubic metre
m/s	Metres per second
MAHs	monocyclic aromatic hydrocarbons
MARS	Maritime Arrivals Reporting System
MC	Measurement Criteria
MCV	Multipurpose Construction Vessel
MEG	MonoEthylene glycol
MENSAR	Maritime Emergencies (non-search and rescue)
MARPOL	The Convention for the Prevention of Pollution from Ships (MARPOL Convention)
MDO	Marine diesel oil
MFE	Mass Flow Excavator
MFO	Marine Fauna Observers
MMSI	Maritime Mobile Service Identity
MNES	Matters of National Environmental Significance, according to the EPBC Act
MO	Marine Orders
MODU	Mobile Offshore Drilling Unit
MoU	Memorandum of Understanding
MSL	Monopole source levels
N ₂ O	Nitrous Oxide
NATA	National Association of Testing Authorities

Woodside Minerva Decommissioning and Field Management Environment Plan

Term	Description
NatPlan	National Plan for Maritime Environmental Emergencies
NCEP	National Centre for Environmental Prediction
NCAR	National Centre for Atmospheric Research
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measures
NES	National Environmental Significance
NGER	National Greenhouse and Energy Reporting Act 2007
nm	Nautical mile
NMERA	National Maritime Emergency Response Arrangement
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NOPTA	National Offshore Petroleum Titles Administrator
NORMs	naturally occurring radioactive materials
NOx	Nitrogen Oxides
NPI	National Pollutant Inventory
NRE	Department of Natural Resources and Environment Tasmania – Sea Fishing & Aquaculture
NSCV	National Standard for Commercial Vessels
NSR	Non-Search and Rescue
NSW	New South Wales
NT	Northern Territory
NTM	Notice to Mariners
OCNS	Offshore Chemical Notification Scheme
ODS	Ozone-depleting substance

Term	Description
OPGGS Act	Offshore Petroleum and Greenhouse Gas Storage Act 2006
OPEP	Oil Pollution Emergency Plan
OSCAR	SINTEF's Oil Spill Contingency and Response (system)
OIM	Offshore Installation Manager
OIW	Oil in Water
OSM	Oil Spill Modelling
OSMBIP	Operational and Scientific Monitoring Bridging Implementation Plan
OSPAR	Oslo and Paris Convention (for the Protection of the Marine Environment of the North-East Atlantic)
OSRC	Oil Spill Response Centre
OSRL	Oil Spill Response Limited
OSRO	Oil Spill Response Organisation
OSTB	Oil Spill tracking Buoys
OSTM	Oil Spill trajectory Modelling
OSV	Offshore Support Vessel
OVID	Offshore Vessel Inspection Database
P&A	Plug and Abandonment
ppb	Parts per billion
ppm	Parts per million
PAH	Polycyclic aromatic hydrocarbons
PGB	Permanent Guide Base
PLEM	Pipeline End Manifold
PLONOR	OSPAR definition of a substance that Poses Little Or No Risk to the environment
PMS	Preventative Maintenance System
PMST	Protected Matters Search Tool
POB	Persons Onboard
POLREP	Pollution Report
POWBONS Act	Pollution of Waters by Oil and Noxious Substances Act 1986 (Victoria)
PPE	Personal Protective Equipment

Woodside Minerva Decommissioning and Field Management Environment Plan

Term	Description
PPRR	Prevention, Preparedness, Response and Recovery framework
PSZ	Petroleum Safety Zone
PTS	permanent threshold shift
RCC	Rescue Coordination Centre
Rmax	Represents the total horizontal distance (km) to the marine mammal threshold of 120 dB re 1 µPa sound pressure level (SPL).
RO	Reverse Osmosis
ROV	Remotely operated vehicle
RTM	Response Time Models
SA	South Australia
SBTF	Southern Bluefin Tuna Fishery
SCCP	Source Control Contingency Plan
SCERP	Source Control Emergency Response Plan
SCS	Source Control Section
SCSSV	surface-controlled subsurface safety valve
SDS	Safety Data Sheet
SEEMP	Ship Energy Efficiency Management Plan
SEL	Sound exposure level
SEMP	Victorian State Emergency Management Plan
SEMR	South East Marine Region
SESSF	Southern and Eastern Scalefish And Shark Fishery
SETFIA	South East Trawl Fishing Industry Association
SFRT	Subsea First Response Toolkit
SIMA	Spill Impact Mitigation Assessment
SINTEF	The Foundation for Scientific Research at the Norwegian Institute of Technology
SITREP	Situation report
SIV	Seafood Industry Victoria
SLDMP	Self-locating datum marker buoys

Term	Description
SMEEC	State Maritime Environmental Coordinator
SMP	Scientific Monitoring Plan
SMPEP	Shipboard Marine Pollution Emergency Plan
Sox	Sulphur oxides
SOLAS	International Convention of the Safety of Life at Sea
SOPEP	Shipboard Oil Pollution Emergency Plan
SPFIA	Small Pelagic Fishery Industry Association
SPL	Sound pressure level
SSDI	Subsea Dispersant Injection
SSIA	Southern Shark Industry Alliance
SSIV	Subsea Safety Isolation Valve
STP	Standard Temperature & Pressure
SXT	Subsea Xmas Tree
SW	State waters
TAC	total allowable catch
Te	Tonne
TEC	Threatened Ecological Community
TPH	Total Petroleum Hydrocarbons
TRP	Tactical Response Plan
TSSC	Threatened Species Scientific Committee
TTS	temporary threshold shift
UKOOA	UK Offshore Operators Association
ULSFO	ultra-low sulphur fuel oil
UNS	Unified Numbering System
UTA	Umbilical Termination Assembly
VEAWP	Victorian Emergency Animal Welfare Plan
VFA	Victorian Fisheries Authority
VHF	Very high frequency
Vic	Victoria
VLSFO	very low sulphur fuel oil
VOC	volatile organic compounds

Woodside Minerva Decommissioning and Field Management Environment Plan

Term	Description
VRFish	Victoria Recreational Fishing Peak Body
WCD	Worst-Case Discharge
WCC	Woodside Communications Centre
WMP	Waste Management Plan
Woodside	Woodside Energy (Victoria) Pty Ltd
WOMP	Well Operations Management Plan
WSD	Well & Seismic Delivery

1. Introduction

1.1. Overview of Proposed Activity

Woodside Energy (Victoria) Pty Ltd (Woodside), as titleholder under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Commonwealth) (referred to as the Environment Regulations), proposes to undertake decommissioning activities within offshore petroleum production licence VIC/L22 and pipeline licence VIC/PL33.

The decommissioning activities covered by this environment plan (EP) include the removal of Minerva subsea infrastructure, comprising:

- approximately 5 km of pipeline bundle and associated equipment (e.g., stabilisation and protective structures)
- well tie-in infrastructure (e.g., flying leads, umbilicals, rigid spools, protective structures, etc.)
- Minerva-2A wellhead and guide base (contingent on Minerva-2A being accepted by NOPSEMA as plugged and abandoned).

Field management activities to maintain equipment within VIC/L22 and adjacent pipeline licence VIC/PL33 such that they can be removed may also be undertaken. These activities will hereafter be referred to as the petroleum activity and form the scope of this EP. A description of the petroleum activity is provided in Section 3.

This EP has been prepared to meet the requirements of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Commonwealth) (OPGGs Act) and the Environment Regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA).

1.2. Purpose of the Environment Plan

In accordance with the objectives of the Environment Regulations, the purpose of this EP is to demonstrate that:

- the potential environmental impacts and risks from planned activities and unplanned events during the petroleum activity are identified and described.
- appropriate management controls are implemented to reduce impacts and risks to a level that is 'as low as reasonably practicable' (ALARP) and acceptable.
- the petroleum activity is carried out in a manner consistent with the principles of ecologically sustainable development (as defined in Section 3A of the *Environment Protection and Biodiversity Conservation Act 1999* (Cwth) (EPBC Act)).

The EP describes the process used by Woodside to identify and evaluate potential environmental impacts and risks arising from the petroleum activity, and defines Environmental Performance Outcomes (EPOs), Performance Standards (PSs) and Measurement Criteria (MCs) to be applied to manage the impacts and risks to ALARP and acceptable levels. These form the basis of the implementation strategy, defined in Section 9 for monitoring, auditing, and managing the petroleum activity to be performed by Woodside and its contractors. This EP documents and considers consultation with relevant authorities, persons, and organisations.

This EP has been developed to replace the in-force Minerva Cessation EP (MN/HSEC/04/020/A08), Revision 5, 2019.

1.3. Scope of this Environment Plan

A description of the petroleum activity is provided in Section 3. The spatial boundary of the petroleum activity has been described and assessed using the operational area, which is described in Section 3.3.

The petroleum activity described in this EP is part of the decommissioning activities that are being carried out on the Minerva subsea infrastructure in VIC/L22 and VIC/PL33. Other activities relevant to the

decommissioning of the Minerva field are covered in other EPs and include:

- plugging and abandonment of wells within VIC/L22
- decommissioning of the pipeline within coastal waters and onshore.

A summary of the holistic decommissioning planning and execution for the property within VIC/L22 and VIC/PL33, including an indicative schedule, is provided in Section 3.5. This EP is intended to be the final decommissioning EP for Woodside's property in VIC/L22 and VIC/PL33 and will therefore address Section 270 of the OPGGS Act and title surrender requirements.

The scope of this EP does not include the movement of the project vessels outside of the operational area. These activities will be performed in accordance with relevant maritime requirements.

1.4. Woodside / BHP Petroleum Merger

BHP Petroleum and Woodside announced their intention to merge in 2021, which became effective on 1 June 2022. Prior to 1 June 2022, BHP Petroleum and Woodside acted as independent companies, thus planning activities for this decommissioning EP were originally conducted by BHP Petroleum. The merger consisted of a change of control of BHP Petroleum International Pty Ltd (holding company for BHP global petroleum business) via a share sale to Woodside Petroleum Ltd. All BHP Petroleum entities holding Australian Petroleum titles, including BHP Petroleum (Victoria) Pty Ltd, transferred to Woodside parent company control with this change in ownership.

All BHP Petroleum policies, standards, processes, and procedures were included in the merger agreement and remain valid. Harmonisation of processes between BHP Petroleum and Woodside commenced planning upon the completion of the merger and will be conducted in a staged manner. The BHP Petroleum HSE Management system (herein referred to as the Woodside (PetDW) HSE Management System) will continue to be used by 'heritage' BHP operations until potential changes have been assessed. References to BHP, BHP Petroleum and Woodside are interchangeable throughout this document.

The titleholder name change from BHP Petroleum (Victoria) Pty Ltd to Woodside Energy (Victoria) Pty Ltd was registered on 29 July 2022.

1.5. Overview of HSE Management System

All Woodside controlled activities associated with the petroleum activity will be conducted in accordance with:

- Woodside "Our Values" and Environment and Biodiversity Policy (Appendix A)
- Woodside Wells and Seismic Delivery Management System
- Woodside (PetDW) Management System
- Woodside (PetDW) Health, Safety and Environment (HSE) Standard
- this EP.

All Woodside sites must maintain up-to-date practices that adhere to the requirements contained in the Woodside (PetDW) HSE Management System and Standard. Activity-specific environmental management measures specific to the petroleum activity are implemented through this EP.

1.6. Environmental Plan Summary

An EP summary has been prepared from material provided in this EP. Table 1-1 summarises the items as required by regulation 35(7) of the Environment Regulations.

Table 1-1: EP Summary

EP Summary Material Requirement (Regulation 35(7))	Relevant Section of EP
The location of the activity	Section 3
A description of the receiving environment	Section 4 Appendix D
A description of the activity	Section 3
Details of the environmental impacts and risks	Section 7 Section 8 Oil Pollution Emergency Plan (OPEP) (Appendix E)
The control measures for the activity	Section 7 Section 8
The arrangements for ongoing monitoring of the titleholder's environmental performance	Section 9 OPEP (Appendix E)
Response arrangements in the oil pollution emergency plan	OPEP (Appendix E)
Details of consultation already undertaken and plans for ongoing consultation	Section 5 Section 9.8 Appendix F
Details of the titleholder's nominated liaison person for the activity	Section 1.8

1.7. Structure of the Environment Plan

This EP has been structured to reflect the requirements of the Environmental Regulations as outlined in Table 1-2.

Table 1-2: EP content requirements from the Environment Regulations and relevant sections of the EP

Criteria for Acceptance	Content Requirements / Relevant Regulations	Elements	Section of EP
Regulation 34(a): <i>is appropriate for the nature and scale of the activity</i>	Regulation 21: <i>Environmental Assessment</i> Regulation 22: <i>Implementation strategy for the environment plan</i> Regulation 24: <i>Other information in the environment plan</i>	The principle of 'nature and scale' applies throughout the EP	Section 3 Section 4 Section 5 Section 6 Section 7 Section 8 Section 9
Regulation 34(b): <i>demonstrates that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable</i>	Regulation 21(1)–21(7): 21(1) <i>Description of the activity</i> 21(2) and (3) <i>Description of the environment</i> 21(4) <i>Requirements</i>	<ul style="list-style-type: none"> Set the context (activity and existing environment) Define 'acceptable' (the requirements, the corporate policy, relevant persons) 	Section 1 Section 2 Section 3 Section 4 Section 5

Woodside Minerva Decommissioning and Field Management Environment Plan

Criteria for Acceptance	Content Requirements / Relevant Regulations	Elements	Section of EP
Regulation 34(c): <i>demonstrates that the environmental impacts and risks of the activity will be of an acceptable level</i>	21(5) and (6) <i>Evaluation of environmental impacts and risks</i> 21(7) <i>Environmental performance outcomes and standards</i> Regulation 24(a)–24(b): <i>A statement of the titleholder’s corporate environmental policy</i> <i>A report on all consultations between the titleholder and any relevant person</i>	<ul style="list-style-type: none"> ▪ Detail the impacts and risks ▪ Evaluate the nature and scale ▪ Detail the control measures – ALARP and acceptable 	Section 6 Section 7 Section 8 Section 9
Regulation 34(d): <i>provides for appropriate environmental performance outcomes, environmental performance standards and measurement criteria</i>	Regulation 21(7): <i>Environmental performance outcomes and standards</i>	Environmental Performance Outcomes (EPOs) Environmental Performance Standards (EPSs) Measurement Criteria (MC)	Section 7 Section 8
Regulation 34(e): <i>includes an appropriate implementation strategy and monitoring, recording and reporting arrangements</i>	Regulation 22: <i>Implementation strategy for the environment plan</i>	Implementation strategy, including: <ul style="list-style-type: none"> ▪ systems, practices, and procedures, ▪ performance monitoring, ▪ OPEP and scientific monitoring ▪ ongoing consultation 	Section 9
Regulation 34(f): <i>does not involve the activity or part of the activity, other than arrangements for environmental monitoring or for responding to an emergency, being undertaken in any part of a declared World Heritage property within the meaning of the EPBC Act</i>	Regulation 21(1)–21(3): 21(1) <i>Description of the activity</i> 21(2) <i>Description of the environment</i> 21(3) <i>Without limiting regulation 21(2)(b), particular relevant values and sensitivities may include any of the following:</i> a) <i>the world heritage values of a declared World Heritage property within the meaning of the EPBC Act</i> b) <i>the national heritage values of a National Heritage place within the meaning of that Act</i> c) <i>the ecological character of a declared Ramsar wetland within the meaning of that Act</i> d) <i>the presence of a listed threatened species or listed threatened ecological community within the meaning of that Act</i>	No activity, or part of the activity, undertaken in any part of a declared World Heritage property.	Section 3 Section 4 Section 7 Section 8

Criteria for Acceptance	Content Requirements / Relevant Regulations	Elements	Section of EP
	<p>e) <i>the presence of a listed migratory species within the meaning of that Act</i></p> <p>f) <i>any values and sensitivities that exist in, or in relation to, part or all of:</i></p> <p>i) <i>a Commonwealth marine area within the meaning of that Act; or</i></p> <p>ii) <i>Commonwealth land within the meaning of that Act.</i></p>		
<p>Regulation 34(g):</p> <p>(i) <i>the titleholder has carried out the consultations required by Section 25</i></p> <p>(ii) <i>the measures (if any) that the titleholder has adopted, or proposes to adopt, because of the consultations are appropriate</i></p>	<p>Regulation 25: <i>Consultation with relevant authorities, persons and organisations, etc.</i></p> <p>Regulation 24(b): <i>A report on all consultations between the titleholder and any relevant person.</i></p>	<p>Consultation in preparation of the EP.</p>	<p>Section 5</p>
<p>Regulation 34(h): <i>complies with the Act and the regulations</i></p>	<p>Regulation 23: <i>Details of the Titleholder and liaison person</i></p> <p>Regulation 24: <i>Details of all reportable incidents in relation to the proposed activity.</i></p>	<p>All contents of the EP must comply with the OPGGS Act and the Environmental Regulations.</p>	<p>Section 1.8 Section 9.10.3</p>

1.8. Titleholder Details

The nominated titleholder for this activity is Woodside Energy (Victoria) Pty Ltd, on behalf of the Joint Venture Partners:

- Woodside Energy (Victoria) Pty Ltd
- Cooper Energy (MF) Pty Ltd.

Woodside has an excellent record of efficient and safe production. Woodside strives for excellence in safety and environmental performance and continues to strengthen relationships with customers, partners co-venturers, governments, and communities with the aim of being a partner of choice. Further information about Woodside can be found at <http://www.woodside.com>.

In accordance with regulation 23(1) of the Environment Regulations, details of the titleholder are provided in Table 1-3. In accordance with regulation 23(2) of the Environment Regulations, details of the titleholder's nominated liaison person are provided in Table 1-4.

In the event of any change in the titleholder, titleholder parent company, a change in the titleholder's nominated liaison person or a change in the contact details for either the titleholder or the liaison person, Woodside will notify the regulator in writing in accordance with regulation 23(3) of the Environment Regulations.

Table 1-3: Titleholder details

Business Name	Woodside Energy (Victoria) Pty Ltd
Business Address	11 Mount Street, Perth, Western Australia 6000
Telephone Number	1800 442 977
Email Address	Feedback@woodside.com
Australian Company Number	006 466 486

Table 1-4: Titleholder's nominated liaison person

Name	Pip Milne
Position	Australian Projects Decommissioning Lead
Business Address	11 Mount Street, Perth, Western Australia 6000
Telephone Number	1800 442 977
Email Address	Feedback@woodside.com

2. Legislative Framework

2.1. Commonwealth Legislation

Environmental aspects of petroleum activities in Australian Commonwealth waters are subject to two main statutes, the OPGGS Act and the EPBC Act. Each of these, as applicable to the proposed petroleum activity, are described in the following sections. There are also additional applicable Commonwealth legislation, International Agreements and Conventions and other applicable standards, guidelines, and codes that may apply to the petroleum activity. These are listed in Appendix C of this EP.

2.1.1. Offshore Petroleum and Greenhouse Gas Storage Act 2006

The OPGGS Act provides the regulatory framework for all offshore exploration and production activities in Commonwealth waters (those areas beyond three nautical miles from the Territorial Sea baseline and with the Commonwealth Petroleum Jurisdiction Boundary). The Environment Regulations have been made under the OPGGS Act to ensure ‘...that any petroleum activity or greenhouse gas activity carried out in an offshore area is:

- carried out in a manner consistent with the principles of ecologically sustainable development set out in section 3A of the EPBC Act
- carried out in a manner by which the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable
- carried out in a manner by which the environmental impacts and risks of the activity will be of an acceptable level’.

This EP meets the requirements of the Environment Regulations by providing an environment plan that:

- is appropriate for the nature and scale of the activity
- demonstrates that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable (ALARP)
- demonstrates that the environmental impacts and risks of the activity will be of an acceptable level
- provides for appropriate environmental performance outcomes, environmental performance standards and measurement criteria
- includes an appropriate implementation strategy and monitoring, recording, and reporting arrangements
- does not involve the activity or part of the activity, other than arrangements for environmental monitoring or for responding to an emergency, being undertaken in any part of a declared World Heritage property with the meaning of the EPBC Act; and
- demonstrates that:
 - An appropriate level of consultation, as required by Division 3 of the Environment Regulations, has been carried out
 - The measures (if any) adopted, or proposed to be adopted, because of consultations are appropriate
 - Complies with the OPGGS Act and the Environment Regulations.

Obligations in relation to the maintenance and removal of equipment and property brought onto title are provided for under section 572(3) of the OPGGS Act. Under section 572(3) of the OPGGS Act, a titleholder must remove from the title area all structures that are, and all equipment and other property that is neither used nor to be used in connection with the operations. Under section 572(7), property removal requirements are subject to any other provision of the OPGGS Act, the Environment Regulations, directions given by NOPSEMA or the responsible Commonwealth Minister, and any other law. Section 572(3) requires the removal of property when it is no longer used, unless NOPSEMA has accepted alternative arrangements. The *Guideline: Offshore Petroleum Decommissioning* (Department of Industry, Science and Resources, 2022) provides information on the circumstances where alternative arrangements may be accepted.

Section 572(3) of the OPGGS Act must be read with section 270(3) of the OPGGS Act, under which, all property brought into the surrender area must be removed to the satisfaction of NOPSEMA, or arrangements that are satisfactory to NOPSEMA must be made relating to the property, before the title may be surrendered. All Minerva subsea infrastructure will be removed no later than 30 June 2025, in accordance with General Direction 831 (see Section 2.1.2) and section 572(3) of the OPGGS Act, unless NOPSEMA approves and is satisfied that an alternative decommissioning approach meets all relevant requirements.

2.1.2. General Direction 831

On 30 August 2021, NOPSEMA issued General Direction 831 under section 574 of the OPGGS Act related to decommissioning of the property within VIC/L22 and VIC/PL33. Table 2-1 outlines Woodside’s intention for addressing each of the directions provided in General Direction 831.

An inventory of Woodside’s property in VIC/L22 and VIC/PL33 within the scope of this EP is provided in Section 3.6. All property within these titles is planned to be completely removed in accordance with section 572(3) of the OPGGS Act no later than the 30 June 2025.

This EP covers the removal of Minerva subsea infrastructure in VIC/L22 and VIC/PL33. Other Minerva decommissioning EPs include:

- Minerva Plug and Abandonment Environment Plan, which relates to plugging and abandoning wells in VIC/L22
- Minerva State Decommissioning and Field Management Environment Plan, which relates to the decommissioning of the pipeline in Victorian coastal waters.

Table 2-1: NOPSEMA General Directions 831 requirements and relevant sections of this EP

Direction Requirements	Relevant Sections of EP
<p>Direction 1 Plug or close off, to the satisfaction of NOPSEMA, all wells made in the title areas by any person engaged or concerned in those operations authorised by each title as soon as practicable and no later than 30 June 2025.</p>	<p>This activity is addressed in the Minerva Plug and Abandonment Environment Plan. These activities will be completed before 30 June 2025.</p>
<p>Direction 2 Remove, or cause to be removed, to the satisfaction of NOPSEMA, from the title areas all property brought into those areas by any person engaged or concerned in the operations authorised by each title as soon as practicable and no later than 30 June 2025.</p>	<p>Section 3 of this EP provides the Minerva decommissioning planning process and schedule for decommissioning of all Minerva subsea infrastructure as described in Table 3-8. This EP describes the proposed methodology, scope of work and execution strategy for the removal of the Minerva subsea infrastructure. All property within the Minerva field will be removed on or before 30 June 2025.</p>
<p>Direction 3 Until such time as direction 1 and 2 are satisfied, maintain all property on the titles to NOPSEMA’s satisfaction, to ensure removal of the property is not precluded.</p>	<p>This EP provides for the ongoing maintenance of property within the petroleum title VIC/L22 and pipeline licence VIC/PL33 to allow for full removal of property. Minerva field infrastructure was last inspected in March 2021 and is in good condition, with no significant corrosion or damage identified. As such, no maintenance activities are presently envisaged to be required prior to infrastructure being removed. The EP provides for inspection, maintenance, and repair (IMR) activities should they be required.</p>

Direction Requirements	Relevant Sections of EP
<p>Direction 4</p> <p>Provide, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the tile areas within 12 months after property referred to in direction 2 is removed.</p>	<p>Woodside applies the same definition for the term “natural resources”¹ as is used in NOPSEMA policy <i>Section 270 Consent to surrender title – NOPSEMA advice</i> (NOPSEMA, 2022).</p> <p>Woodside will undertake final environmental surveys (Section 3.8.2). Data will be collated from ROV surveys and sediment, infauna, and water sampling to inform what, if anything, needs to be done to provide for the conservation and protection of natural resources in VIC/L22 and VIC/PL33.</p>
<p>Direction 5</p> <p>Make good, to the satisfaction of NOPSEMA, any damage to the seabed or subsoil in the tile areas caused by any person engaged or concerned in those operations authorised by the titles within 12 months after property referred to in direction 2 is removed.</p>	<p>As set out above, Woodside will undertake decommissioning environmental surveys (Section 3.8.2). Data will be collated from seabed clearance surveys, ROV images and sediment sampling to inform what, if anything, needs to be done to make good any damage to the seabed or subsoil in VIC/L22 and VIC/PL33.</p>
<p>Direction 6</p> <p>a) Submit to NOPSEMA on an annual basis, until all directions have been met, a progress report detailing planning towards and progress with undertaking the actions required by directions 1, 2, 3, 4 and 5.</p> <p>b) The report submitted under Direction 6(a) must be to the satisfaction of NOPSEMA and submitted to NOPSEMA no later than 31 December each year.</p> <p>c) Publish the report on the registered holders’ website within 14 days of obtaining NOPSEMA satisfaction under Direction 6(b).</p>	<p>Section 9.10.3 of this EP describes Woodside’s external reporting commitments, including reporting to address Direction 6.</p>

2.1.3. Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act protects and manages nationally and internationally important flora, fauna, ecological communities, and heritage places in Australia. Many of these are defined in the EPBC Act as Matters of National Environmental Significance (MNES). Activities that will, or are likely to, have a significant impact on MNES must be referred for assessment under the EPBC Act.

The Minerva field in Commonwealth waters, as well as the pipeline and gas plant in Victoria, was assessed as a joint Commonwealth Environmental Impact Statement and Victorian Environment Effects Statement (EES). The assessment pre-dated the EPBC Act. The joint assessment was made under the *Environmental Protection (Impact of Proposals) Act 1974* (Cth) and the *Environment Effects Act 1978* (Vic) respectively.

NOPSEMA, through the Streamlining Offshore Petroleum Environmental Approvals Program, implements these requirements with respect to offshore petroleum activities in Commonwealth waters. The Streamlining Offshore Petroleum Environmental Approvals Program is applicable to all offshore petroleum activities authorised under the OPGGS Act and requires petroleum activities to be conducted in accordance with an accepted EP, consistent with the principles of Ecologically Sustainable Development (ESD). The definition of ‘environment’ in the Streamlining Offshore Petroleum Environmental Approvals Program is consistent with that

¹ The Section 270 NOPSEMA advice - Consent to surrender title (NOPSEMA 2021) applies the same meaning to “natural resources” as in Article 77 of the United Nations Convention on the Law of the Sea 1982, which states “*The natural resources referred to in this Part consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed of the subsoil.*”

used in the EPBC Act and encompass all matters protected under Part 3 of the EPBC Act.

Under section 268 of the EPBC Act: 'A Commonwealth agency must not take any action that contravenes a recovery plan or a threat abatement plan.'

In respect to offshore petroleum activities in Commonwealth waters, the above is implemented by NOPSEMA. Commitments relating to listed threatened species and ecological communities under the Act are included in the Program Report:

- NOPSEMA will not accept an EP that proposes activities which will result in unacceptable impacts to a listed threatened species or ecological community.
- NOPSEMA will not accept an EP that is inconsistent with a recovery plan or threat abatement plan for a listed threatened species or ecological community.
- NOPSEMA will have regard to any approved conservation advice relating to a threatened species or ecological community before accepting an EP.

Species recovery and threat abatement management plans relevant to this EP are outlined in Section 4.4.4 and considered where relevant in the assessment of environmental impacts and risks in Sections 7 and 8.

2.1.4. Hazardous Waste (Regulation of Exports and Imports)

The *Hazardous Waste (Regulation of Export and Imports) Act 1989* regulates the export and import of controlled wastes in and an out of Australia by applying to the Minister of the Environment for a permit. Woodside will manage the disposal of the recovered subsea infrastructure in accordance with applicable legislation and as outlined in Section 7.7 and 9.5.

2.2. State Legislation

The pipeline in Victorian coastal waters is outside of the scope of this EP and will be managed in accordance with EPs accepted by the Victorian Department of Energy, Environment and Climate Action (DEECA).

The management and disposal of recovered equipment may result in indirect impacts beyond Commonwealth waters. Management and disposal of recovered equipment will be done in accordance with the waste management arrangements described in Sections 7.7 and 9.5. Relevant requirements in Victoria will be complied with when managing and disposing of recovered equipment.

In the event of a hydrocarbon release from a tank rupture from a vessel collision, there is the potential for the release to impact Victorian waters and shorelines. This risk has been assessed in this EP.

Relevant Victorian legislation is listed in Appendix C.

2.3. International Conventions and Agreements

Australia is a signatory to numerous international conventions and agreements. These, and legislation giving effect to the conventions and agreements, are considered in the management of environmental impacts and risks where applicable. Relevant international conventions and agreements are described in Appendix C, along with the legislation that gives effect to these conventions and agreements. International conventions and agreements are considered where relevant in the assessment of environmental impacts and risks in Sections 7 and 8.

2.4. Surrender of Petroleum Titles

Woodside intends to surrender VIC/L22 and VIC/PL33. Woodside will apply to surrender WIC/L22 and VIC/PL33 to the National Offshore Petroleum Titles Administrator (NOPTA) and the Joint Authority at the completion of the activities described in this EP and the Minerva Plug and Abandonment EP. Information on the Minerva Plug and Abandonment EP is provided in Section 3.5.

NOPSEMA provides advice to the Joint Authority when an application to surrender a title is made. NOPSEMA's advice includes confirmation that the titleholder has satisfied relevant environmental management

requirements, in particular the requirements of section 270(3)(e) and section 270(3)(f) of the OPGGS Act. NOPSEMA's *Section 270 Consent to Surrender Title – NOPSEMA Advice (2022)* identifies several criteria that NOPSEMA considers when advising the Joint Authority on applications to surrender petroleum titles.

As this EP is planned to be the final EP for the Minerva development, the relevant requirements in section 270 of the OPGGS Act are set out in Table 2-2. Woodside will undertake environmental monitoring at the conclusion of all equipment removal activities. Environmental monitoring results will be used to assess whether the requirements of section 270(3)(e) and section 270(3)(f) have been met.

Woodside will submit a report to NOPSEMA demonstrating that the requirements of section 270 of the OPGGS Act have been met. This demonstration will consider a range of environmental information, including data collected following the completion of equipment removal activities. Woodside will undertake environmental monitoring at the conclusion of equipment removal activities. The report will also seek to address directions 4 and 5 of General Direction 831. The decommissioning environmental survey program is described further in Section 3.8.2.

Table 2-2: Section 270 Consent to Surrender Title – NOPSEMA Advice (NOPSEMA, 2022) policy requirements² and arrangements

Section 270 Policy Requirement	Arrangements to Address Policy Requirements
<p>The registered holder of the permit, lease, or licence has, to the satisfaction of NOPSEMA, removed or caused to be removed from the surrendered area all property brought into the surrender area by any person engaged or concerned in the operations authorised by the permit, lease, or licence; or made arrangements that are satisfactory to NOPSEMA in relation to that property</p>	<p>All Woodside property within VIC/L22 and VIC/PL33 is proposed to be removed as required by Section 572 of the <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>.</p> <p>Once the petroleum activities within the scope of this EP and the Minerva Plug and Abandonment EP are completed, Woodside will have met the requirement to remove property or make arrangements that are satisfactory to NOPSEMA.</p>
<p>The registered holder of the permit, lease or licence has, to the satisfaction of NOPSEMA, plugged or closed off all wells made in the surrender area by any person engaged or concerned in the operations authorised by the permit, lease, or licence</p>	<p>All wells within VIC/L22 have been, or will be, permanently plugged and abandoned. The Minerva Plug and Abandonment Environment Plan covers the permanent plugging and abandonment of wells in VIC/L22 that have not been confirmed as permanently plugged and abandoned.</p>
<p>The registered holder of the permit, lease or licence has provided, to the satisfaction of NOPSEMA, for the conservation and protection of the natural resources in the surrender area.</p> <p>When determining if titleholders have provided for the conservation of natural resources, NOPSEMA considers:</p> <ul style="list-style-type: none"> ▪ the principles of Ecologically Sustainable Development (as defined in Section 3A the EPBC Act) ▪ whether environmental impacts and risks are demonstrated to be managed to a level that is ALARP and acceptable ▪ relevant requirements have been met 	<p>In the context of this EP, Woodside applies the same meaning to natural resources as NOPSEMA: 'the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species, that is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil.'</p> <p>Woodside has extracted the known commercially viable petroleum resources from the seabed. Woodside will permanently plug and abandon wells and remove property within VIC/L22 and VIC/PL33. These actions have not resulted, or will not result, in damage to the remaining mineral and other non-living resources within VIC/L22 and VIC/PL33 (e.g., renewable energy resources).</p> <p>Environmental monitoring in VIC/L22 and VIC/PL33 to date shows little or no contamination within the field in comparison to background levels (Advisian, 2021). Woodside will undertake a decommissioning environmental monitoring survey (as outlined in Section 3.8.2) following decommissioning which will again assess the natural resources within the</p>

² Section 270 Consent to Surrender Title – NOPSEMA Advice. NOPSEMA Document No. N-00500-PL 1959 A800981, June 2022.

Section 270 Policy Requirement	Arrangements to Address Policy Requirements
	field and compare them to previously monitored and natural (control) locations.
<p>The registered holder of the permit, lease or licence has, to the satisfaction of NOPSEMA, made good any damage to the seabed or subsoil in the surrender area caused by any person engaged or concerned in the operations authorised by the permit, lease, or licence.</p> <p>When determining if titleholders have made good damage to the seabed, NOPSEMA considers:</p> <ul style="list-style-type: none"> ▪ the principles of ecologically sustainable development (as defined in Section 3A the EPBC Act) ▪ the titleholder's intent to achieve a clear seabed ▪ whether environmental impacts and risks are demonstrated to be managed to a level that is ALARP and acceptable. 	<p>Woodside considers making good any damage to the seabed to be 'Make good any damage ... unacceptable impacts and risks to the seabed and subsoil have been remediated to enable future unrestricted access, beneficial use and re-release for future use'.</p> <p>Environment plans for petroleum activity in VIC/L22 and VIC/PL33 have been in place following the introduction of the Environment Regulations. Acceptable levels of impact and risk to the seabed have been addressed in these EPs and accepted by NOPSEMA.</p> <p>Environmental monitoring in VIC/L22 and VIC/PL33 to date shows little or no contamination within the field in comparison to background levels (Advisian, 2021). Woodside will undertake a decommissioning environmental monitoring survey (as outlined in Section 3.8.2) following decommissioning which will again assess the natural resources within the field and compare them to previously monitored and natural (control) locations.</p> <p>The removal of property is consistent with a clear seabed and does not prevent future activities in VIC/L22 and VIC/PL33 such as:</p> <ul style="list-style-type: none"> ▪ trawl fishing ▪ offshore construction (e.g., offshore wind generation) ▪ re-release as petroleum exploration and production titles.

3. Description of Activity

3.1. Overview

This section has been prepared in accordance with regulation 21(1) of the Environment Regulations and describes the petroleum activity to be performed under this EP.

The Minerva-1 and Minerva-2A exploration wells were drilled in VIC/L22 in 1993. Both wells were suspended, with wellheads left in place. The Minerva-2 well was plugged and abandoned after encountering technical difficulties approximately 465 m below the seabed without encountering indications of hydrocarbons, well short of the planned depth of approximately 2,200 m. The Minerva-2 wellhead and guide base were removed. Minvera-2 is not considered further in this EP.

The Minerva-3 and Minerva-4 offshore production wells were drilled in VIC/L22 in late 2002 and the offshore and onshore pipeline was laid in 2003. The construction of the Minerva onshore gas plant was completed in December 2004, and the onshore and offshore facilities were commissioned and commenced production in January 2005. Production of the field ceased in September 2019 and the Minerva-3 and Minerva-4 production wells were suspended. A vessel-based campaign was conducted in 2021 to disconnect flowlines from wells and install additional barrier plugs in the wells. Woodside is now planning to undertake plug and abandonment of the Minerva-1, Minerva-2A, Minerva-3 and Minerva-4 wells (in accordance with the separate Minerva Plug and Abandonment EP), and removal of property in VIC/L22 and VIC/PL33 (under this EP).

Woodside proposes to undertake the following activities under this EP, referred to as the petroleum activity:

- removal of the Minerva subsea infrastructure described in Section 3.6 within VIC/L22 and VIC/PL33, with the following exclusions:
 - Removal of the wellhead and guide base from Minerva-2A is contingent upon Minerva-2A being accepted by NOPSEMA as plugged and abandoned. If Minerva-2A is not accepted as plugged and abandoned by NOPSEMA, the Minerva-2A wellhead will be removed under the Minerva Plug and Abandonment EP.
 - Minerva-1, Minerva-3, and Minerva-4 wellheads and guide bases, along with the Minerva-3 and Minerva-4 Xmas trees, will be removed under the Minerva Plug and Abandonment EP.
- management of the Minerva subsea infrastructure until it is removed.

A full list of Minerva subsea infrastructure within the scope of the EP is provided in Table 3-2.

3.2. Location

The petroleum activity is in Commonwealth waters in the Otway Basin approximately 7 km south-southwest of Port Campbell, Victoria. The Minerva subsea infrastructure is in approximately 55–59 m water depth at lowest astronomical tide (LAT). Section 3.3 defines the operational area within which the petroleum activity will take place.

The relative distances between notable features and the operational area are provided in Table 3-1. The coordinates and water depths of the Minerva subsea infrastructure is presented in Table 3-2. The location of the petroleum activity is shown in Figure 3-1.

Table 3-1: Distance of operational area to notable features

Value / Sensitivity	Approximate Distance to Operational Area (km)
The Arches Marine Sanctuary	5
Twelve Apostles Marine National Park	5
Great Ocean Road and Scenic Environs National Heritage Place	5
Port Campbell	7

Value / Sensitivity	Approximate Distance to Operational Area (km)
Apollo Marine Park	50
Warrnambool	52
Apollo Bay	61
Port Fairy	71

Table 3-2: Minerva subsea infrastructure locations

Infrastructure	Latitude ¹	Longitude ¹	Water Depth (m LAT)
Minerva-1 exploration well	38° 42' 06.885" S	142° 57' 17.278" E	56
Minerva-2A exploration well	38° 42' 59.190" S	142° 57' 25.742" E	58
Minerva-3 production well	38° 42' 22.718" S	142° 57' 32.997" E	57
Minerva-4 production well	38° 43' 07.368" S	142° 57' 44.023" E	59
10" gas production pipeline (coastal waters boundary)	38° 62' 96.93" S	142° 96' 48.47" E	55
10" gas production pipeline end module assembly (PLEM)	38° 71' 89.53" S	142° 96' 14.70" E	55

¹ GDA94 coordinate reference system

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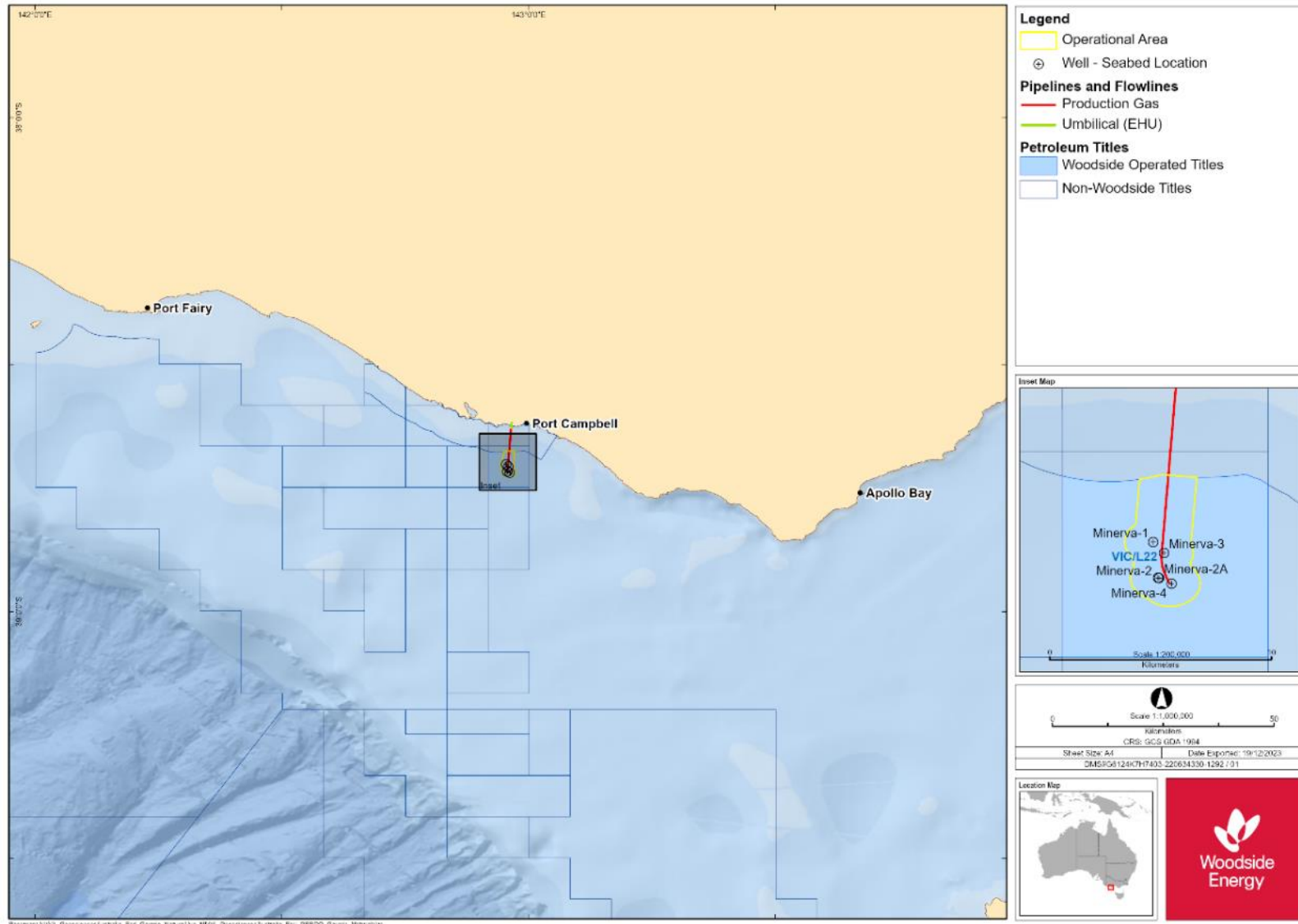


Figure 3-1: Location of the petroleum activity

3.3. Operational Area

The operational area shown in Figure 3-1 defines the spatial boundary of the petroleum activity; the planned aspects of the petroleum activity will not extend beyond the operational area. The operational area is defined as a 1,000 m radius around the subsea infrastructure, wellheads, and the gas production pipeline (the pipeline) within Commonwealth waters.

Vessel movements outside the operational area are not considered part of the petroleum activity and are beyond the scope of this EP.

Activities associated with the pipeline in Victorian coastal waters are not considered part of the petroleum activity and are beyond the scope of this EP.

3.4. Timing and Duration

The approximate timing and duration of the parts of the petroleum activity are summarised in Table 3-3. The timing and duration of these activities is subject to change due to project schedule requirements, vessel availability, unforeseen circumstances, and weather. In accordance with General Direction 831, the petroleum activity is planned to be completed no later than 30 June 2025.

The petroleum activity may be undertaken 24-hrs per day, seven days per week.

Table 3-3: Timing of Proposed Petroleum Activity

Activity	Cumulative Duration	Approximate Timing
Management of subsea infrastructure	Ongoing from EP acceptance until end of equipment removal campaign	Ongoing until removal of Minerva subsea infrastructure is complete
Subsea infrastructure removal (including environmental monitoring)	Approximately 45-60 days in Commonwealth waters, including weather contingency ³	Q3 2024 – Q2 2025
Management of subsea infrastructure	No inspection, maintenance or repair activities are expected to be required. If such activities are required, the duration is typically < 7 days	May occur at any time prior to complete removal of the Minerva subsea infrastructure

3.4.1. Simultaneous Operations

There are no currently planned simultaneous operations (SIMOPS) between the petroleum activities described in this EP and other petroleum activities either by Woodside or other titleholders. However, if necessary (e.g., due to MODU availability), the activities described in the Minerva Plug and Abandonment EP (Section 3.5.1) may occur simultaneously with the activities described in this EP. If required, SIMOPS will be managed by Woodside and its contractors. A 500 m exclusion zone will be implemented around the MODU, within which SIMOPS would only occur following a risk assessment and implementation of controls as detailed in the SIMOPS plan.

Woodside is aware of the petroleum activity described in the Offshore Gas Victoria Geophysical and Geotechnical Seabed Survey EP by Beach Energy (Operations) Limited (Beach), which may overlap VIC/L22. The agreement between Woodside and Beach permitting Beach to undertake their petroleum activity in VIC/L22 prohibits Beach from undertaking the geophysical and geotechnical seabed survey in VIC/L22 during removal of the Minerva subsea infrastructure or plugging of the Minerva wells.

³ Total campaign duration in Commonwealth and Victorian coastal waters is approximately 90-120 days.

3.5. Holistic Minerva Field Decommissioning and Timing

3.5.1. Decommissioning Planning

The activities to decommission the Minerva field in Commonwealth waters are covered by two EPs. The scope of each is detailed in Table 3-4 and an indicative schedule is provided as Figure 3-2.

Decommissioning planning for the Minerva field is substantially progressed and Woodside is currently evaluating tenders for infrastructure removal activities. A rig has been secured for the plug and abandonment activities through a rig consortium with other titleholders in the region.

This EP is planned to be the final EP for the decommissioning of the Minerva field and anticipated to remain in force until such time:

- all decommissioning activities are completed
- the requirements of General Direction 831 are met
- Section 270 of the OPGGS Act requirements are satisfied so that the relevant petroleum titles can be surrendered.

Table 3-4: Summary of EPs related to the decommissioning of Minerva field in Commonwealth waters

EP	Scope	EP Initiation	EP Termination
Minerva Plug and Abandonment EP	Undertake plug and abandonment activities in VIC/L22 and removal of the Minerva well infrastructure.	From acceptance of EP by NOPSEMA. Plug and abandonment activities are planned to be carried out between Q2 2025 and Q3 2025.	The EP will end when Woodside notifies NOPSEMA that the petroleum activity described in the EP is completed in accordance with regulation 46 of the Environment Regulations.
Minerva Decommissioning and Field Management EP (this EP)	Removal of Minerva subsea infrastructure within Commonwealth waters and field management activities.	From acceptance of EP by NOPSEMA. Subsea Infrastructure Removal and field management activities will be carried out between Q2 2024 and the end of Q2 2025.	The EP will end when Woodside notifies NOPSEMA that the petroleum activity described in the EP is completed in accordance with regulation 46 of the Environment Regulations.

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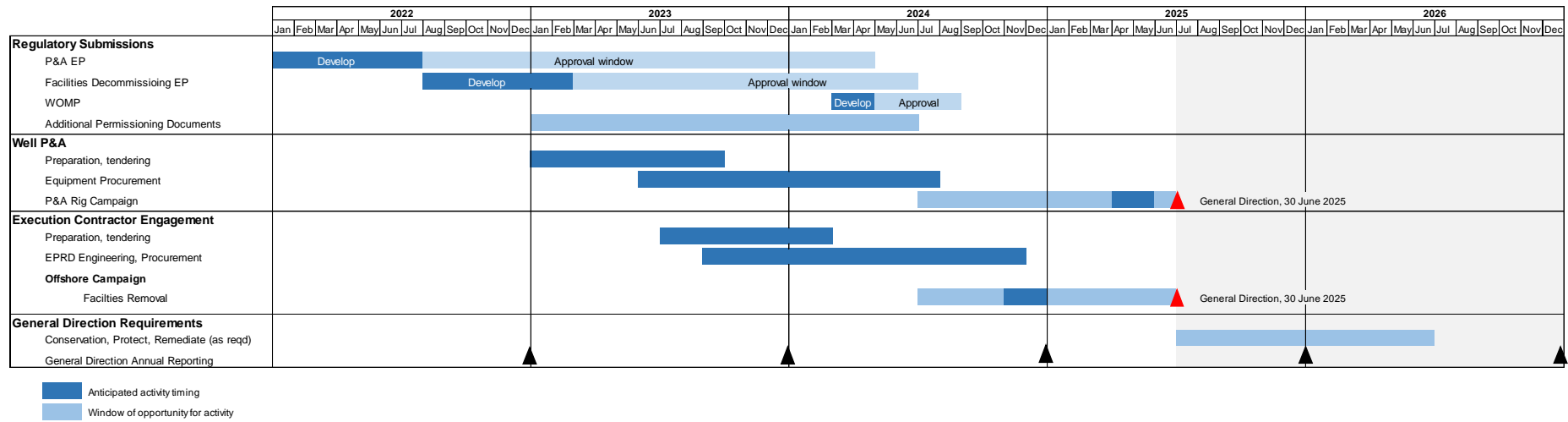


Figure 3-2: Indicative schedule of decommissioning environmental approvals and related activities for the Minerva field

3.5.2. Surveys or Studies Undertaken to Support the Minerva Field Decommissioning Program

An offshore campaign was undertaken in March 2021 during which field observations and studies were conducted to collect data to inform decommissioning planning for the Minerva field infrastructure (BHP, 2021). These included:

- general visual and cathodic protection (CP) inspections
- environmental sampling
- contaminants studies.

Additional information on each is provided below.

3.5.2.1. General Visual and CP Inspections

The Minerva subsea infrastructure was visually inspected; no significant anomalies were detected, and the subsea infrastructure was in good condition with no sign of damage or degradation. Much of the pipeline is buried, with unburied portions identified to have 100% marine growth coverage. CP measurements on the pipeline are within the protected range (800–1,100 mV) and prior cathodic potential field gradient analysis has identified that the CP system will remain operational for > 100 years.

The 8" and 2" flow spools were inspected to be in good condition and predominately (up to 90%) buried in the seabed. Protective structures over the umbilical termination assembly (UTA), double block and bleed valves, and pipeline end valve assembly were considered in good condition with no visible damage. These structures have between 90–100% marine growth coverage.

The accumulation of pipeline integrity data over operational lifetime provides a sufficient level of information to satisfy Woodside with respect to internal pipe condition. Pipeline operating conditions and produced fluids were subject to frequent and consistent analysis over the operating life of field. All measured parameters fell within design parameters. In addition, the pipeline design corrosion allowances are 4 mm for 12.7 mm pipe and 6 mm for 15.9 mm pipe; for a design life of 15 years. Utilising a conservative corrosion rate based on measured data of 0.2 mm/year, the pipeline remains within corrosion allowance through to planned final decommissioning in 2025.

Drawing upon integrity management during operations, pipeline integrity was managed for the planned cessation period via internal preservation (treated water and nitrogen purge), and existing external pipeline coating and sacrificial anode cathodic protection. This was based on current condition of the pipeline which is confirmed as having no risk of corrosion outside the design allowance based on ongoing pipeline integrity monitoring in the operational phase.

3.5.2.2. Environmental Sampling

Seabed sediment, infauna and water sampling was conducted at 12 sites as part of the offshore campaign in March 2021 to determine any impacts to physico-chemical and biological characteristics within the Minerva Field following cessation of operations (Advisian, 2021). The survey confirmed that measured physico-chemical and biological characteristics of the environment adjacent to the subsea assets is similar to that recorded at reference sites.

Sediment and seawater characteristics across the permit area were found to be generally consistent between sites and were representative of background, ambient conditions in the western region of the Bass Strait. Analysis of water and sediment samples indicated all test results within normal parameters. Total metal concentrations in water and sediment were low across all sample sites, with no exceedances of the default guideline values for toxicants in sediment or 99% species protection levels for toxicants in water (Advisian, 2021). Organic contaminants, including total petroleum hydrocarbons, were below the limit of reporting in all samples tested (Advisian, 2021).

3.5.2.3. Contaminants Studies

Naturally Occurring Radioactive Material

Naturally occurring radioactive material (NORM) may be deposited within hydrocarbon production systems during production. The radionuclides are in solution at the temperatures and pressures used for oil and gas extraction. As temperatures and pressures reduce within infrastructure, the radioactive material may be deposited in scale on internal surfaces of pipes, heat exchangers and other components, and is referred to as NORM. NORM in oil and gas extraction is a common phenomenon.

A NORM survey was conducted as part of the 2021 offshore campaign utilising Tracero Radiation monitoring techniques (BHP, 2021). Thirty-four fixed subsea components were tested at the seabed and six cut sections of spool were recovered to the deck for testing at surface. A PRI 171 subsea radiation detector was used to measure external reading to give an indication that NORM may be present within subsea infrastructure. All subsea readings returned background level results except for Minerva-3 and Minerva-4 8" pipeline flange and a section of the pipeline spools. The six recovered spools were tested at the surface with the Minerva-3 spool displaying dose readings of 0.18 $\mu\text{Sv/hr}$ and Minerva-4 spool displaying dose readings of 0.2 $\mu\text{Sv/hr}$ which were both within background dose range of 0.17–0.39 $\mu\text{Sv/hr}$ (BHP, 2021).

Subsequent laboratory analysis was conducted on the scale found on the internal surface of the recovered spool pieces to determine the radionuclides present and their activity level. The findings indicated the presence of activity from Ra-226 (140 Bq/g), Ra-228 (120 Bq/g), Th-228 (120 Bq/g) and Pb-210 (8 Bq/g) (Xodus, 2023).

A metal sample obtained by grinding the inside of one of the spool pieces was tested and found to have substantially lower activity levels for all radionuclides: Ra-226 (2 Bq/g), Ra-228 (1.7 Bq/g), Pb-210 (0.67 Bq/g), and Th-228 (0.59 Bq/g) (Xodus, 2023). These results confirm that radioactivity is contained in the scale with relatively little residual radioactivity contained in the metal surface of the spool pieces tested.

Mercury

Mercury is ubiquitous in oil and gas reservoirs and can pose a serious risk to health and the environment. Mercury may deposit onto the internal process infrastructure via mechanisms, such as chemisorption, adsorption, and precipitated scale deposits. Based on known patterns of mercury deposition in oil and gas infrastructure, metal surfaces exposed to gas-phase hydrocarbons were identified as being the most likely locations for deposition of mercury scale (Kho et al., 2022).

A mercury survey was conducted on 8" production spool pieces, located immediately downstream of the Minerva-3 and Minerva-4 wells, which were collected as part of the 2021 offshore campaign (BHP, 2021). The analysis consisted of four components (Xodus, 2023):

- surface mercury measurement
- total mercury measurement
- mercury speciation
- scale characterisation.

Figure 3-3 shows the spool pieces and coupons tested during this survey.

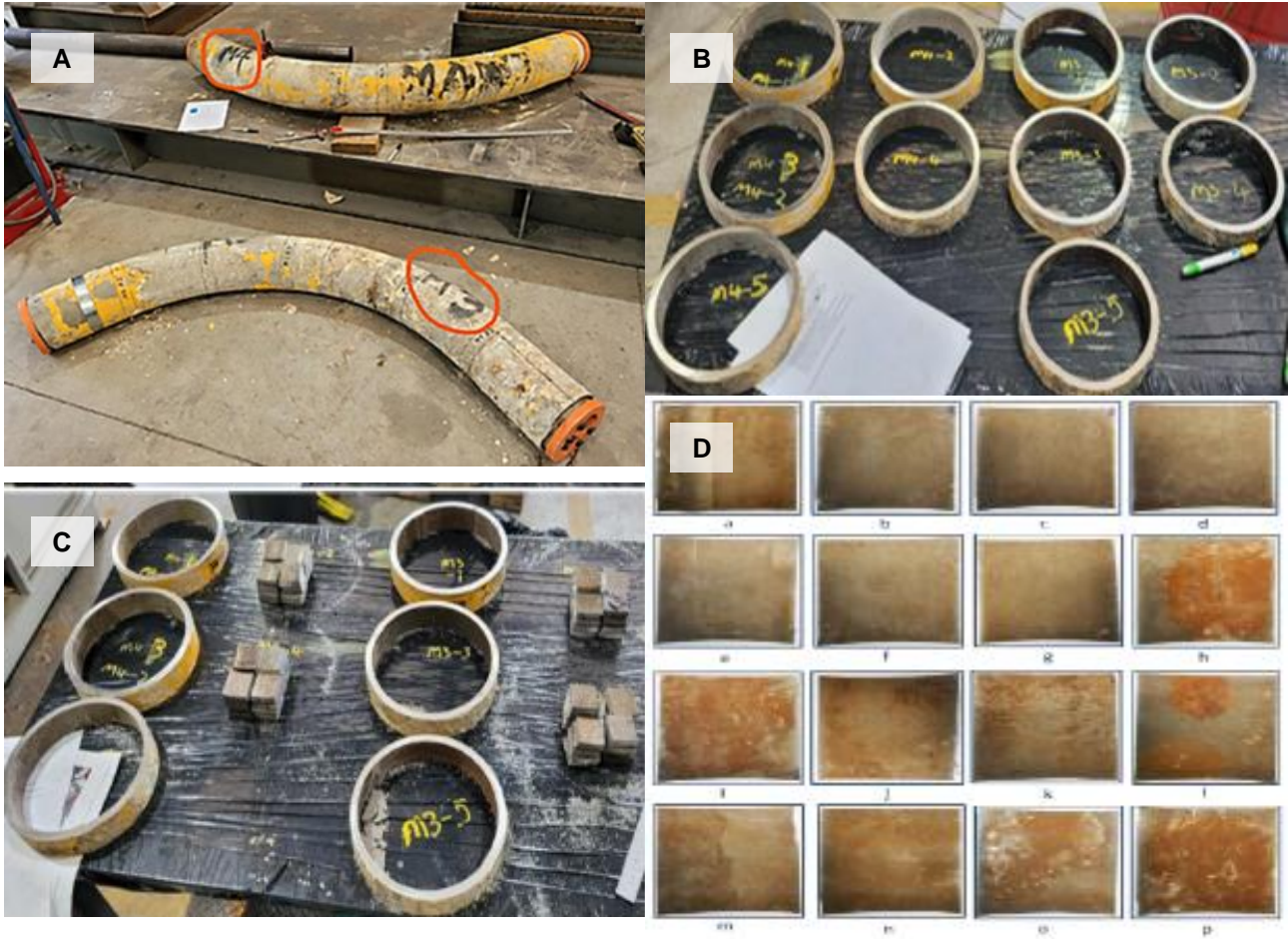


Figure 3-3: 8” production spool pieces (A), rings cut from spool pieces (B and C) and coupons cut from rings (D)

The surface mercury measurements analysis consisted of screening 64 coupons cut from four rings taken from the spool pieces using portable x-ray fluorescence (pXRF) general metals analysis. Five readings per coupon were performed and average concentration of the surface mercury was calculated (mg/kg or ppm).

As noted in Table 3-5, the surface mercury measurements ranged from < 300–1,780 mg/kg. Note units from pXRF are indicative only.

From the 64 coupons, four coupons were selected from each of the four rings for total mercury evaluation. The sixteen coupons were selected based on (a) highest surface mercury reading; and (b) equidistant position on the ring. Total mercury was evaluated through acid digestion of the steel coupons with subsequent atomic adsorption spectroscopy of the metal’s substrate in liquid. Expressed in whole steel terms, mercury concentrations fell within the range of 0.19–0.91 mg/kg with the average being 0.37 mg/kg (Figure 3-4).

Table 3-5: Surface Mercury Measurement

Qa ³ Sample Reference	Coupon Reference	Surface Mercury on Coupon as Received (mg/kg)					
		1	2	3	4	5	Avg
Spool Minerva-3 Ring 2							
PR23004/01b	M3-2b	8900	< 300	780	610	610	578
PR23004/01f	M3-2f	520	< 300	< 300	620	< 300	< 300
PR23004/01i	M3-2i	980	1,310	860	890	1,270	1,062
PR23004/01n	M3-2n	1,720	1,420	1,310	1,550	1,620	1,524
Spool Minerva-3 Ring 4							
PR23004/02b	M3-4b	<300	<300	770	690	870	466
PR23004/02e	M3-4e	1100	720	1000	860	930	922
PR23004/02h	M3-4h	<300	450	<300	510	820	356
PR23004/02n	M3-4n	600	560	<300	640	<300	360
Spool Minerva-4 Ring 2							
PR23004/03d	M4-2d	1430	1310	1110	1290	1770	1382
PR23004/03g	M4-2g	930	900	1090	1460	1060	1088
PR23004/03k	M4-2k	1250	<300	<300	1190	1220	732
PR23004/03o	M4-2o	1100	1340	820	1240	1070	1114
Spool Minerva-4 Ring 4							
PR23004/04c	M4-4c	<300	1180	1140	780	840	788
PR23004/04g	M4-4g	1650	1050	1130	940	860	1126
PR23004/04k	M4-4k	1180	1270	1050	940	1600	1208
PR23004/04n	M4-4n	1780	1540	1140	1490	1400	1470

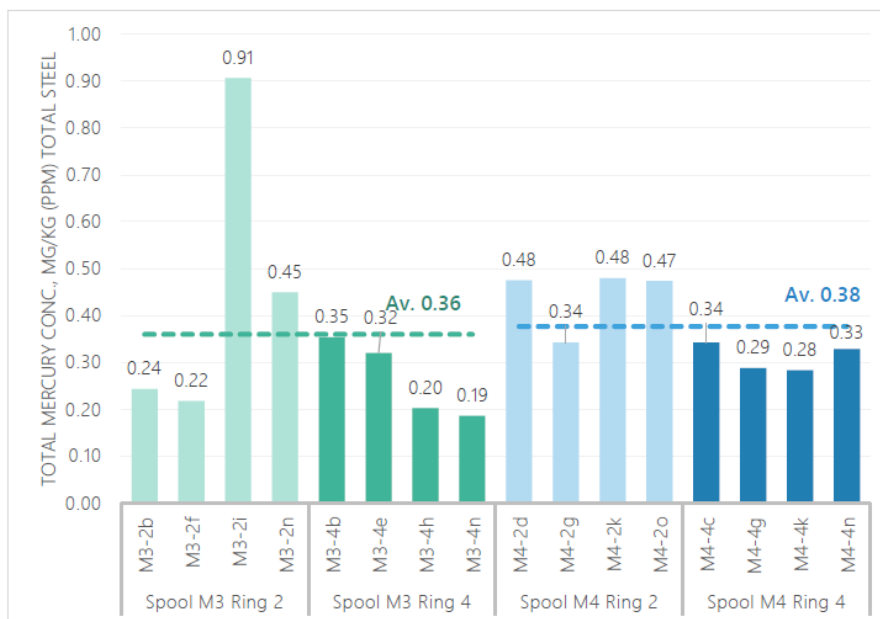


Figure 3-4: Total mercury concentrations in spool coupons

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The internal surfaces of four coupons were fully immersed in an organic solvent (hexane) and then a dilute acid (5% v/v nitric acid) solution for a period of two hours in each. Mercury species removed by the organic solvent include organomercury species such as dimethylmercury and mercury associated with hexane soluble organic material. Mercury species removed by the dilute acid include any soluble inorganic salts. Speciation results show the composition of mercury in the spools is primarily elemental mercury and stable inorganic mercury salts (most likely HgS – mercuric sulphide) (36.3%–88.2%) with very little soluble organic mercury (~0.1%) (Table 3-6).

Table 3-6: Concentrations of mercury species in spool coupons

Qa ³ Sample Reference	Coupon Reference	Mercury Species				
		Organic* Soluble	Dilute Acid Soluble	Elemental (purgeable at 130 °C)	Stable Salts	Total
<i>Expressed in Whole Coupon Terms (mg/kg)</i>						
PR23004/01m	M3-2m	<0.0001	<0.0001	0.056	0.01	0.06
PR23004/02d	M3-4d	<0.0001	0.0001	0.117	0.09	0.21
PR23004/03h	M4-2h	<0.0001	<0.0001	0.082	0.14	0.23
PR23004/04i	M4-4i	<0.0001	0.0002	0.089	0.03	0.12
<i>Expressed as % of Total</i>						
PR23004/01m	M3-2m	<0.16	<0.16	88.2	11.8	100.0
PR23004/02d	M3-4d	<0.05	0.05	55.1	44.9	100.0
PR23004/03h	M4-2h	<0.05	<0.05	36.3	63.7	100.0
PR23004/04i	M4-4i	<0.09	0.17	73.2	26.7	100.0

* Soluble in hexane

The scale was removed from four coupons (one from each ring section) using manual abrasion with a hardened steel tool. The isolated scale was then ground up and analysed after an initial digestion and subsequent fusion reaction. The species of interest were quantified with the concentrations (mg/L) measured in each solution converted to a concentration (%m/m) of each element in the sample. The scale was found to be predominantly barium sulphate (BaSO₄, barite) with some strontium sulphate (SrSO₄). A trace of iron (0.3%) was observed (see Table 3-7). This supports the theory that no significant layer of iron oxide/sulphide was present in the spool pieces which are composed of duplex steel rather than chrome resistant alloy.

Table 3-7: Characterisation of scale within spools

Elements (%m/m)	Spool Section/Ring Qa ³ Reference			
	M3 Ring 2 PR23004/01p	M3 Ring 4 PR23004/02j	M4 Ring 2 PR23004/03e	M4 Ring 4 PR23004/04d
Aluminium (Al)	<0.1	<0.1	<0.1	<0.1
Boron (B)	<0.1	<0.1	<0.1	<0.1
Barium (Ba)	35.6	48.9	37.1	28.3
Calcium (Ca)	<0.1	0.5	0.2	0.2
Chromium (Cr)	<0.1	<0.1	<0.1	<0.1
Copper (Cu)	<0.1	<0.1	<0.1	<0.1
Iron (Fe)	0.1	0.1	0.2	0.3

Elements (%m/m)	Spool Section/Ring Qa ³ Reference			
	M3 Ring 2 PR23004/01p	M3 Ring 4 PR23004/02j	M4 Ring 2 PR23004/03e	M4 Ring 4 PR23004/04d
Potassium (K)	<0.1	<0.1	<0.1	<0.1
Magnesium (Mg)	<0.1	<0.1	<0.1	<0.1
Manganese (Mn)	<0.1	<0.1	<0.1	<0.1
Molybdenum (Mo)	<0.1	<0.1	<0.1	<0.1
Sodium (Na)	<0.1	<0.1	0.2	<0.1
Nickel (Ni)	<0.1	<0.1	<0.1	<0.1
Phosphorus (P)	<0.1	<0.1	<0.1	<0.1
Lead (Pb)	<0.1	<0.1	<0.1	<0.1
Sulphur (S)	7.5	13.1	9.9	9.2
Silicon (Si)	<0.1	0.2	0.2	0.2
Strontium (Sr)	0.4	1.2	4.1	3.4
Titanium (Ti)	<0.1	<0.1	<0.1	<0.1
Vanadium (V)	<0.1	<0.1	<0.1	<0.1
Zinc (Zn)	<0.1	<0.1	<0.1	0.5
Carbon (C)	0.6	0.5	0.5	0.4
Hydrogen (H)	0.07	0.04	0.03	0.02
Nitrogen (N)	<0.05	<0.05	<0.05	<0.05
Oxygen (O)	35.0	31.2	33.3	32.7
Total	79.3	95.8	85.7	75.1

3.6. Minerva Subsea Infrastructure Overview

All subsea infrastructure within the operational area is presented within Table 3-8, along with the status, condition, and decommissioning schedule. The layout of the field infrastructure is presented in Figure 3-5. Details on the recovery methods are presented in Section 3.7.

Suspension of the pipeline occurred at the end of operational field life in September 2019. The pipeline was depressurised, cleaned, and flushed of hydrocarbons and the returns tested to confirm that the pipeline was hydrocarbon free. The final fill of the 10” pipeline and 2” chemical injection lines was completed with potable, filtered water typically treated to 500 ppm of Hydrosure, which is a corrosion inhibitor / biocide / oxygen scavenger blend. The main production line was also purged and packed with nitrogen from onshore as a final step to provide a nitrogen gas blanket at the surface isolation blind for future intervention work.

The wells were bull-headed and well barriers closed and tested to isolate the pipeline from the wells.

Chemical injection lines were depressurised and flushed. Hydraulic lines were depressurised and disconnected at the onshore gas plant to prevent inadvertent operation of the subsea valves. Electrical controls were also switched off.

After initial cessation activities, a short offshore campaign was completed in March 2021 to isolate the Minerva subsea pipeline system from the subsea trees and verify the flushed condition of the pipeline. The subsea pipeline system was isolated from the wells by cutting and removing short sections of the rigid jumper spools close to the subsea trees and installing plugs on either side of the cut sections. A total of six rigid lines were

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cut, including two of the 8" production spools and four of the 2" chemical injection spools. The short sections of rigid spool were cut using diamond wire saw and recovered to the vessel for further testing (Section 3.5.2.3).

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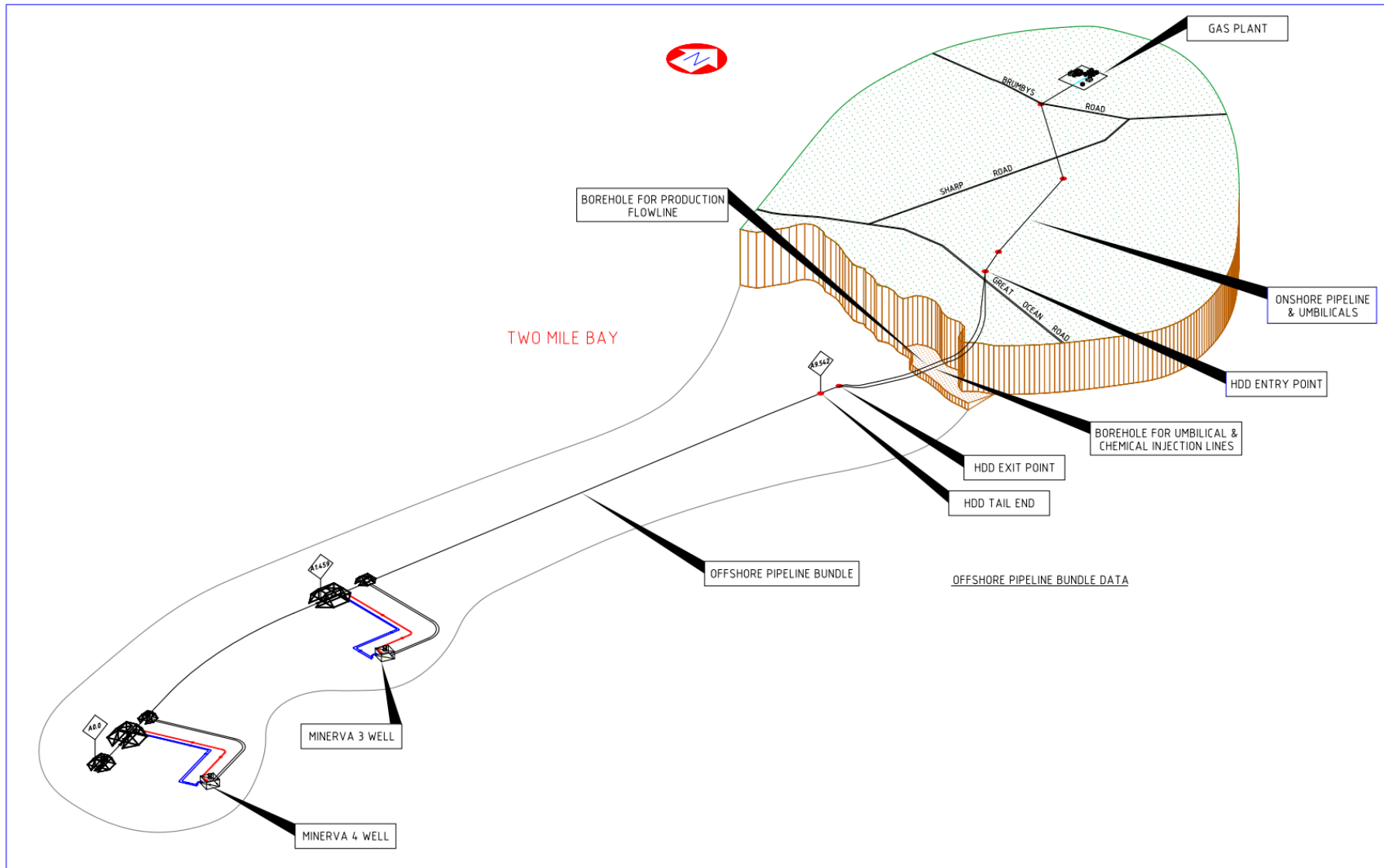


Figure 3-5: Minerva field layout

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Table 3-8: Inventory of Minerva Gas Field Infrastructure

Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition ¹	Removal under this EP?
Well Infrastructure						
Subsea trees: <ul style="list-style-type: none"> ▪ Minerva-3 ▪ Minerva-4 	2	Height: 4 m Width: 3-4 m Length: 3-4 m	~32 Te	Primarily steel Small amounts of synthetic materials (e.g., O-ring seals, gaskets etc.)	Current Status: Hydraulic valves and surface-controlled subsurface safety valve closed-in and pressure tested in 2019. Flowlines have been disconnected and outlets plugged. Burial: Unburied. Condition: Good overall condition, no evidence of corrosion. 100% coverage of marine growth but light thickness.	No, removed under the Minerva Plug and Abandonment EP.
Wellheads: <ul style="list-style-type: none"> ▪ Minerva-1 ▪ Minerva-2A ▪ Minerva-3 ▪ Minerva-4 	4	Height: ~3-4 m Diameter: ~19"	~10 Te	Steel	Current Status: Remains on seabed as installed. Burial: Installed partially below the seabed. Condition: Good overall condition, no evidence of corrosion. 100% coverage of marine growth but light thickness.	Minerva-2A to be removed under this EP if NOPSEMA accept Minerva-2A as plugged and abandoned. If not, it will be removed under the Minerva Plug and Abandonment EP. All other wellheads removed under the Minerva Plug and Abandonment EP.
Permanent Guide Bases (PGB) <ul style="list-style-type: none"> ▪ Minerva-1 ▪ Minerva-2A ▪ Minerva-3 ▪ Minerva-4 	4	Height: ~2.5 m Width: ~2 m Length: ~2 m	~ 10 Te	Steel	Current Status: Remains on seabed as installed. Burial: Unburied Condition: Good overall condition, no evidence of corrosion. 100% coverage of marine growth but light thickness. Damage to one of the guideposts on Minerva-1 was identified.	Minerva-2A to be removed under this EP if NOPSEMA accept Minerva-2A as plugged and abandoned. If not, it will be removed under the Minerva Plug and Abandonment EP. All other PGBs removed under the Minerva Plug and Abandonment EP.

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition ¹	Removal under this EP?
<i>Pipeline Bundle</i>						
Production Gas 10" Rigid Steel Pipeline	1	Total length in Commonwealth waters: ~5 km Internal diameter: ~248 mm Outer diameter: Varies from ~273 mm to ~280 mm Wall thickness: Varies from ~16 mm to ~13 mm	Total Weight: 1117 Te Carbon Steel – 480 Te Concrete Coating – 613 Te External Coating/ Anodes – 24 Te	Commonwealth waters (from KP 4.95 to KP 0) Carbon steel 40 mm thickness concrete weight coating Field joint coating	Current Status: Isolated from production wells. Flushed with treated seawater (Hydrosure 500 ppm) in 2019. Residual fluid contains < 30 ppm hydrocarbons. Burial: Predominately buried (assumed self-buried to top of pipe). Condition: No damage or degradation observed.	Yes Commonwealth waters component only.
Chemical Injection 2" Flowlines	2	Total length in Commonwealth waters: ~5 km Outer diameter: ~60 mm Wall thickness: Varies from ~5 mm to ~11 mm	Total Weight: 79 Te Carbon Steel – 65 Te External Coating/ Anodes – 14 Te	Steel High density polyethylene Field joint coating	Current Status: Isolated from production wells. Flushed with treated seawater (Hydrosure 500 ppm) in 2019. Burial: Predominately buried as per flowline. Condition: No damage or degradation observed.	Yes Commonwealth waters component only.

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition ¹	Removal under this EP?
Electro-Hydro Umbilical (EHU)	1	Total length in Commonwealth waters: ~5 km Outside diameter: Varies from ~119 mm to ~163 mm Number of hose cores: Varies from 14-28 Number of electrical cores: Varies from 2-4	134 Te	Nylon Polyethylene Galvanised steel Copper Polymer base fillers.	Current Status: Disconnected from facility controls onshore (de-energised and isolated in a capped secure closure). Remains on seabed with residual hydraulic fluid (Aqua Glycol HW 510 and Aqua Link 324, 13 m ³ total volume in Commonwealth waters). Burial: Predominately buried as per flowline. Condition: No damage or degradation observed.	Yes Commonwealth waters component only.
Piggyback Clamps	821	360 x 446 x 400 mm	~ 3.1 Te	Polypropylene Nickel-based alloy	Current Status: Design life of 20 years. Clamps still holding piggybacked lines onto the pipeline. Burial: Predominately buried. Condition: Good condition.	Yes Commonwealth waters component only.
Spools and Flying Leads						
Production 8" Spools	2	Length: ~85 m Outer Diameter: ~219 mm	Total Weight: 17 Te Carbon Steel – 7 Te Concrete Coating – 10 Te	Duplex stainless steel Concrete weight coating Polypropylene corrosion coating	Current Status: Flushed with treated seawater and subsequently cut near the subsea trees with pressure retaining plugs installed. Residual fluids contains < 30 ppm hydrocarbons. Burial: Predominately buried Condition: Good condition, no damage or debris identified.	Yes

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition ¹	Removal under this EP?
			External Coating/ Anodes – <1 Te			
Chemical Injection 2" Spools	4	Length: ~85 m Outer Diameter: ~60 mm	Carbon Steel = 17 Te	Carbon steel Epoxy coating.	Current Status: Flushed with treated seawater and subsequently cut near the subsea trees with pressure retaining plugs installed. Residual fluids contains < 30 ppm hydrocarbons. Crossover line between Minerva-3 and Minerva-4 unable to be flushed due to inoperable tree valves and left filled with MEG. Burial: 90% buried. Condition: Good condition, no damage or debris identified.	Yes
Electrical Flying Leads (EFL)	2	Length: ~135m	0.2 Te	Polyethylene Steel Copper	Current Status: Remaining on seabed as installed, connected to allow ongoing monitoring of subsea trees prior to P&A. Burial: EFLs for Minerva-3 are predominately buried, EFLs for Minerva-4 are intermittently buried with some elevated sections. Condition: Good overall condition, no damage or debris identified.	Yes
Hydraulic Flying Leads (HFL)	2	Length: ~160 m	1.6 Te	Thermoplastic Polyethylene inner and outer sheath Polymer base fillers	Current Status: Disconnected and remaining on seabed as installed. Burial: HFLs for Minerva-3 are predominately buried, HFLs for Minerva-4 are intermittently buried. Condition: Good overall condition, no damage or debris identified.	Yes

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition ¹	Removal under this EP?
Auxiliary Structures						
Umbilical Termination Assembly (UTA)	2	Minerva-3 UTA: <ul style="list-style-type: none"> ▪ Length: ~2 m ▪ Width: ~1 m ▪ Height: ~1 m 	~1.8 Te	Carbon steel Inconel connections	Current Status: Remains on seabed as installed. Burial: Unburied. Condition: Good overall condition, no damage or debris identified.	Yes
		Minerva-4 UTA: <ul style="list-style-type: none"> ▪ Length: ~1 m ▪ Width: ~1 m ▪ Height: ~1 m 	~1.2 Te			
Pipeline End Module Assembly (PLEM)	1	Length: ~3 m Width: ~1 m Height: ~1 m	~3 Te	Steel Epoxy coating	Current Status: Remains on seabed as installed. Burial: Unburied. Condition: Good overall condition, no damage or debris identified.	Yes
SSIV Protective Structures	2	Minerva-3 Length: ~3.8 m Width: ~0.5 m Height: ~1 m	~2 Te	Steel Epoxy coating	Current Status: Remains on seabed as installed. Burial: Unburied. Condition: Good overall condition, no damage or debris identified.	Yes
		Minerva-4 Length: ~3.8 m Width: ~0.5 m Height: ~1 m	~2 Te			
Umbilical Termination Assembly (UTA) Protective Structures	2	Length: ~10 m Width: ~8 m Height: ~3 m	~10.4 Te	Steel Epoxy coating	Current Status: Remains on seabed as installed. Burial: Unburied. Condition: Good overall condition, no damage or debris identified.	Yes

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition ¹	Removal under this EP?
SSIV Protective Structures	2	Length: ~11 m Width: ~7 m Height: ~2 m	~7.2 Te	Steel Epoxy coating	Current Status: Remains on seabed as installed. Burial: Unburied. Condition: Good overall condition, no damage or debris identified.	Yes
Pipeline End Valve Assembly (PLEM) Protective Structure	1	Length: 7.7 m Width: 6.5 m Height: 2.1 m	~3.1 Te	Steel Epoxy coating	Current Status: Remains on seabed as installed. Burial: Unburied. Condition: Good overall condition, no damage or debris identified.	Yes
Stabilisation Materials						
SSIV scour protection	8	2 m x 4 m x 0.2 m (4 off) 2 m x 1.5 m x 0.2 m (4 off)	~21 Te	Concrete Polyurethane	Current Status: Remains on seabed as installed. Burial: Partially buried. Condition: Good overall condition.	Yes
SSIV ballast weights	8	1.8 m x 0.9 m x 0.3 m	36 Te total	Steel	Current Status: Remains on seabed as installed. Condition: Good overall condition. Burial: Mostly buried.	Yes
UTA scour protection	16	2 m x 2.5 m x 0.2 m (8 off) 2 m x 1.5 m x 0.2 m (8 off)	~17 Te	Concrete Polyurethane	Current Status: Remains on seabed as installed. Burial: Partially buried. Condition: Good overall condition.	Yes
UTA ballast weights	8	2.3 m x 1.0 m x 0.3 m	54 Te total	Steel	Current Status: Remains on seabed as installed. Condition: Good overall condition. Burial: Mostly buried.	Yes

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Infrastructure	Quantity	Approximate Dimensions	Weight	Primary Materials	Current Status and Condition ¹	Removal under this EP?
PLEM Scour Protection	6	2 m x 2.5 m x 0.2 m (2 items) 2 m x 1.5 m x 0.2 m (4 items)	~7 Te	Concrete Polyurethane	Current Status: Remains on seabed as installed. Burial: Partially buried. Condition: Good overall condition.	Yes
PLEM ballast weights	4	1.8 m x 0.9 m x 0.3 m	18 Te total	Steel	Current Status: Remains on seabed as installed. Condition: Good overall condition. Burial: Mostly buried.	Yes
HFL stabilisation grout bags	25	Length: ~1.25 m Width: ~1.25 m Height: ~0.5 m	37.5 Te in total	Grout	Current Status: Remains on seabed as installed. Burial: Partially buried. Condition: Good overall condition.	Yes
EFL stabilisation sandbags	29	Length: ~0.5 m Width: ~0.3 m Height: ~0.2 m	~0.75 Te in total	Sand	Current Status: Remains on seabed as installed. Burial: Partially buried. Condition: Good overall condition.	Yes

¹ Based on findings of the 2021 Subsea Survey (BHP, 2021) and Well and Flowline Handover (BHP, 2020).

3.7. Infrastructure Removal Activities

3.7.1. Pipeline Bundle Recovery

The pipeline bundle (Figure 3-6) will be recovered by cutting it into sections on the seabed and recovering the sections. Sediment relocation may be required to de-bury the pipeline bundle, which would be done using a mass flow excavator (MFE) deployed from and recovered to a vessel. Relocated sediment will be distributed around the pipeline.

Using a winch or crane, a cutting tool will be deployed to the seabed (e.g., shears, chop saw, or diamond wire saw). An ROV will be used to assist deployment and position the cutting tool on the pipeline. The cutting tool will cut the pipeline and then reposition approximately 12 m along the pipeline for the next cut location.

An ROV will monitor and confirm positioning throughout the cutting process. This cutting process is repeated along the length of the pipeline (or discrete sections of the pipeline bundle).

A grab will be deployed from the vessel using a crane or a winch to recover the pipeline bundle sections. An ROV will monitor for engagement between the grab and the pipeline bundle section. The vessel crane will then lift the pipe section clear of the seabed and recover through the water column. The contents of the pipeline, chemical injection lines and umbilical will freely drain into the water column. The pipeline bundle section will be recovered to the vessel and laid horizontally in a storage area on the deck. This operation will be repeated until all sections have been recovered to the vessel deck.

If required, marine growth cleaning may be performed on the vessel using high pressure water jets, in parallel with line recovery steps. The marine growth that is removed will be discharged to sea during the cleaning process.

Planned discharges during pipeline removal include:

- potable water treated with Hydrosure with oil-in-water content of less than 30 ppm from within the pipeline and chemical injection lines
- hydraulic fluid in the umbilical (Aqua Glycol HW 510 and Aqua Link 324)
- small quantities of concrete rubble (if cut with shears)
- small quantities of concrete and steel swarf (if cut using drop saw or diamond wire saw)
- traces of scale dislodged from within the pipeline (if present)
- marine growth removed from the pipeline

Refer to Section 3.11 for information on disposal arrangements for the recovered pipeline bundle.



Figure 3-6: Minerva Pipeline Bundle

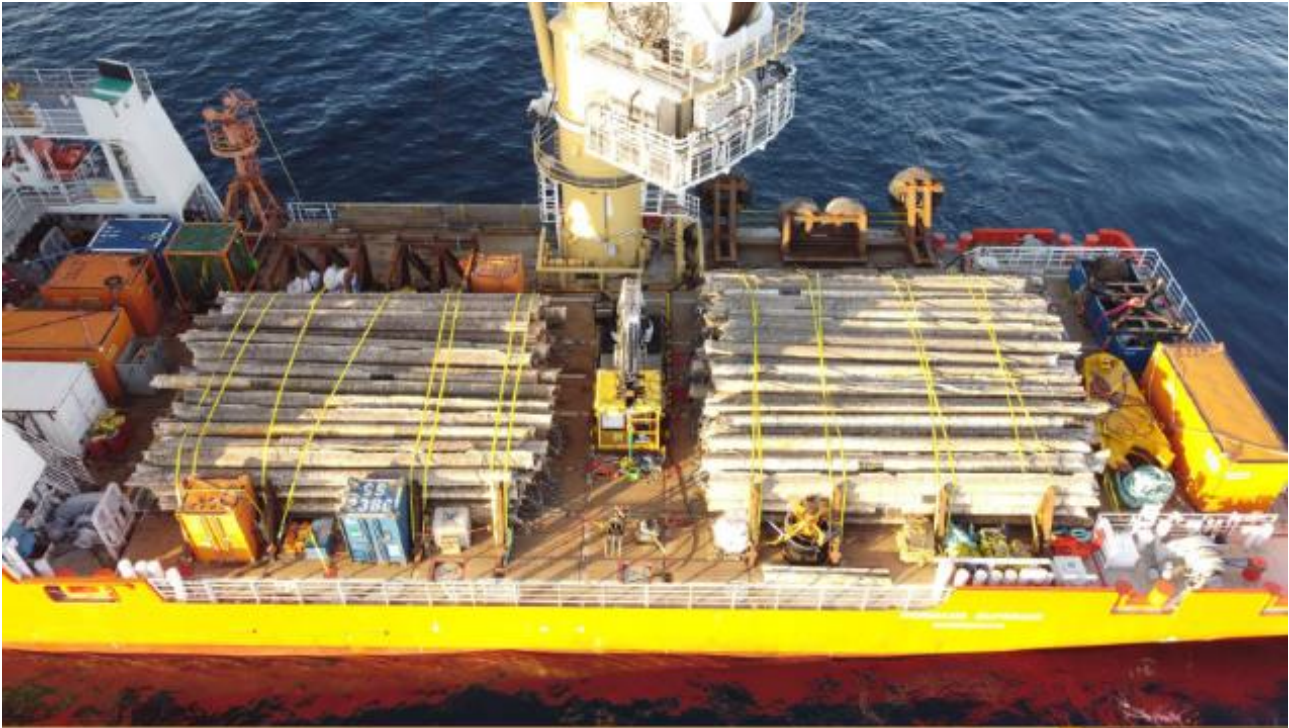


Figure 3-7: Indicative construction vessel deck layout with recovered subsea equipment

3.7.2. Protective Structure Recovery

The following protective structures installed on parts of the pipeline will be removed:

- 2 x umbilical termination assembly (UTA) protective structures
- 2 x subsea safety isolation valve (SSIV) protective structures
- 1 x pipeline end manifold (PLEM) protective structures

Protective structures are separate items and had been placed on top of the pipeline bundle after pipelay.

Protective structures may be lifted from the seabed either directly or using a subsea basket to facilitate recovery. An ROV will be deployed to depth from the vessel to verify integrity for lift direct to vessel or subsea basket.

Refer to Section 3.11 for information on disposal arrangements for the recovered protective structures.

3.7.3. Rigid Spools Recovery

The two subsea trees (Minerva-3 and Minerva-4) were connected to the pipeline bundle by two 8" production rigid spools and three 2" chemical injection rigid spools. The spools were cut following cessation of production to isolate the trees from the pipeline and chemical injection lines.

The spools will be cut into sections on the seabed using a cutting tool (e.g., hydraulic shears, diamond wire saw, drop saw, etc.) before being removed. An ROV will monitor and confirm positioning throughout the process. This cutting process is repeated along the length of the spool. Once all sections are cut, the cutting tool will be recovered to the vessel.

The vessel crane will deploy a mechanical grab to the first cut spool section location. An ROV will monitor grab position ensuring the grab successfully engages with the pipe. The vessel crane will then lift the spool section clear of the seabed and recover through the water column. The spool section will be recovered to, and laid on, the vessel deck in a corral storage area. This operation will be repeated until all sections have been recovered to the vessel deck.

Marine growth cleaning (if required) will be performed using high pressure water jets and returned to the sea. Planned discharges rigid spools recovery include:

- potable water treated with Hydrosure with oil-in-water content of < 30 ppm from within the spools

- small quantities of steel swarf
- traces of scale dislodged from within the production spool (if present)
- marine growth removed from the pipeline
- < 3.6 m³ of MEG from the 2" cross-over spool between Minerva-3 and Minerva-4 trees (which was not flushed as the valves controlling this line were inoperable)

Refer to Section 3.11 for information on disposal arrangements for the recovered protective structures.

3.7.4. Flying Leads Recovery

There are 2 x hydraulic and 2 x electrical flying leads supplying the two subsea trees with electric/signal and hydraulic power. Refer to Table 3-8 for details on flying leads.

Flying leads will be disconnected from the Xmas trees using suitable tooling. Protective caps will be installed on the flying lead connection points on the Xmas trees to preserve the trees for plug and abandonment activities. Following disconnection from the Xmas trees, flying leads will be cut into sections on the seabed by an ROV using a cutting tool. The resulting sections of flying leads will be stored in a basket and recovered to the vessel.

Planned discharges during flying leads recovery include the hydraulic fluid within the flying leads (Aqua Glycol HW 510 and Aqua Link 324).

Refer to Section 3.11 for information on disposal arrangements for the recovered flying leads.

3.7.5. Secondary Stability Recovery

Secondary stabilisation features, such as sandbags, mattresses, and grout bags, have been used to provide stability for EFLs and HFLs between connection points (UTA to XT). Scour protection was installed at UTAs, SSIVs and PLEM. Details on stabilisation material is provided in Table 3-8.

An ROV will be deployed to locate the bags, mats, and mattresses. Mattress recovery tooling will be deployed to recover the concrete mattresses. Smaller stabilisation items may be recovered using a basket.

The vessel crane will lower the basket to a pre-determined position on the seabed. ROV to pick up secondary stability features and drop them into the subsea basket. This operation will be repeated for all material or until the subsea basket's capacity is met.

The subsea basket will be reconnected to the vessel crane to be lifted through the water column and stored on board at a pre-designated area of the vessel.

Planned discharges during secondary stability material recovery may include release of marine growth cleaned from the material at the surface.

Refer to Section 3.11 for information on disposal arrangements for the recovered secondary stabilisation material.

3.7.6. Wellheads and Xmas Trees

Removal of the Minerva 2A wellhead and guide base will be undertaken if NOPSEMA accepts Woodside's assertion that the Minerva-2A well is plugged and abandoned. If NOPSEMA does not accept Minerva-2A is plugged and abandoned, the Minerva-2A wellhead will be removed under the Minerva Plug and Abandonment EP.

Removal of wellheads from Minerva-1, Minerva-3 and Minerva-4 and recovery of the Xmas trees from Minerva-3 and Minerva-4 is within the scope of the Minerva Plug and Abandonment EP.

Options for removing and recovering the Minerva-2A wellhead are described in Table 3-9. The wellhead is planned to be cut below the seabed using either mechanical or abrasive water jet cutting methods. Up to 1 m of the wellheads may extend above the seabed if they are cut using a diamond wire saw; diamond wire saw is a contingency method that will only be used if a cut below the mudline cannot be achieved. Once the wellhead is cut, the wellhead will be recovered to the vessel and transported to shore.

The Minerva-3 and Minerva-4 Xmas trees will be prepared for plug and abandonment activities. This may include inspections, testing of valve functionality, verification of barriers, and marine growth removal using sulphamic acid washes. Residual acid wash will be discharged to the sea.

Table 3-9: Wellhead Cutting Methods

Method	Description	MODU / Vessel Type
Mechanical internal cutting	Method uses mechanical cutting tool that are inserted into the inner well casing and rotated. Cut may be completed below the mudline.	Subsea support vessel with ROV capability
Abrasive water jet cutting	Method uses a system of high-pressure water entrained with grit and flocculant pumped via an umbilical from a vessel to a subsea cutting tool that is inserted into the inner well casing. Cut may be completed below the mudline	Subsea support vessel with ROV capability
External cutting using diamond wire saw	Method uses a hydraulically driven motor and pulley system to operate an industrial diamond cutting wire via a vessel or ROV. May require up to 1 m of well infrastructure to be left in situ above the mud line due to external cut.	Subsea support vessel with ROV capability

3.8. Management of Subsea Infrastructure

The petroleum activity includes management of the subsea infrastructure in VIC/L22 and VIC/PL33 until removal activities have been completed. Management of the subsea infrastructure aims to:

- keep the subsea infrastructure in suitable condition to allow successful removal
- meets obligations under Section 572(2) of the OPGGS Act
- meets the requirement of Direction 3 in General Direction 831.

Field management activities that may be performed on Minerva subsea infrastructure include inspection, maintenance, and repair activities (IMR) (Section 3.8.1) and decommissioning environmental surveys (Section 3.8.2).

3.8.1. Inspection, Maintenance and Repair

There is no intention to carry out routine IMR activities prior to field abandonment beyond those required for removal of the Minerva subsea infrastructure. This intention is justified as follows:

- The subsea infrastructure is isolated from the wells.
- The subsea infrastructure is filled with fluids that pose little or no risk to the environment (e.g., treated potable water with residual hydrocarbons < 30 ppm, residual hydraulic fluid, small volumes of MEG, etc.).
- Stability of the subsea infrastructure on the seabed has been proven during surveys, most recently in March 2021, where no deviation from the original pipeline route or equipment locations were identified.
- Pipeline corrosion is not an integrity concern as the pipeline is flushed of hydrocarbons with treated potable water and the external cathodic protection measurements confirm there is approximately 40-60 years of design life remaining in the cathodic protection system.
- Subsea equipment corrosion is not considered a concern as all structures inspected still have anodes and no subsea equipment is connected to a hydrocarbon source.

- Recovery methods for equipment will not rely on the integrity of the original lifting points, unless confirmed via inspection during recovery activities to be adequate. Alternate rigging methods will be utilised, such as use of equipment lifting baskets, grapples and purpose designed tooling.
- Recovery of all equipment is planned to occur prior to 30 June 2025. The integrity of the equipment is reliably predicted to be such that all equipment can be removed prior to (and beyond) this date.

Non-routine IMR may be required after significant external events, such as storms or third-party interactions, or when anomalous conditions are detected.

Inspection may be undertaken to verify the integrity of the infrastructure for recovery as part of the equipment removal activities. If any defects are identified, the engineered removal methods will be adjusted accordingly, rather than repairs conducted.

IMR activities are typically undertaken from an offshore support vessel via an ROV. IMR activities may include the following:

- general visual inspection
- multibeam echo sounder (MBES)
- marine growth removal
- sediment relocation
- corrosion surveys.

IMR activities may require deployment frames / baskets which are placed on the seabed. These frames / baskets typically have a perforated base with a seabed footprint of about 15 m². The frames / baskets are recovered to the vessel at the end of the activity.

Woodside considers the condition of the Minerva subsea infrastructure, the schedule for removal activities, and the IMR activities described above meet section 572(2)) OPGGS Act – ‘maintain in good condition and repair all structures that are, and all equipment and other property that is, in the title area and used in connection with the operations’.

3.8.2. Decommissioning Environmental Surveys

As described in Section 2.4, Woodside intends to apply to surrender VIC/L22 and VIC/PL33 at the completion of the activities described in this EP and the Minerva Plug and Abandonment EP (Table 3-4). Woodside will carry out an environmental monitoring program as part of decommissioning activities to demonstrate compliance with the requirements of section 270 of the OPGGS Act. Woodside’s decision-making process in relation to surrender of petroleum titles in Commonwealth waters is shown in Figure 3-8.

NOPSEMA’s *Section 270 Consent to Surrender Title - NOPSEMA Advice (2022)* outlines the regulator’s expectations in relation to monitoring and surveys. These requirements expectations may be met by works undertaken during removal or equipment and vessels mobilised to undertake discrete survey or monitoring scopes.

The monitoring program design will consider all historical petroleum activities that have occurred in the petroleum titles, including:

- historical exploration activities (e.g., exploration wells)
- construction activities (e.g., development drilling, installation of equipment etc.)
- production activities (e.g., production-related discharges)
- decommissioning activities (e.g., potential contaminant releases and seabed disturbance during equipment removal)

Given the nature and scale of the environmental impacts and risks from the historical, present, and future petroleum activities in VIC/L22 and VIC/PL33, the following environmental values are expected to be monitored:

- Visual observations of the seabed to determine the nature and extent of seabed disturbance and quantify benthic habitats

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- Measurements of potential contaminants to sediments, such as metals, metalloids, and hydrocarbons
- Confirmation of removal of all Minerva subsea infrastructure required to be removed
- Confirmation of the as left condition of the seabed

The monitoring program will:

- use recognised monitoring techniques and methods to quantify the environmental values that may have been impacted by petroleum activities (e.g., recognised laboratory methods, laboratories accredited by the National Association of Testing Authorities for the analyses, compliance with method holding times, etc.)
- sample representatively throughout the petroleum titles, including at varying distances from known sources of impact (e.g., wells) and in areas not thought to have been impacted
- include appropriate replication (e.g., sufficient replication of sites and samples within sites) in order to quantify variability in the environmental values being measured
- include quality control measures – these will be dependent on the nature of sampling (e.g., duplicate, triplicate, and blank samples for metals in sediments)
- where practicable, sampling at locations where previous environmental monitoring (e.g., Advisian, 2021) to enable comparisons over time
- confirm the removal of property (i.e., an as-left survey)

The analysis of the data collected during the monitoring program will be used to determine if:

- the impacts and risks from the petroleum activities within the petroleum titles are of an acceptable level
- any damage to the seabed has been made good
- the conservation of natural resources has been provided for.

The design, implementation, and analysis of a monitoring program that addresses the points above will be done by suitably qualified and experienced environmental scientists. A recognised monitoring design, such as beyond before-after control-impact (e.g., Underwood, 1994) will be implemented. Where practicable, hypotheses and statistical tests will be clearly stated and a priori power analysis done to inform sampling design. Acceptable levels will consider relevant guidelines, consultation outcomes, Woodside's policies, and the principles of ESD.

If unacceptable impacts are detected as having potentially occurred, Woodside will undertake additional monitoring to confirm whether the impact is unacceptable and determine the nature and spatial extent of the impact. Woodside will then review measures to reduce the unacceptable impact to ALARP. Woodside will consider remediation as part of the ALARP assessment. The ALARP assessment will depend on the nature and scale of any unacceptable impact.

Given the following points, Woodside considers unacceptable impacts within the petroleum titles to be highly unlikely:

- all equipment will be removed
- environmental sampling within the petroleum titles to date has shown no contamination of the environment
- the environmental impacts and risks from the equipment removal activities are managed to a level that is acceptable and ALARP.

Progress towards completion of the work program will be communicated to NOPSEMA in the annual reports required by General Direction 831 and the environmental performance report listed in Section 9.10.2.

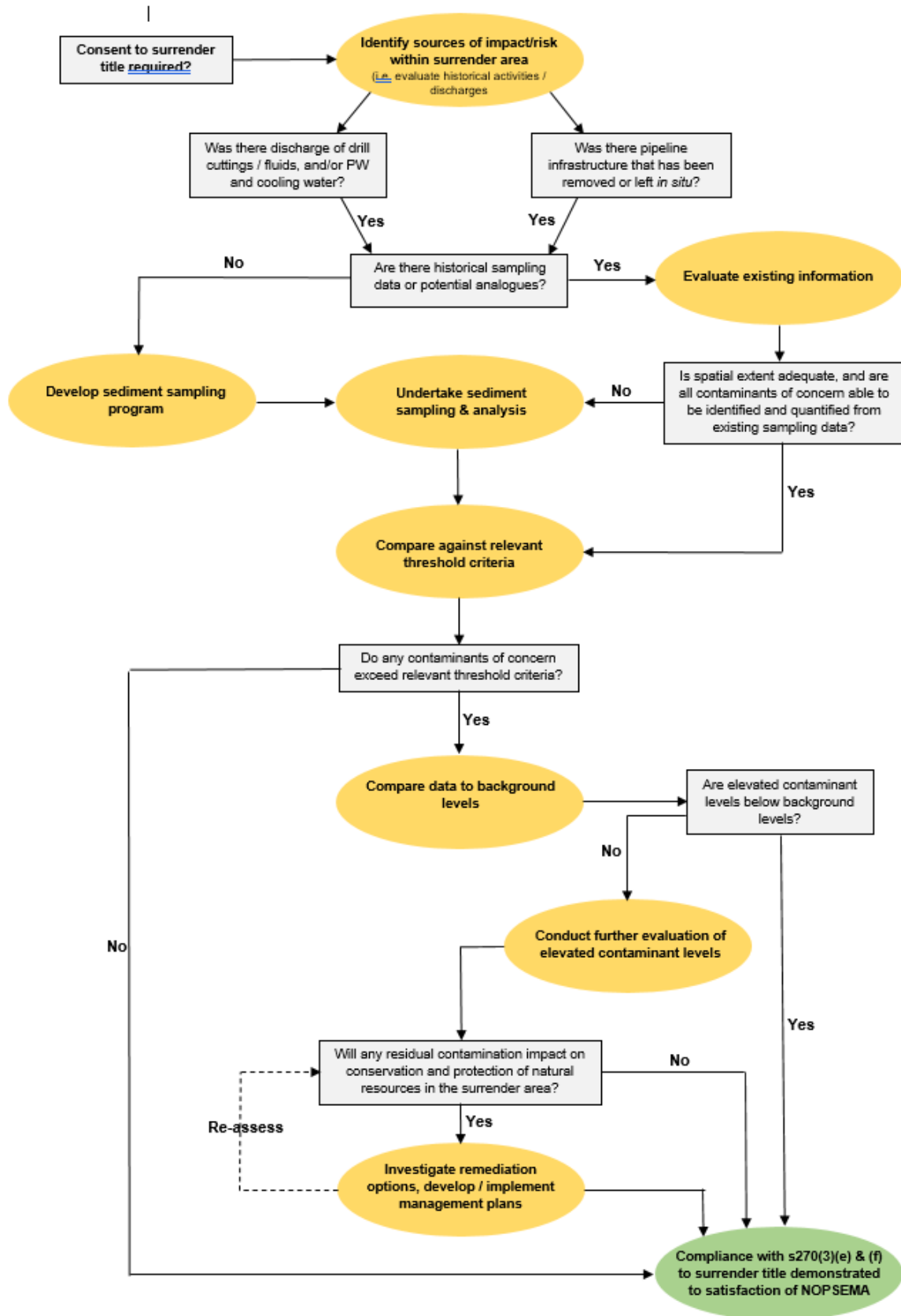


Figure 3-8: Decision support framework for sediment sampling for title surrender

3.9. Project Vessels and Support Vehicles

3.9.1. Vessel Types and Specifications

A single multi-purpose construction vessel (MCV) is expected to be the only vessel required to remove the Minerva subsea infrastructure and undertake field management activities. A summary of MCV characteristics is provided in Table 3-10. Ad hoc support may be provided as required by a small local supply vessel. Support vessel visits to the MCV are expected to be infrequent and of short duration, as the MCV will change crews and reprovision when returning recovered Minerva subsea infrastructure to shore.

All vessels will have a suitable survey class for the activities it is performing.

Table 3-10: Summary of indicative project vessel characteristics

Vessel Type	Maximum Persons Onboard	Typical Length (m)	Typical Draught (m)	Fuel Type	Largest Fuel Tank Volume (m ³)
MCV	120	120	8	MDO	330
Local supply vessel	15	20	2	MDO	3

3.9.2. Vessel Operations

Vessels will be subject to Woodside’s Marine Management Procedure. All required audits and inspections will assess compliance with the laws of the international shipping industry, which include safety and environmental management requirements, and maritime legislation including International Convention for the Prevention of Pollution from Ships 1973 as modified by the Protocol of 1987 (MARPOL) and other International Maritime Organisation (IMO) standards.

Vessels will display navigational lighting and external lighting required for safe operations. Lighting levels will be determined primarily by operational safety and navigational requirements under relevant legislation, specifically the Commonwealth *Navigation Act 2012*. The vessels will be lit to maintain operational safety on a 24-hour basis.

A temporary 500 m cautionary zone will be established around the MCV for the duration of the decommissioning activities.

The MCV will transport equipment and materials between the operational area and port during subsea infrastructure removal activities.

The MCV will produce routine discharges to the sea in accordance with relevant requirements, such as:

- utility discharges, such as sewage, grey water, cooling water, reverse osmosis brine and putrescible wastes
- deck drainage
- bilge water
- cooling water
- ballast water.

Vessels will run on marine diesel oil (MDO); no intermediate or heavy fuel oils will be used. All project vessels will use diesel-powered generators for power generation. There are no planned vessel or helicopter refuelling operations within the operational area during the petroleum activity.

The MCV will not anchor in the operational area under normal operating conditions, instead using dynamic positioning (DP) to maintain position.

3.9.3. Remotely Operated Vehicles

Work-class ROVs deployed from the MCV will be used throughout the petroleum activity. ROVs may be used for:

- visual inspections and observations
- seabed and hazard survey
- marine growth removal
- sediment relocation
- subsea rigging, handling, and cutting
- tooling and cutting infrastructure
- recovery of dropped objects
- as-found/as-left seabed surveys.

3.9.4. Helicopters

Whilst unlikely, helicopters may be used during the petroleum activity for unplanned transfers to or from the MCV (e.g., medical evacuation), as required. Helicopter operations within the operational area are limited to take-off and landing on the helideck.

3.10. Chemical Selection and Assessment

The chemicals that may be released to the environment during the petroleum activity include:

- residual chemicals within the Minerva subsea equipment
- chemicals used during the removal of the Minerva subsea infrastructure and IMR activities.

Chemicals onboard the MCV will be stored as required within appropriate storage facilities. Hazardous chemicals will be stored within bunds or in secure areas to prevent accidental overboard discharges.

3.10.1. Chemical Assessment

All chemicals that are planned to be released or discharged to the marine environment during the petroleum activity will be evaluated using the chemical assessment process described below. This ensures the potential impacts are ALARP, acceptable, and meet Woodside's expectation for environmental performance.

There are some chemicals that may be released to the environment that are within the Minerva subsea infrastructure (e.g., residual chemicals used to treat the potable water within the pipeline). These were all selected in accordance with the chemical selection requirements in the in-force EP at the time the chemicals were introduced to the Minerva subsea infrastructure. Existing chemicals within the Minerva subsea infrastructure will not be retroactively assessed using the chemical selection process described in this EP.

The chemical assessment process follows the principles outlined in the Offshore Chemical Notification Scheme (OCNS), which manages chemical use and discharge in the United Kingdom and the Netherlands. It applies the requirements of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention). The OSPAR Convention is widely accepted as best practice for chemical management.

All chemical substances listed on the OCNS ranked list of registered products have an assigned ranking based on toxicity and other relevant parameters, such as biodegradation and bioaccumulation, in accordance with one of the two schemes (refer to Figure 3-9).

- Hazard Quotient (HQ) Colour Band: Gold, Silver, White, Blue, Orange and Purple (listed in order of increasing environmental hazard), or
- OCNS Grouping: E, D, C, B or A (listed in order of increasing environmental hazard). Used for inorganic substances, hydraulic fluids and pipeline chemicals only.

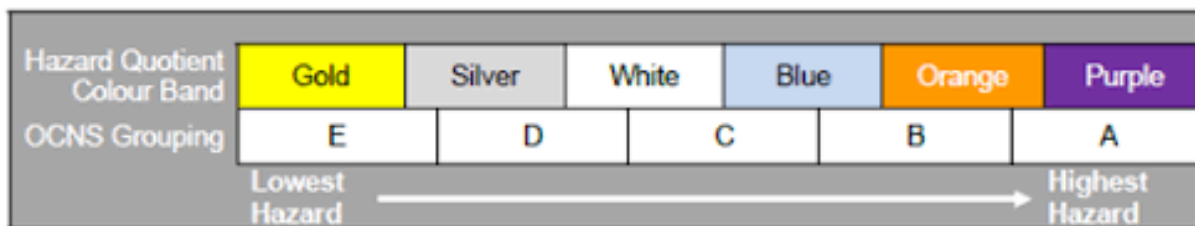


Figure 3-9: OCNS Ranking Scheme

Chemicals fall into the following assessment types:

- No further assessment: Chemicals with a HQ band of Gold or Silver or an OCNS ranking of E or D with no substitution or product warnings do not require further assessment. Such chemicals do not represent a significant impact on the environment under standard use scenarios and are, therefore, considered ALARP and acceptable.
- Further assessment/ALARP justification required: The following types of chemicals require further assessment to understand the environmental impacts of discharge into the marine environment:
 - Chemicals with no OCNS ranking
 - Chemicals with a HQ band of White, Blue, Orange, Purple or OCNS ranking of A, B, or C
 - Chemicals with an OCNS product or substitution warning.

3.10.2. Further Assessment/ALARP Justification

This includes assessing the ecotoxicity, biodegradation and bioaccumulation of the chemicals in the marine environment in accordance with the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) Hazard assessment and the Department of Mine and Petroleum (DMP) *Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline* (Department of Mines and Petroleum (DMP), 2013).

3.10.2.1. Ecotoxicity

Chemical ecotoxicity is assessed using the criteria used by CEFAS to group chemicals based on ecotoxicity results (Table 3-11). If a chemical has an aquatic or sediment toxicity within the criteria for the OCNS grouping of D or E, this is considered acceptable in terms of ecotoxicity.

Table 3-11: CEFAS OCNS grouping based on ecotoxicity results

Initial Grouping	A	B	C	D	E
Results for aquatic-toxicity data (ppm)	<1	>1-10	>10-100	>100-1,000	>1,000
Results for sediment toxicity data (ppm)	<10	>10-100	>100-1,000	>1,000-10,000	>10,000

Note: Aquatic toxicity refers to the *Skeletonema costatum* EC50, *Acartia tonsa* LC50 and *Scophthalmus maximus* (juvenile turbot) LC50 toxicity tests; sediment toxicity refers to *Corophium volutator* LC50 test.

3.10.2.2. Biodegradation

The biodegradation of chemicals is assessed using the CEFAS biodegradation criteria, which align with the categorisation outlined in the *Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline* (DMP, 2013).

CEFAS categorises biodegradation into the following groups:

- Readily biodegradable: results of more than 60% biodegradation in 28 days to an OSPAR harmonised offshore chemical notification format (HOCNF) accepted ready biodegradation protocol.

- Inherently biodegradable: results more than 20% and less than 60% to an OSPAR HOCNF accepted ready biodegradation protocol or result of more than 20% by OSPAR accepted inherent biodegradation study.
- Not biodegradable: results from OSPAR HOCNF accepted biodegradation protocol or inherent biodegradation protocol are less than 20%, or half-life values derived from aquatic simulation test indicate persistence.

Chemicals with more than 60% biodegradation in 28 days to an OSPAR HOCNF accepted ready biodegradation protocol are considered acceptable in terms of biodegradation.

3.10.2.3. Bioaccumulation

The bioaccumulation of chemicals is assessed using the CEFAS bioaccumulation criteria, which align with the categorisation outlined in the *Chemical Assessment Guide: Environmental Risk Assessment of Chemicals used in WA Petroleum Activities Guideline* (DMP, 2013).

The following guidance is used by CEFAS:

- Non-bioaccumulative: $\text{LogPow} < 3$, or $\text{BCF} \leq 100$ and molecular weight is ≥ 700 .
- Bioaccumulative: $\text{LogPow} \geq 3$ or $\text{BC} > 100$ and molecular weight is < 700 .

Chemicals that meet the non-bioaccumulative criteria are considered acceptable.

If a product has no specific ecotoxicity, biodegradation or bioaccumulation data available, options to be considered are as follows:

- Environmental data for analogous products can be referred to where chemical ingredients and composition are largely identical.
- Environmental data may be referenced for each separate chemical ingredient (if known) within the product.

3.10.2.4. Alternatives

If no environmental data is available for a chemical or if the environmental data does not meet the acceptability criteria outlined above, potential alternatives for the chemical will be investigated, with preference for options with a HQ band of Gold or Silver, or OCNS ranking of Group E or D with no substitution or product warnings.

If no more environmentally suitable alternatives are available, further risk reduction measures (e.g., controls related to use and discharge) will be considered for the specific context and implemented where relevant to ensure the risk is ALARP and acceptable.

3.10.2.5. Decision

Once the further assessment/ALARP justification has been completed, concurrence is required from the relevant environment advisor that the environmental risk as a result of chemical use is ALARP and acceptable.

3.11. Waste Management

Non-hazardous waste materials will be stored onboard the project vessels in suitable containers (segregated from hazardous materials) for transport to shore for disposal/recycling in accordance with local regulations.

All hazardous waste generated will be document and tracked, segregated from other waste streams, and stored in suitable containers. Recyclable hazardous wastes, such as oils and batteries, will be stored separately from non-recyclable materials. All wastes will be disposed of onshore at a licenced facility.

All waste streams will be classified and managed in accordance with applicable legislative requirements, or in accordance with international guidance where applicable, for example:

- *Commonwealth Hazardous Waste (Regulation of Exports and Imports) Act 1989*, which implements the Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (the Basel Convention)
- Victoria Environment Protection Regulations 2021
- International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL Convention)

- International Finance Corporation: EHS Guidelines – Environmental Waste Management.

The recovered infrastructure will be managed through Woodside's contracting strategy which will include an infrastructure disposal strategy where waste management solutions will be assessed against the principles of the waste management hierarchy described in Sections 7.7 and 9.5.

Options for plastics include identifying potential recycling, upcycling, waste to energy opportunities. Pathways are subject to inspection and sampling of the material once received at the onshore laydown site. Where it is deemed no other feasible alternative exists, material requiring landfill will be disposed of at an appropriate licensed facility after sampling is conducted to determine contaminant levels where appropriate. Further details are provided in Sections 7.7 and 9.5.

4. Description of Environment

In accordance with regulations 21(2) and 21(3) of the Environment Regulations, this section describes the existing environment that may be affected (EMBA) by the activity (planned and unplanned, as described in Sections 7 and 8), including details of the particular relevant values and sensitivities of the environment, which were used for the risk assessment.

The description of the environment applies to two spatial areas:

- the operational area – the area where planned activities will occur and includes the area encompassing a 1,000 m radius around the Minerva subsea infrastructure and pipeline listed in Table 3-2.
- the EMBA – the environment that may be affected by the petroleum activity and is based on the, for the petroleum activity the EMBA is based on the worst case extent of hydrocarbon spill scenario and is shown in Figure 4-1.

The information contained in this section has been used to inform the evaluation and assessment of the environmental impacts and risks presented in Sections 7 and 8 of this EP. The level of detail is appropriate to the nature and scale of the impacts and risks to the particular values and sensitivities. A detailed and comprehensive description of the environment in the operational area and EMBA is provided in Appendix D.

4.1. Determination of the Environment that May Be Affected

In accordance with regulations 21(2) and 21(3) of the Environment Regulations, this section describes the existing environment that may be affected (EMBA) by the activity described in Section 3. This section includes details of the relevant environmental values and sensitivities, which inform the environmental impact and risk assessments.

The EMBA is the largest spatial extent in which the petroleum activity could have a consequence on the surrounding environment. For this EP, the EMBA is the potential spatial extent of surface, shoreline, and in-water hydrocarbons at concentrations above ecological impact thresholds in the event of the worst-case credible spill scenario (Section 8.1). The ecological impact thresholds used to delineate the EMBA are defined in Table 4-1. The worst-case credible spill scenario for this EP is accidental vessel collision resulting in breach of project vessel fuel tanks.

Woodside recognises that hydrocarbons may be visible beyond the EMBA at lower concentrations than the ecological impact thresholds defined in Table 4-1. These visible hydrocarbons are not expected to cause ecological impacts. In respect of this, an additional socio-cultural EMBA is defined as the potential spatial extent within which social-cultural impacts may occur from changes to the visual amenity of the marine environment. Receptors relevant to the socio-cultural EMBA include Commonwealth and State marine protected areas (MPAs), areas of cultural heritage value, areas of tourism and recreation, and commercial and traditional fisheries. For this EP, the socio-cultural EMBA for surface hydrocarbons encompasses an area wider than the boundaries of the EMBA for ecological impacts. The EMBA and socio-economic EMBA are shown in Figure 4-1 and described in Table 4-1.

The EMBA presented does not represent the predicted coverage of any one hydrocarbon spill or a depiction of a slick or plume at any particular point in time. Rather, the areas are a composite of a large number of theoretical paths, integrated over the full duration of the simulations under various metocean conditions.

Table 4-1: Hydrocarbon spill thresholds used to define EMBA, socio-cultural EMBA and planning area for scientific monitoring

Hydrocarbon Type	EMBA ¹	Socio-cultural EMBA ¹	Planning Area for Scientific Monitoring
Surface	10 g/m ² This represents the minimum oil thickness (0.01 mm) at which ecological impacts (e.g., to birds and marine mammals) are expected to occur.	1 g/m ² This represents a wider area where a visible sheen may be present on the surface and, therefore, the concentration at which socio-cultural impacts to the visual amenity of the marine environment may occur. However, it is below concentrations at which ecological impacts are expected to occur. This low exposure value also establishes the planning area for scientific monitoring (NOPSEMA, 2019).	
Dissolved	50 ppb This represents potential toxic effects, particularly sublethal effects to highly sensitive species (NOPSEMA, 2019). As dissolved hydrocarbons are within the water column and not visible, impacts to socio-cultural receptors are associated with ecological impacts. Therefore, dissolved hydrocarbons at this threshold also represent the level at which socio-cultural impacts may occur.		10 ppb This low exposure value establishes the planning area for scientific monitoring (based on potential for exceedance of water quality triggers) (NOPSEMA, 2019).
Entrained	100 ppb This represents potential toxic effects, particularly sublethal effects to highly sensitive species (NOPSEMA, 2019). As entrained hydrocarbons are within the water column and not visible, impacts to socio-cultural receptors are associated with ecological impacts. Therefore, entrained hydrocarbons at this threshold also represent the level at which socio-cultural impacts may occur.		
Shoreline	100 g/m ² This represents the threshold that could impact the survival and reproductive capacity of benthic epifaunal invertebrates living in intertidal habitat.	10 g/m ² This represents the volume where hydrocarbons may be visible on the shoreline but is below concentrations at which ecological impacts are expected to occur.	N/A

¹ Further details, including the source of the thresholds used to define the EMBA in this table, are provided in Section 8.1.

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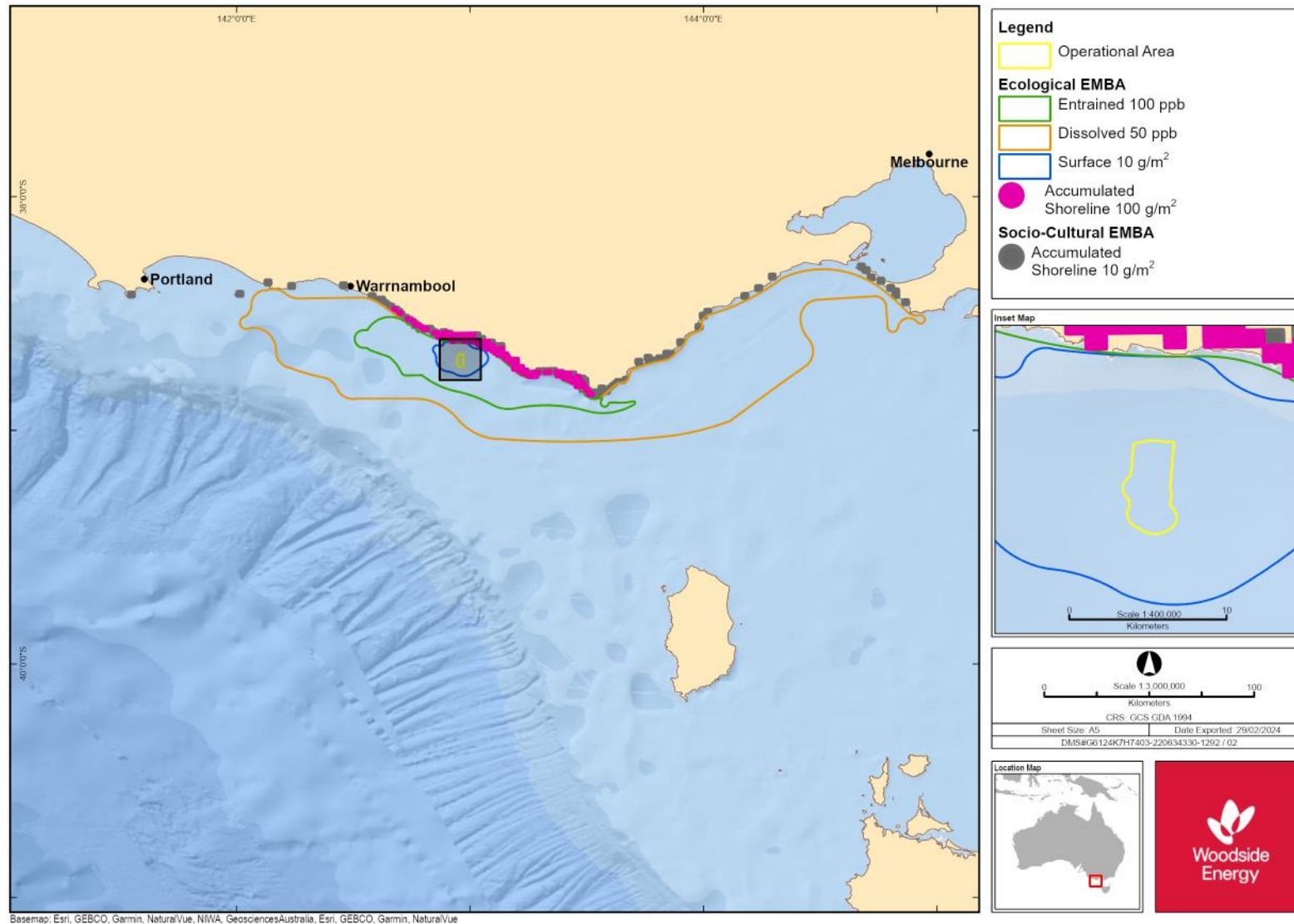


Figure 4-1: Environment that may be affected by the petroleum activity

4.2. Overview

Regulation 21(2) of Environment Regulations states that “the environment plan must:

- 21(2)(a) Describe the existing environment that may be affected by the activity; and
- 21(2)(b) Include details of the particular relevant values and sensitivities (if any) of that environment”.

Regulation 21(3) of the Environment Regulations states that “Without limiting paragraph 21(2)(b), particular relevant values and sensitivities may include any of the following:

- 21(3)(f) Any values and sensitivities that exist in, or in relation to, part or all of:
 - a Commonwealth marine area within the meaning of that Act; or
 - Commonwealth land within the meaning of that Act”.

This section summarises environmental values and sensitivities, including physical, biological, socio-economic and cultural features in the marine and coastal environment that are relevant to the operational area and the EMBA. Searches for matters of national environmental significance (MNES) and other matters protected by the EPBC Act were undertaken for the operational area and the EMBA using the Protected Matters Search Tool (PMST).

A summary of the information derived from the PMST, Bioregional Plans and the identified fauna Recovery Plans of relevance to the operational area and EMBA is provided in this section. A comprehensive description of the environmental values and sensitivities relevant to the Minerva Field and associated EMBA is provided in the Description of Environment for the Minerva Field (Appendix D), inclusive of copies of the PMST Reports.

4.2.1. Bioregions

The operational area is Commonwealth waters of the South East Marine Region. The ecological EMBA overlaps the following Integrated Marine and Coastal Regionalisation of Australia (IMCRA) Provincial Bioregions (Figure 4-2):

- Western Bass Strait Shelf Transition (overlaps the operational area)
- Bass Strait Shelf Province (61 km from the operational area)

Appendix D summarises the characteristics of these marine bioregions.

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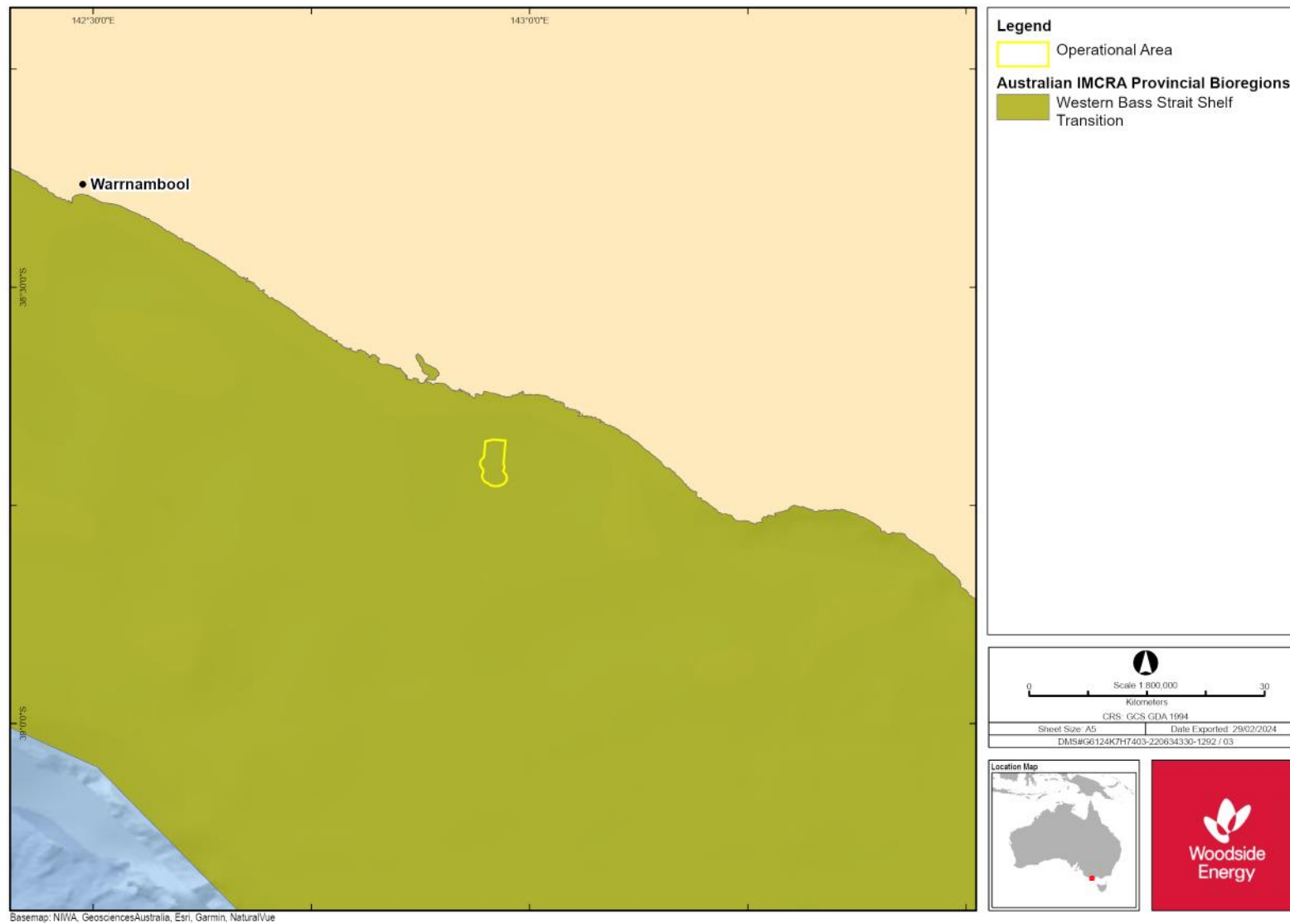


Figure 4-2: IMCRA Provincial Bioregions overlapping the operational area and EMBA

4.3. Physical Environment

4.3.1. Bathymetry

Bathymetry in the operational area is generally flat (Figure 4-3). The seabed in the operational area is characterised by unconsolidated sandy sediments, with the seabed gently sloping from the coastal waters boundary to the southernmost part of the operational area.

4.3.2. Sediment Quality

Advisian carried out sediment sampling in VIC/L22 around wellheads, the pipeline, and at several reference sites (Figure 4-5).

Sediments were characterised by sand-sized fractions (62.5 µm–2 mm), with little finer or coarser sediments at most sites sampled (Figure 4-4).

Concentrations of metals in sediments were generally consistent across all sites sampled by Advisian (Figure 4-6). None of the metals exceeded the default guideline values for toxicants in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Commonwealth of Australia, 2018). Several metals were below the limit of detection at many (or all) sites, such as cadmium, cobalt, copper, lead, and mercury (Figure 4-6). Concentrations of hydrocarbons (total petroleum hydrocarbons, total recoverable hydrocarbons, aromatic hydrocarbons, and polycyclic aromatic hydrocarbons) were below laboratory limits of detection in all samples. Radioactivity of sediments was measured for a suite of radionuclides, which were generally consistent across all sites (Figure 4-7); several were below the laboratory limits of detection and are not shown in Figure 4-7.

4.3.3. Water Quality

Sampling by Advisian (2021) in late summer showed a thermocline between approximately 30 m and 50 m water depth (Figure 4-8), which may be the result of solar heating and reduced wind-driven mixing, as the preceding months have relatively long day lengths, maximum temperatures, and low winds, compared to the rest of the year. Turbidity was low in the upper part of the water column and increased near the seabed.

Water quality sampling by Advisian (2021) showed no evidence of contamination. Samples at sites near Minerva subsea infrastructure were consistent with samples at reference sites, with no evidence of elevated levels of potential contaminants. Hydrocarbons (TPH, TRH, PAH and BTEXN) were below laboratory limits of reporting in all samples. Nutrients were consistent across all sites sampled.

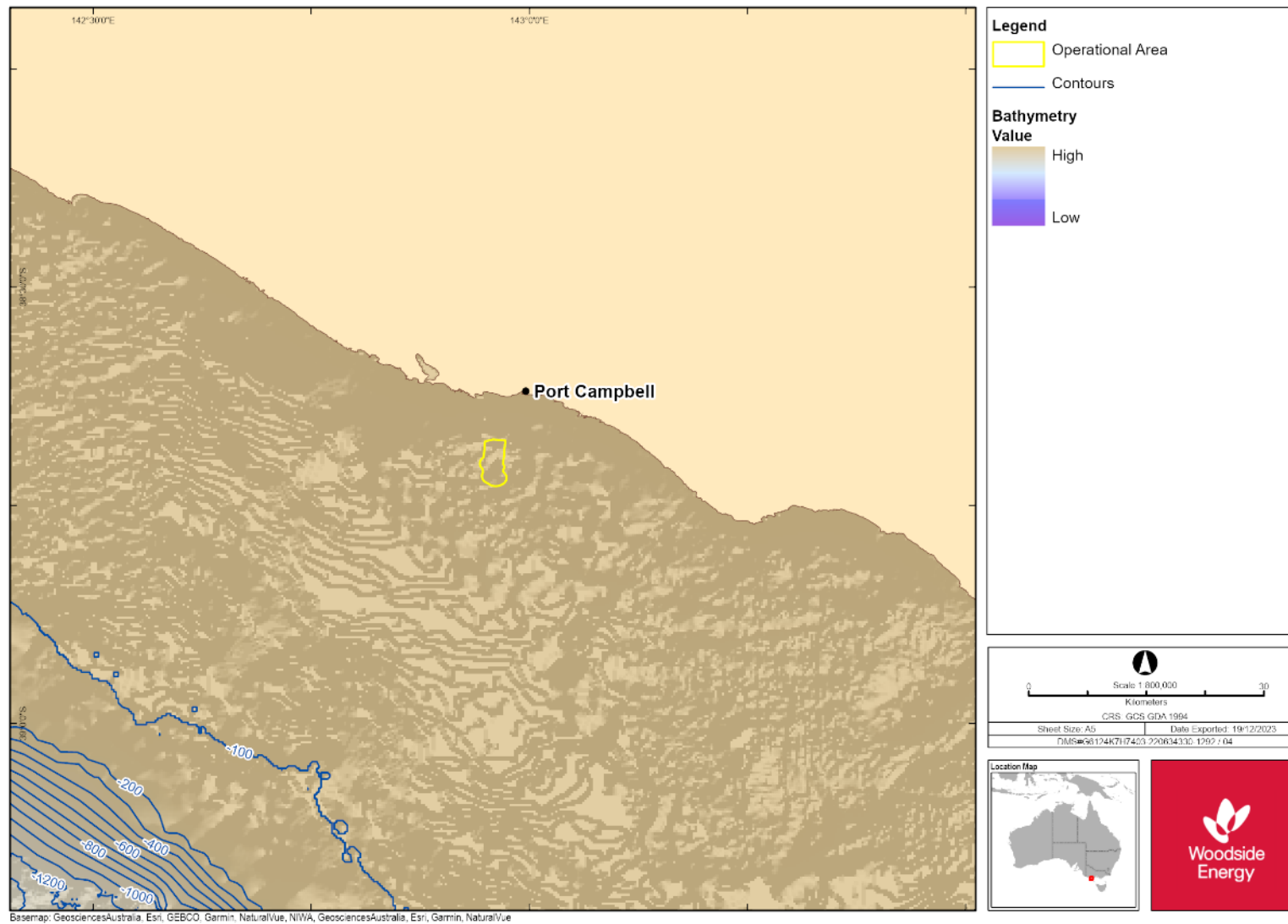


Figure 4-3: Bathymetry and seabed features in the operational area

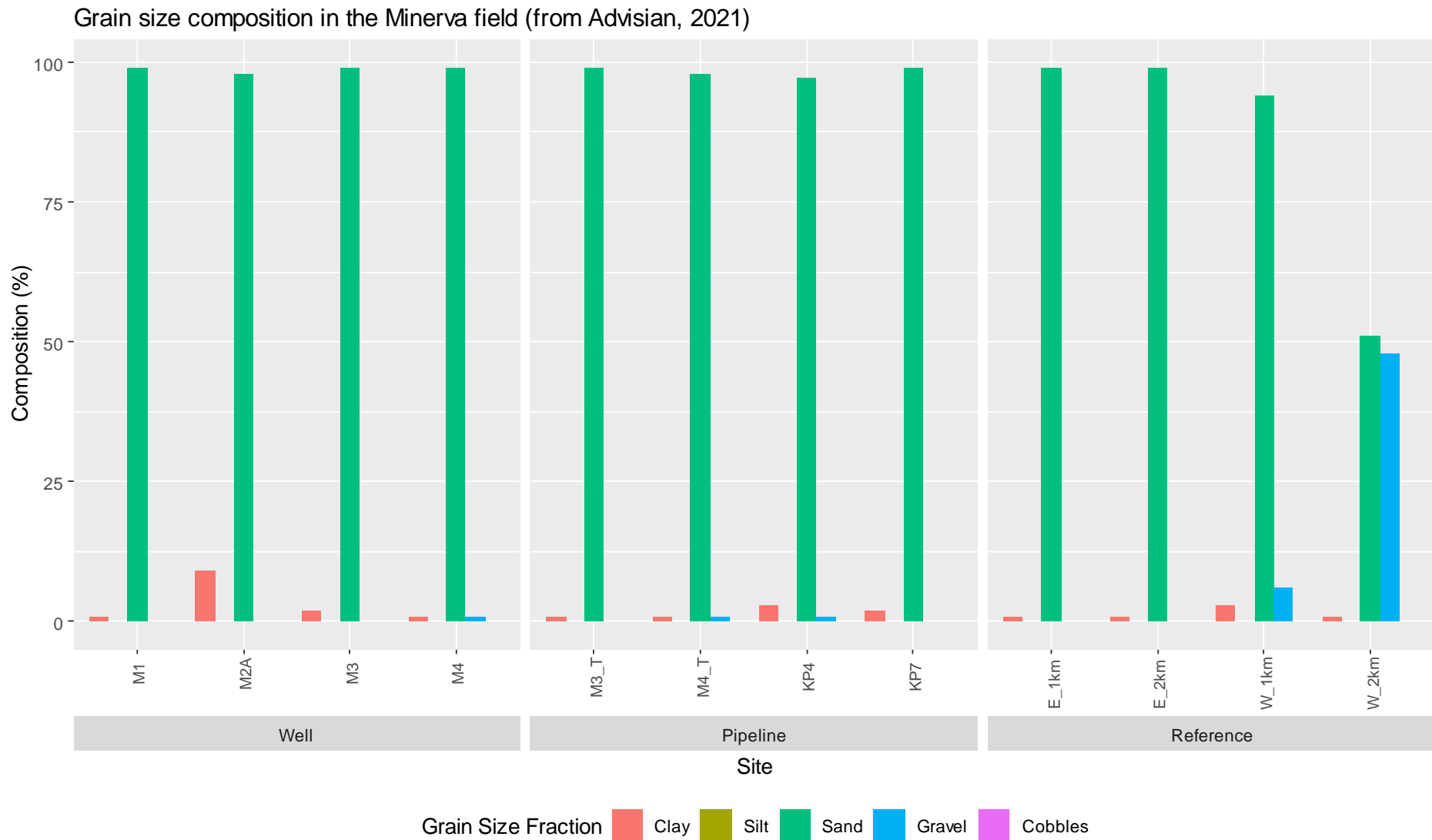


Figure 4-4: Particle size distribution at sites sampled by Advisian (2021)

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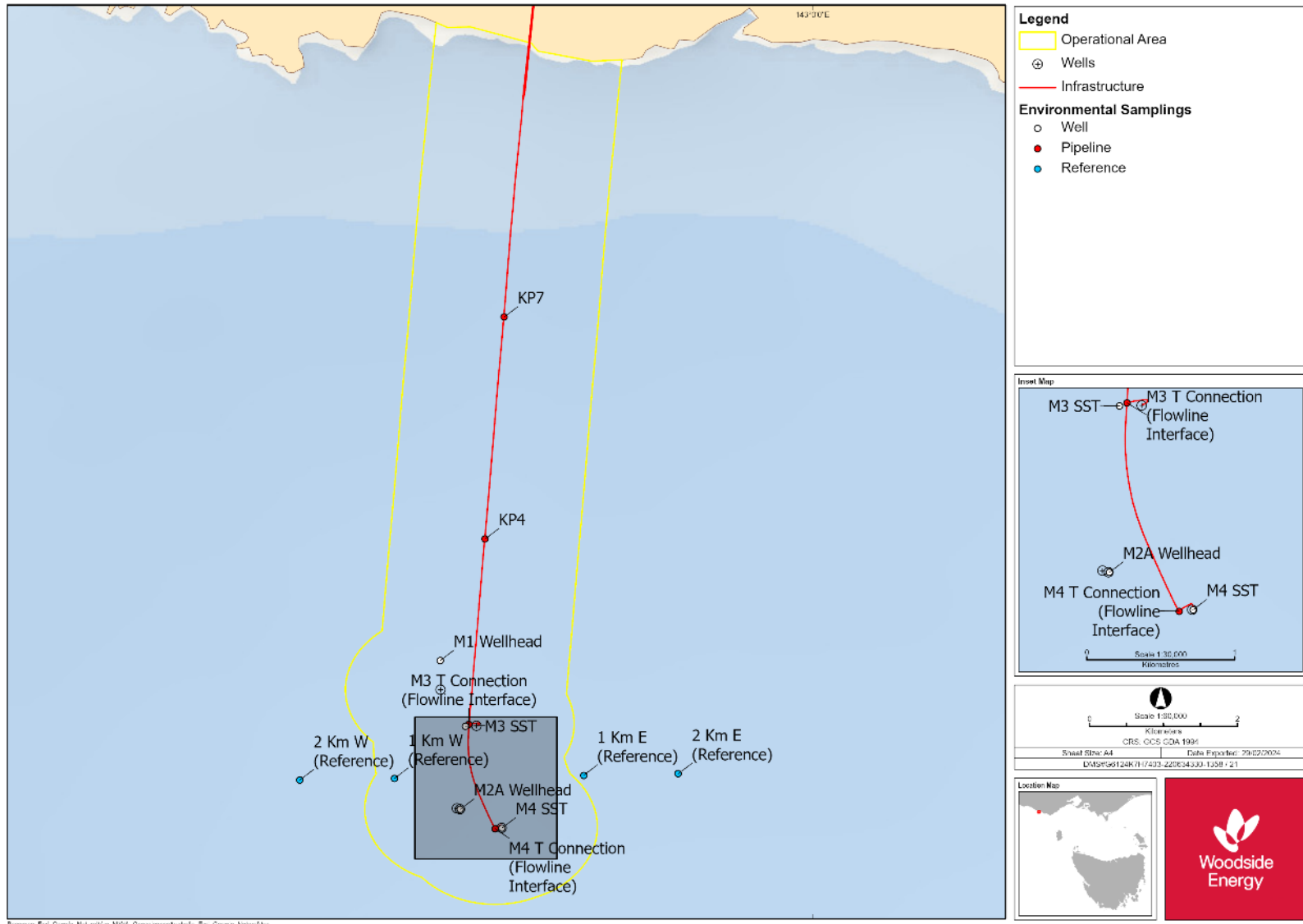


Figure 4-5: Advisian (2021) sampling sites

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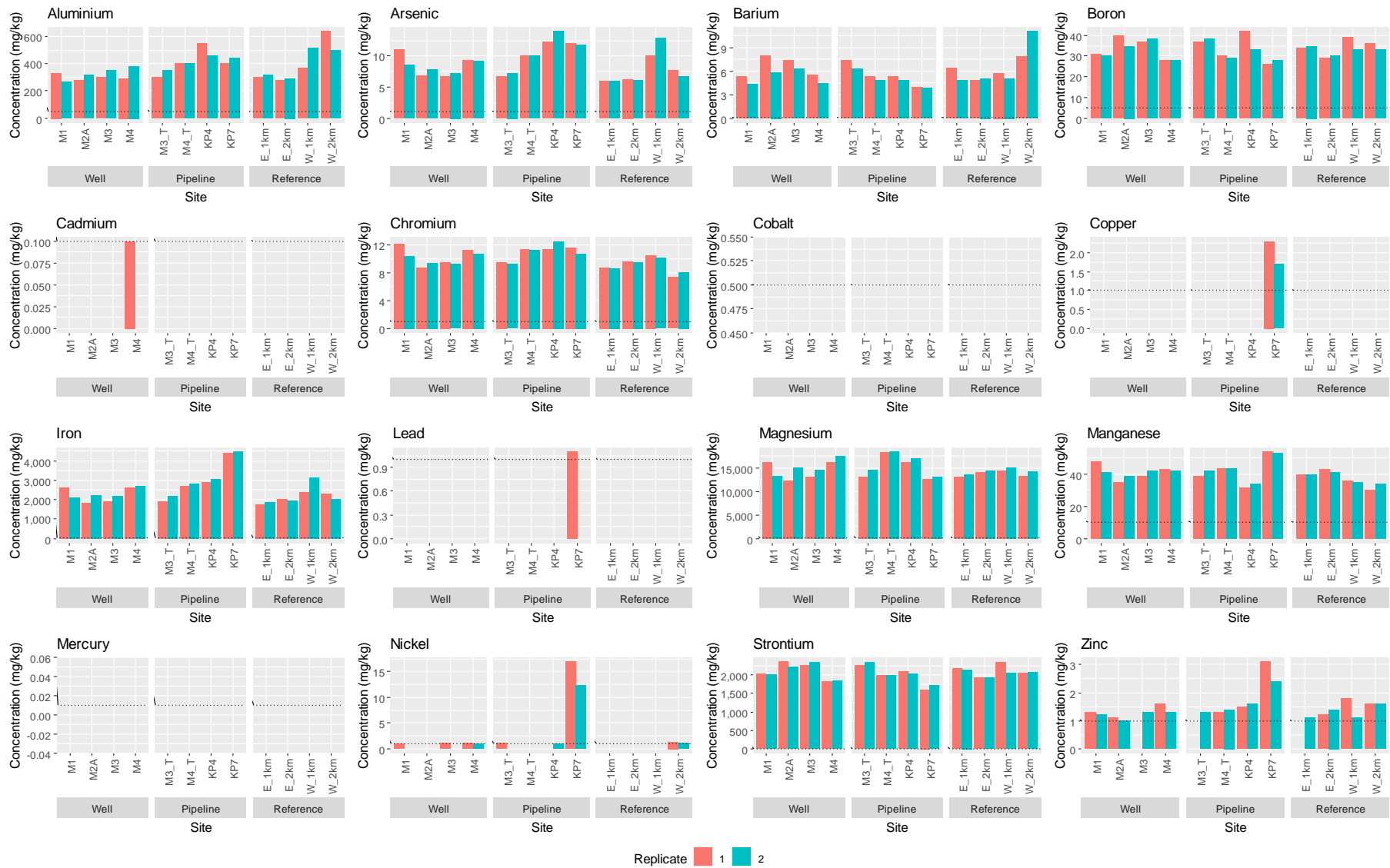


Figure 4-6: Concentrations of metals in sediments at sites sampled by Advisian (2021). Dotted lines are laboratory limits of reporting.

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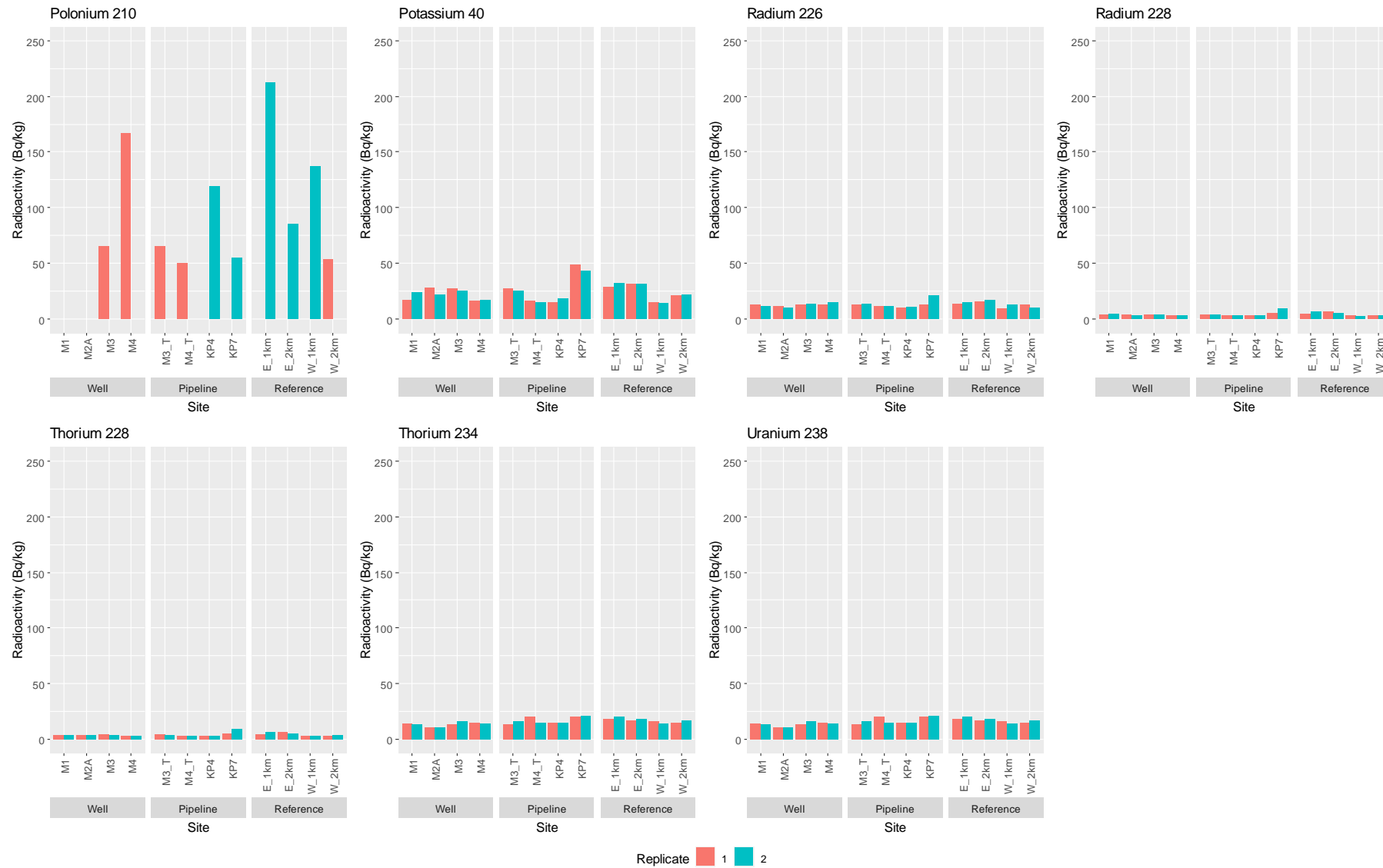


Figure 4-7: Radioactivity of radionuclides in sediments at sites sampled by Advisian (2021)

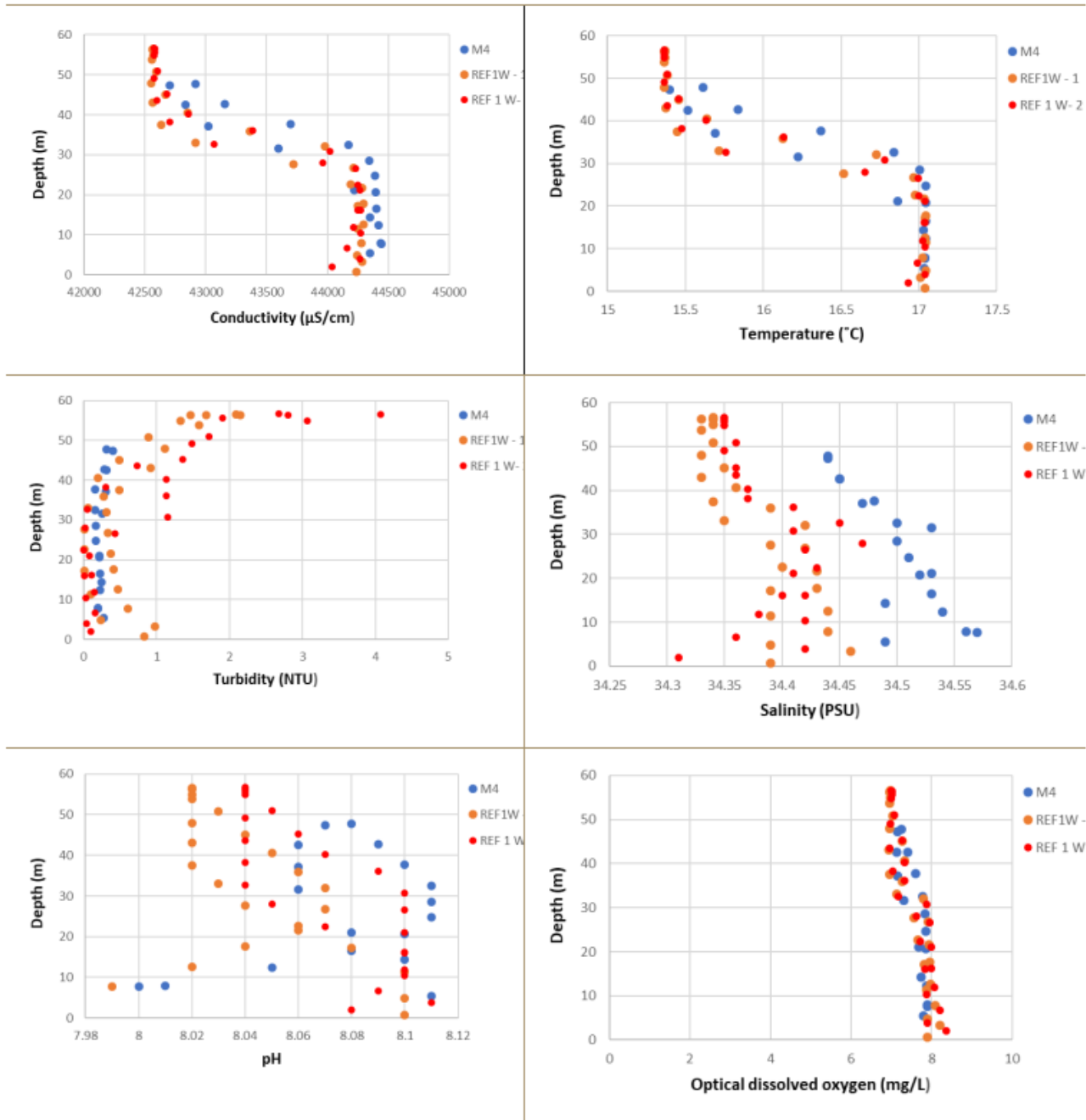


Figure 4-8: Physico-chemical profiles of the water column in VIC/L22 during late summer 2021 (Advisian, 2021)

4.4. Biological Environment

4.4.1. Benthic and Shoreline Habitats

The presence of marine and coastal habitats within the operational area and EMBA is summarised in Table 4-2 and a description of these habitats is provided in Appendix D.

Benthic habitat within the operational area is unconsolidated sediment (described in Section 4.3.2) with sparse epifauna. Infauna sampling by Advisian (2021) showed similarities between sites in terms of abundance and species richness, however taxa were variable between sites (Figure 4-9 and Figure 4-10). This may be a consequence of the relatively low number of samples taken (three samples per site) and the limited volume of

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sediment recovered by the coring method. The benthic habitat within the operational area are similar to those found in similar depths across the South East Marine Region.

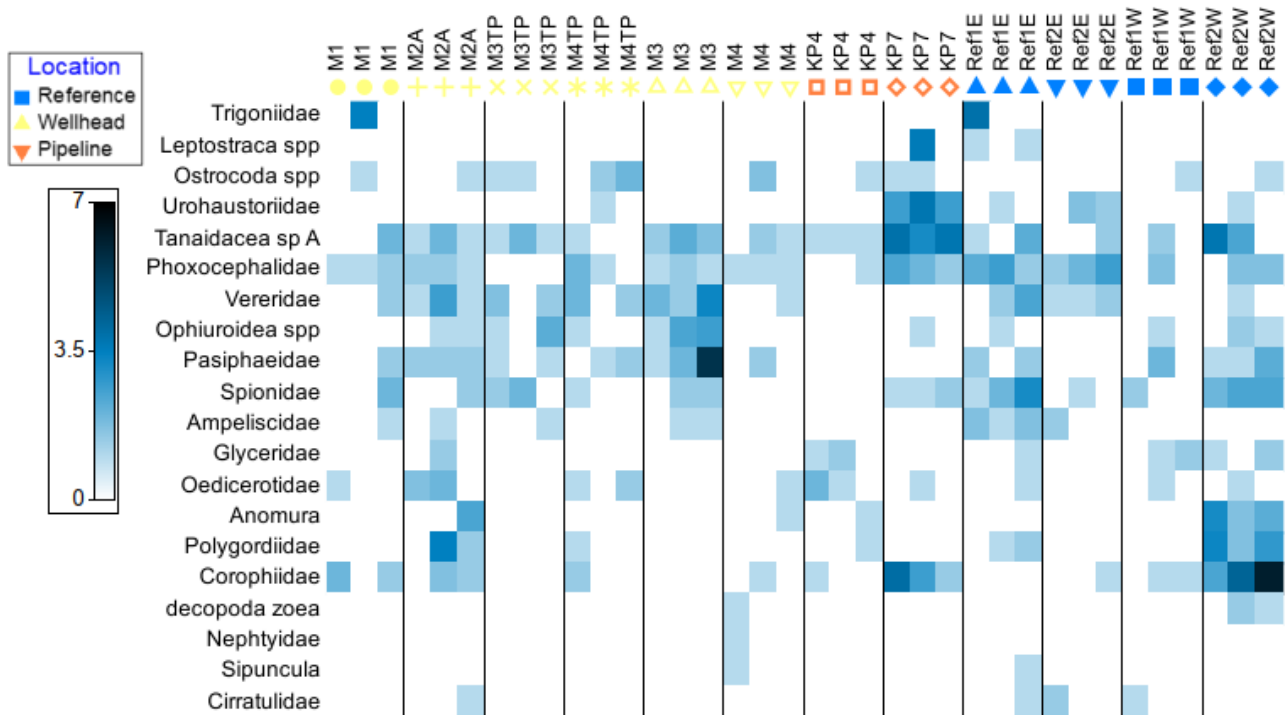


Figure 4-9: Shade Plot of the relative abundance of infauna taxa (species or family level) at sites sampled by Advisian (2021). Abundance is represented by a spectrum of shades of blue, from white (absent) to dark blue (most abundance). Only top 30 ranked infauna taxa are shown.

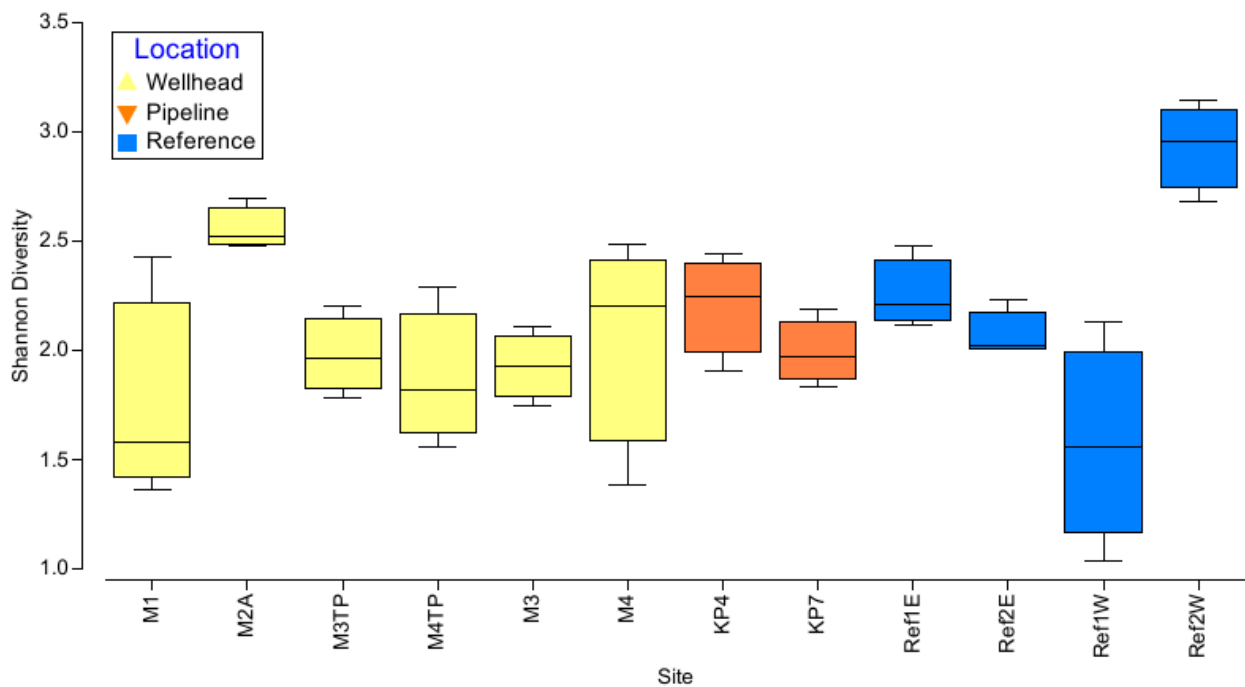


Figure 4-10: Shannon diversity index of infauna taxa at each site sampled by Advisian (2021).

Habitats identified within the EMBA includes benthic primary producers (seagrasses, algae, mangroves), soft sediment, rocky substrate, wetlands, saltmarshes, rocky shorelines, and sandy beaches.

Habitat diversity promotes a range of benthic fauna and infauna in the region and supports the wider ecosystem. Benthic primary producers are important components of ecosystems as they provide the source of energy driving food webs and provide shelter for a diverse array of organisms. Further detail on these habitat types is provided in Appendix D.

Table 4-2: Benthic and coastal habitats occurring within the operational area and EMBA

Habitat Type	Description	Operational Area	EMBA
Soft sediment	Unvegetated soft sediments are a widespread habitat in both intertidal and subtidal areas, particularly in areas beyond the photic zone. Factors such as depth, light, temperature, and the type of sediment present can vary the biodiversity and productivity of soft sediment habitat.	✓	✓
Seagrass beds	Seagrasses are marine flowering plants, with around 30 species found in Australian waters.	X	✓
Macroalgal beds	Macroalgae communities occur throughout the Australian coast and are generally found on intertidal and shallow subtidal rocky substrates. Macroalgal systems are an important source of food and shelter for many ocean species.	X	✓
Rocky shorelines	Rocky shores, including bedrock outcrops, platforms, low cliffs (less than five metres), and scarps.	X	✓
Sandy beaches	Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors (e.g., waves, currents etc).	X	✓

4.4.2. Threatened and Migratory Species

Table 4-3 presents the threatened and migratory species within the operational area and the EMBA. These include all relevant MNES protected under the EPBC Act, as identified in the PMST search for the operational area and EMBA (PMST search results are provided in Appendix D). For each species identified, the extent of likely presence is noted.

Terrestrial species (such as terrestrial mammals, reptiles, and bird species) that appear in the PMST results of the EMBA and do not have habitats along shorelines are not relevant to the petroleum activity impacts and risks and have therefore been excluded from Table 4-3.

The PMST results identified 38 species listed as ‘threatened’ species and 37 marine fauna species listed as ‘migratory’ within the operational area. Within the ecological EMBA, the PMST results identified 48 marine fauna species listed as ‘threatened’ species and 48 marine fauna species listed as ‘migratory’.

A description of the identified threatened and migratory species is included in Appendix D.

Table 4-4 provides a summary of the windows of ecological sensitivity for values identified within and around the operational area and the EMBA. These receptors are considered throughout the EP in terms of the identified potential risk.

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Table 4-3: Threatened and migratory species predicted to occur within the operational area and EMBA

Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Fishes, Sharks, and Rays					
White Shark, Great White Shark	<i>Carcharodon carcharias</i>	Vulnerable	Migratory	Species or species habitat known to occur within area	Species or species habitat known to occur within area
Shortfin Mako, Mako Shark	<i>Isurus oxyrinchus</i>	-	Migratory	-	Species or species habitat likely to occur within area
Porbeagle, Mackerel Shark	<i>Lamna nasus</i>	-	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Blue Warehou	<i>Seriolella brama</i>	Conservation Dependent	-	Species or species habitat known to occur within area	Species or species habitat known to occur within area
Southern Bluefin Tuna	<i>Thunnus maccoyii</i>	Conservation Dependent	-	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Marine Mammals					
Sei Whale	<i>Balaenoptera borealis</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Blue Whale	<i>Balaenoptera musculus</i>	Endangered	Migratory	Foraging, feeding or related behaviour known to occur within area	Foraging, feeding or related behaviour known to occur within area
Fin Whale	<i>Balaenoptera physalus</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Pygmy Right Whale	<i>Caperea marginata</i>	-	Migratory	Foraging, feeding or related behaviour may occur within area	Foraging, feeding or related behaviour may occur within area
Southern Right Whale	<i>Eubalaena australis</i>	Endangered	Migratory (as <i>Balaena glacialis australis</i>)	Species or species habitat known to occur within area	Breeding known to occur within area

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Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Dusky Dolphin	<i>Lagenorhynchus obscurus</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Humpback Whale	<i>Megaptera novaeangliae</i>	-	Migratory	Species or species habitat likely to occur within area	Species or species habitat known to occur within area
Australian Sea-lion, Australian Sea Lion	<i>Neophoca cinerea</i>	Endangered	-	-	Species or species habitat may occur within area
Killer Whale, Orca	<i>Orcinus orca</i>	-	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Reptiles					
Loggerhead Turtle	<i>Caretta caretta</i>	Endangered	Migratory	Species or species habitat likely to occur within area	Breeding likely to occur within area
Green Turtle	<i>Chelonia mydas</i>	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Leatherback Turtle, Leathery Turtle, Luth	<i>Dermochelys coriacea</i>	Endangered	Migratory	Species or species habitat likely to occur within area	Breeding likely to occur within area
Birds					
Common Sandpiper	<i>Actitis hypoleucos</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Fork-tailed Swift	<i>Apus pacificus</i>	-	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Flesh-footed Shearwater, Fleshy-footed Shearwater	<i>Ardenna carneipes</i>	-	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Sooty Shearwater	<i>Ardenna grisea</i>	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Short-tailed Shearwater	<i>Ardenna tenuirostris</i>	-	Migratory	-	Breeding known to occur within area

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Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Australasian Bittern	<i>Botaurus poiciloptilus</i>	Endangered	-	-	Species or species habitat known to occur within area
Sharp-tailed Sandpiper	<i>Calidris acuminata</i>	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Red Knot, Knot	<i>Calidris canutus</i>	Vulnerable	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Curlew Sandpiper	<i>Calidris ferruginea</i>	Critically Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Pectoral Sandpiper	<i>Calidris melanotos</i>	-	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Greater Sand Plover, Large Sand Plover	<i>Charadrius leschenaultii</i>	Vulnerable	Migratory	-	Species or species habitat likely to occur within area
Antipodean Albatross	<i>Diomedea antipodensis</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Southern Royal Albatross	<i>Diomedea epomophora</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Wandering Albatross	<i>Diomedea exulans</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Northern Royal Albatross	<i>Diomedea sanfordi</i>	Endangered	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Latham's Snipe, Japanese Snipe	<i>Gallinago hardwickii</i>	Vulnerable	Migratory	-	Species or species habitat known to occur within area
Swinhoe's Snipe	<i>Gallinago megala</i>	-	Migratory	-	Roosting likely to occur within area

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Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Pin-tailed Snipe	<i>Gallinago stenura</i>	-	Migratory	-	Roosting likely to occur within area
Blue Petrel	<i>Halobaena caerulea</i>	Vulnerable	-	Species or species habitat may occur within area	Species or species habitat may occur within area
Swift Parrot	<i>Lathamus discolor</i>	Critically Endangered	-	-	Species or species habitat likely to occur within area
Bar-tailed Godwit	<i>Limosa lapponica</i>	-	Migratory	-	Species or species habitat known to occur within area
Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit	<i>Limosa lapponica baueri</i>	Endangered	-	-	Species or species habitat known to occur within area
Southern Giant-Petrel, Southern Giant Petrel	<i>Macronectes giganteus</i>	Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area
Northern Giant Petrel	<i>Macronectes halli</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Orange-bellied Parrot	<i>Neophema chrysogaster</i>	Critically Endangered	-	Migration route likely to occur within area	Migration route likely to occur within area
Blue-winged Parrot	<i>Neophema chrysostoma</i>	Vulnerable	-	-	Species or species habitat known to occur within area
Eastern Curlew, Far Eastern Curlew	<i>Numenius madagascariensis</i>	Critically Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat known to occur within area
Little Curlew, Little Whimbrel	<i>Numenius minutus</i>	-	Migratory	-	Roosting likely to occur within area
Fairy Prion (southern)	<i>Pachyptila turtur subantarctica</i>	Vulnerable	-	Species or species habitat may occur within area	Species or species habitat known to occur within area
Osprey	<i>Pandion haliaetus</i>	-	Migratory	-	Species or species habitat known to occur within area

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Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Sooty Albatross	<i>Phoebastria fusca</i>	Vulnerable	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Gould's Petrel, Australian Gould's Petrel	<i>Pterodroma leucoptera leucoptera</i>	Endangered	-	Species or species habitat may occur within area	Species or species habitat may occur within area
Soft-plumaged Petrel	<i>Pterodroma mollis</i>	Vulnerable	-	Species or species habitat may occur within area	Species or species habitat may occur within area
Australian Painted Snipe	<i>Rostratula australis</i>	Endangered	-	-	Species or species habitat likely to occur within area
Little Tern	<i>Sternula albifrons</i>	-	Migratory	-	Species or species habitat may occur within area
Australian Fairy Tern	<i>Sternula nereis nereis</i>	Vulnerable	-	Foraging, feeding or related behaviour likely to occur within area	Species or species habitat known to occur within area
Buller's Albatross, Pacific Albatross	<i>Thalassarche bulleri</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Northern Buller's Albatross, Pacific Albatross	<i>Thalassarche bulleri platei</i>	Vulnerable	-	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Indian Yellow-nosed Albatross	<i>Thalassarche carteri</i>	Vulnerable	Migratory	Species or species habitat likely to occur within area	Species or species habitat likely to occur within area
Shy Albatross	<i>Thalassarche cauta</i>	Endangered	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Grey-headed Albatross	<i>Thalassarche chrysostoma</i>	Endangered	Migratory	Species or species habitat may occur within area	Species or species habitat may occur within area

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Value/Sensitivity Common Name	Scientific Name	Threatened Status	Migratory Status	Sensitivities within Operational Area	Sensitivities within EMBA
Campbell Albatross, Campbell Black-browed Albatross	<i>Thalassarche impavida</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Black-browed Albatross	<i>Thalassarche melanophris</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
Salvin's Albatross	<i>Thalassarche salvini</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour likely to occur within area	Foraging, feeding or related behaviour likely to occur within area
White-capped Albatross	<i>Thalassarche steadi</i>	Vulnerable	Migratory	Foraging, feeding or related behaviour known to occur within area	Foraging, feeding or related behaviour known to occur within area
Eastern Hooded Plover, Eastern Hooded Plover	<i>Thinornis cucullatus cucullatus</i>	Vulnerable	-	-	Species or species habitat known to occur within area
Common Greenshank, Greenshank	<i>Tringa nebularia</i>	Endangered	Migratory	-	Species or species habitat likely to occur within area

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Table 4-4: Key environmental sensitivities and timing of biologically important activity

Category	Environmental Sensitivity	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Habitats / Communities	Phytoplankton abundance	Assumed peak occurrence associated with Bonney Upwelling				Present year-round							
	Zooplankton abundance	Assumed peak occurrence associated with Bonney Upwelling				Present year-round							
	Seagrass	Present year-round in coastal areas											
	Macroalgae	Present year-round											
TEC	Bonney Coast Upwelling	Upwelling event											
Marine Fauna (threatened/migratory species)	Marine Mammals												
	Australian Sea Lion	Assumed present year-round – SEMR is a known range											
	Pygmy Blue Whale	Foraging occurs during Bonney Upwelling – BIA											
	Dusky Dolphin	Assumed present year-round – prefers inshore habitats but may also be pelagic at times											
	Fin Whale	Present during the Bonney Upwelling event											
	Humpback Whale				Nth Migration through SEMR						Sth Migration through SEMR		
	Killer Whale	Assumed present year-round – frequent sightings off Vic along the continental slope and shelf											
	Pygmy Right Whale	Uncommon / few or no records available for Vic.											
	Sei Whale	Sighted during the Bonney Upwelling event											
	Southern Right Whale				Migration BIA								
						Reproduction BIA							
Marine Reptiles													

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Category	Environmental Sensitivity	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Green turtle	Occurs in limited numbers in Vic and SA											
	Leatherback Turtle	Foraging in the SEMR is known to occur											
	Loggerhead Turtle	Uncommon in southern Australia											
	<i>Fish, Sharks, and Rays</i>												
	Porbeagle	Assumed present year-round											
	Shortfin Mako Shark	Assumed present year-round											
	White Shark	Assumed present year-round with breeding, distribution and foraging BIAs identified throughout the region											
	Blue Warehouse	Assumed present year-round											
	Eastern School Shark	Assumed present year-round											
	Southern Bluefin Tuna	Assumed present year-round											
	<i>Birds</i>												
	Antipodean Albatross	Foraging known to occur all year											
	Black-browed Albatross				Fledglings (Apr – May)		Present – foraging BIA			Breeding within SEMR on Macquarie Is.			
	Buller's Albatross	Foraging BIA – however, records indicate the species is mainly present around Tas when in the SEMR (species endemic to NZ)											
	Campbell Albatross					Present in the non-breeding season – foraging BIA			Breeds on Campbell Island, south of NZ Aug – May				
	Indian Yellow-nosed Albatross			Fledgling Mar-Apr					Non-breeding visitor – foraging BIA		Breeding occurs in South Africa – eggs laid in Sep-Oct		
	Short-tailed Shearwater	Present Sep-May – foraging and breeding BIAs					Migrates north for Winter				Breeding Oct – May		
	Shy Albatross	Assumed present year-round – foraging BIA. Breeding occurs in SEMR with eggs laid in Sept and fledglings in Apr											

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Category	Environmental Sensitivity	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Wandering Albatross	Assumed present year-round – foraging BIA. Breeding occurs biennially on Macquarie Island with eggs laid in Dec and fledglings between mid-Nov and late-Feb											
	Birds – other seabirds (with no BIAs identified)	Various species – assumed present											
	Birds – shorebirds	Various species – assumed present											
Legend		Peak occurrence / activity (reliable and predictable)											
		Activity can occur throughout the year											
		Low level of occurrence/ activity (may vary from year to year)											
		No occurrence											

4.4.3. Biologically Important Areas and Habitat Critical to the Survival of a Species

Biologically important areas (BIAs) are those locations where aggregations of members of a species are known to undertake biologically important behaviours, such as breeding, resting, foraging or migration. BIAs have been identified using expert scientific knowledge about species abundance, distribution, and behaviours. BIAs are not recognised by the EPBC Act but are identified by DCCEEW to aid in the management and protection of threatened fauna.

A review of the PMSTs (Appendix D) identified BIAs for 16 protected species that intersect with the operational area and EMBA. The identified protected species and their BIAs are shown in Table 4-5 and in Figure 4-11 to Figure 4-16.

Habitats critical for the survival of a species, referred to as critical habitats, are recognised under the EPBC Act. Critical habitats may be identified in species recovery plans made under the EPBC Act or listed on the register of critical habitat maintained by the minister under the EPBC Act. Woodside considers critical habitats carry greater weight than BIAs.

There are no habitats critical to the survival of a species identified within the operational area or EMBA.

Table 4-5: BIAs within the EMBA

Species	BIA Type	Closest approx. distance to Operational Area (km)
Whales		
Pygmy Blue Whale Figure 4-11	Foraging (annual high use area)	Within
	Distribution	Within
	Foraging	16
	Known Foraging Area	52
Southern Right Whale Figure 4-12	Migration	Within
	Reproduction	3
Sharks		
White Shark Figure 4-13	Know distribution	Within
	Distribution	Within
	Distribution (low density)	Within
Seabirds		
Antipodean Albatross Figure 4-14	Foraging	Within
Black-browed Albatross Figure 4-14	Foraging	Within
Buller’s Albatross Figure 4-14	Foraging	Within
Campbell Albatross Figure 4-14	Foraging	Within
Common Diving Petrel Figure 4-15	Foraging	Within
Indian Yellow-nosed Albatross Figure 4-15	Foraging	Within

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Species	BIA Type	Closest approx. distance to Operational Area (km)
Short-tailed Shearwater Figure 4-15	Foraging	19
Shy Albatross Figure 4-15	Foraging likely	Within
Wandering Albatross Figure 4-16	Foraging	Within
Wedge-tailed shearwater Figure 4-16	Foraging	Within
White-faced Storm Petrel Figure 4-16	Foraging	59

¹ Where multiple BIAs overlap with the wider EMBA, the distance shown is the distance of the closest BIA to the operational area.

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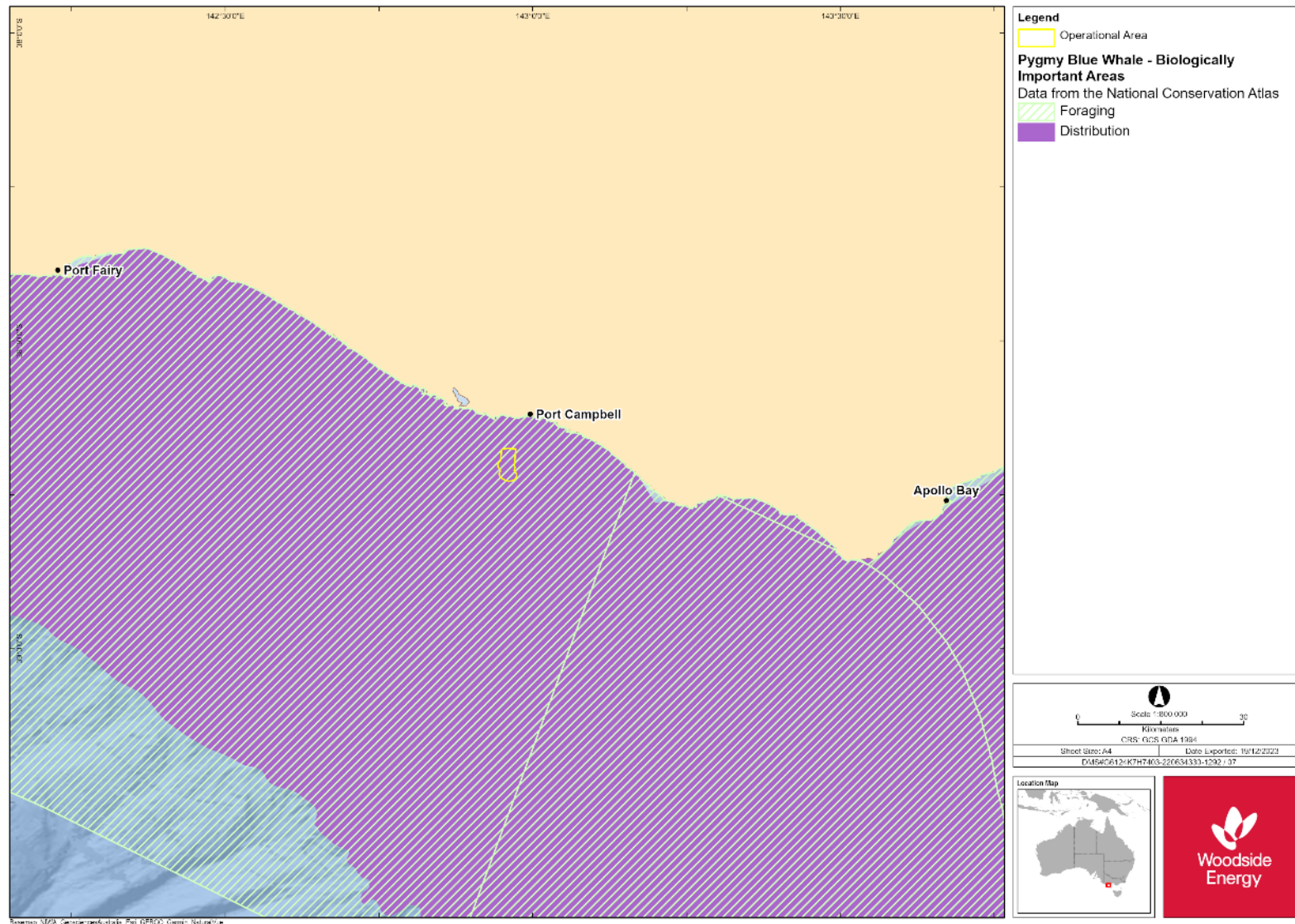


Figure 4-11: Pygmy Blue Whale BIAs within operational area and EMBAs

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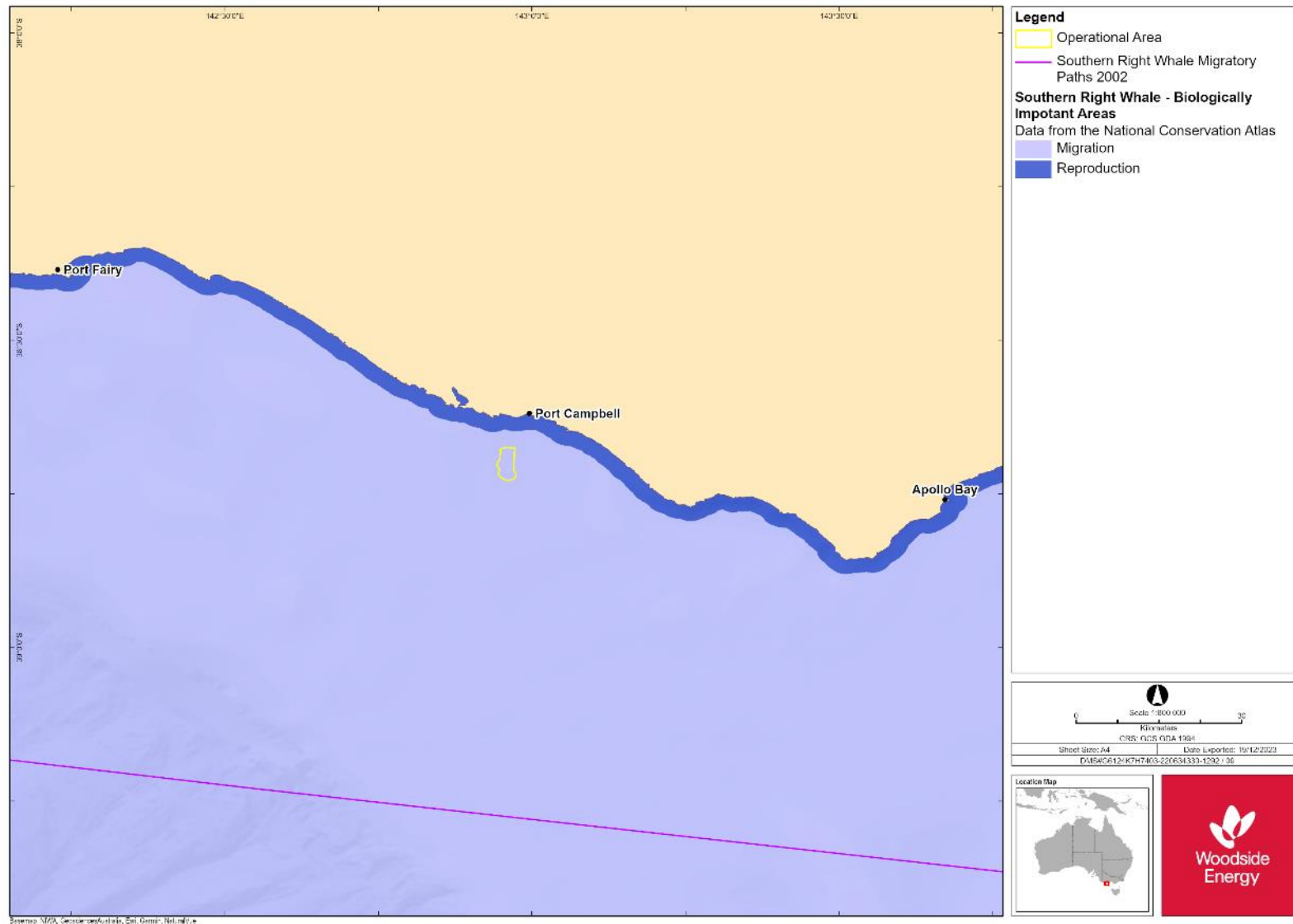


Figure 4-12: Southern Right Whale BIAs within the operational area and EMBA

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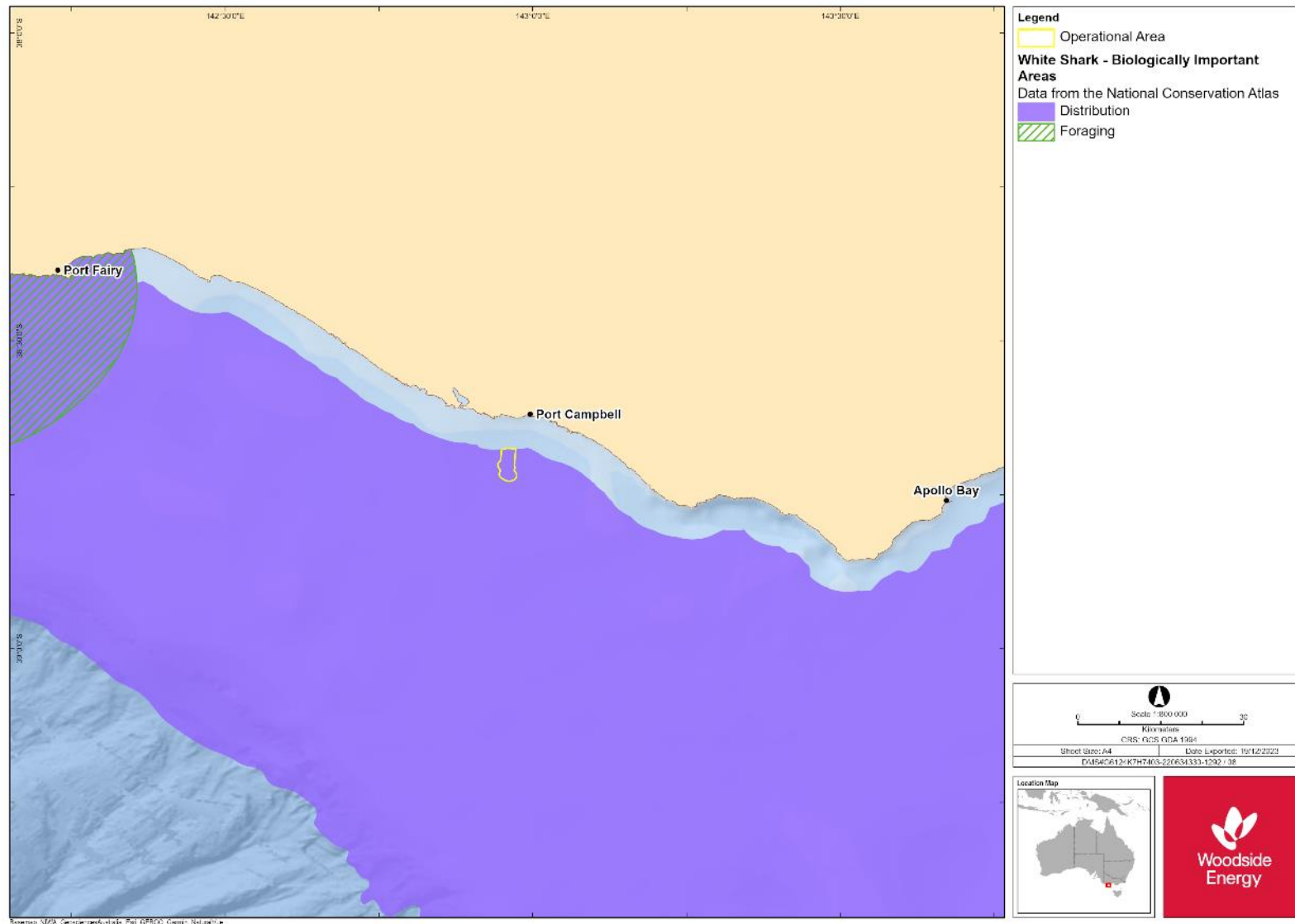


Figure 4-13: White shark BIAs within the operational area and EMBA

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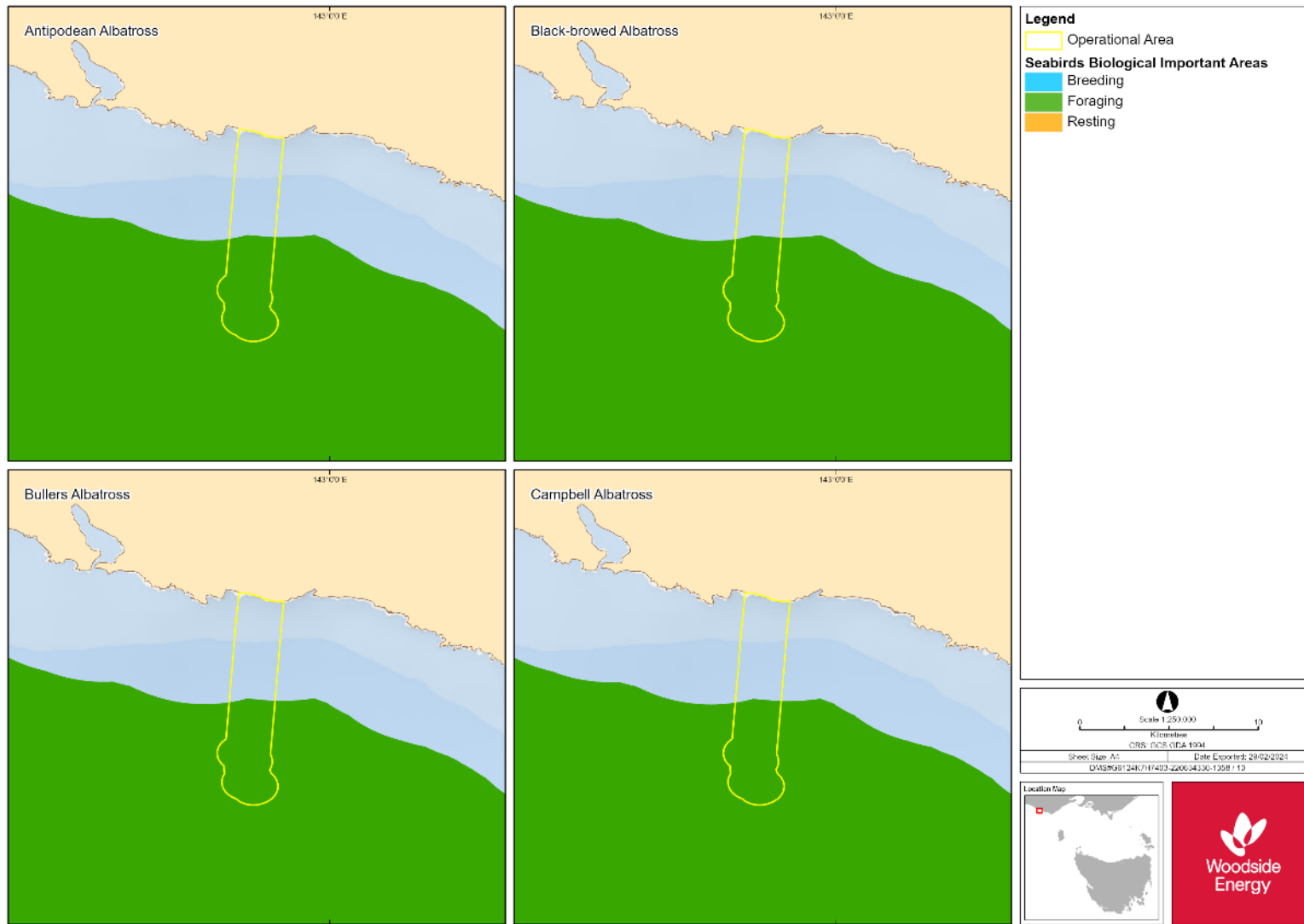


Figure 4-14: Seabird BIAs in the operational area (Figure 1 of 3)

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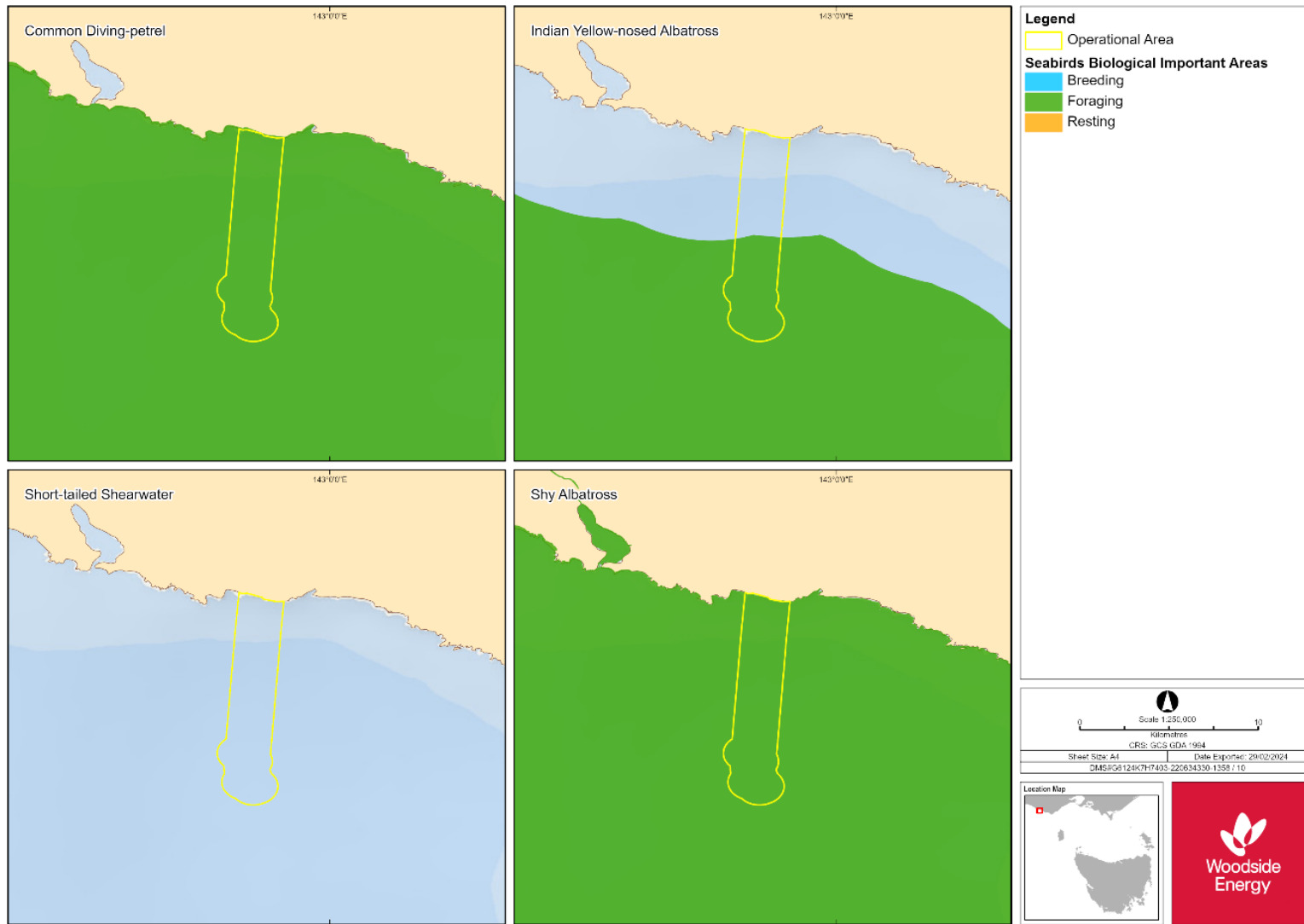


Figure 4-15: Seabird BIAs in the operational area (Figure 2 of 3)

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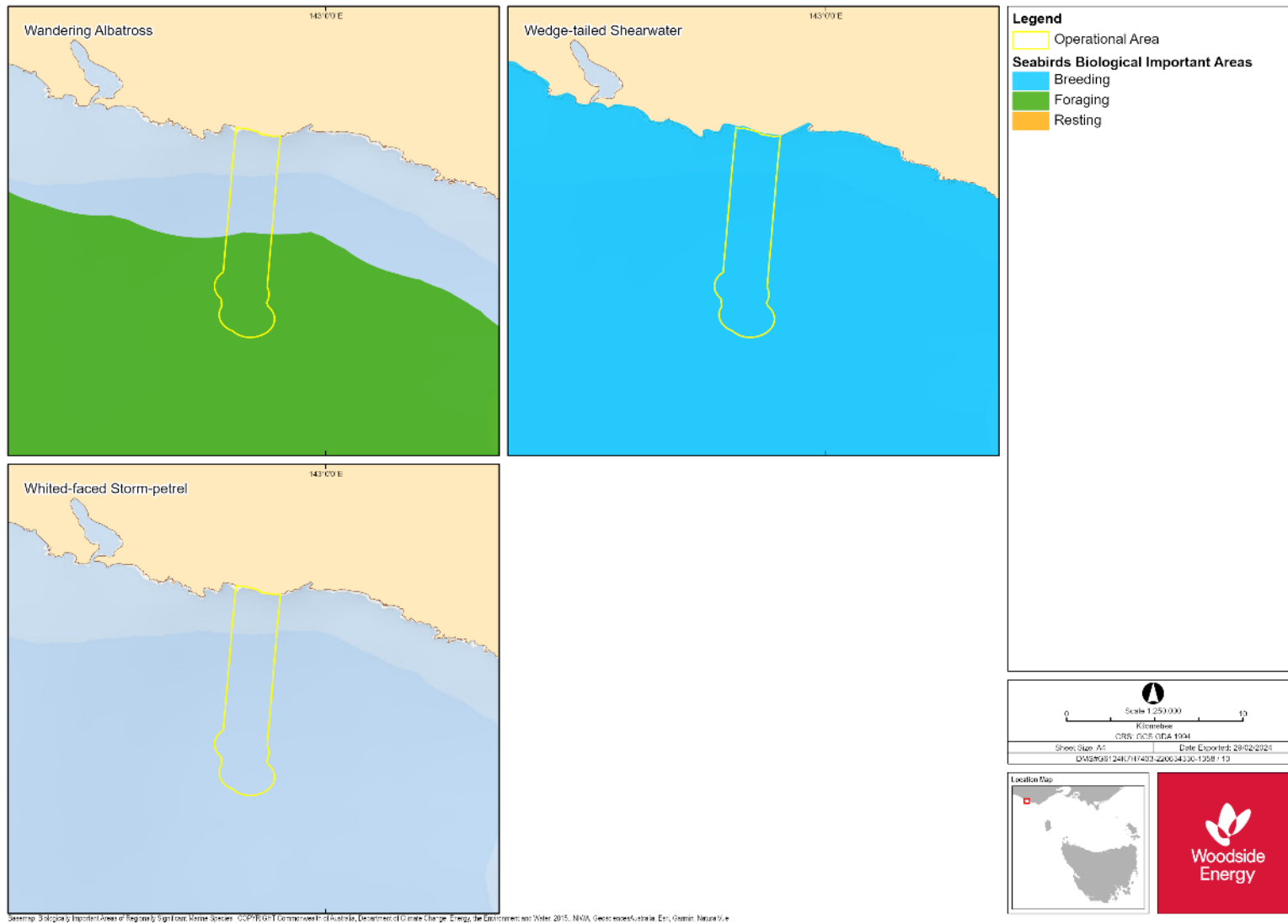


Figure 4-16: Seabird BIAs in the operational area (Figure 3 of 3)

4.4.4. Relevant Recovery Plans, Conservation Advice and Threat Abatement Plans

Woodside considered recent updates to Recovery Plans, Conservation Management Plans, Threat Abatement Plans, or approved Conservation Advice in place for EPBC Act-listed threatened species that may potentially occur or utilise habitat within the operational area or EMBA.

Recovery Plans set out the research and management actions necessary to stop the decline of and support the recovery of listed threatened species. In addition, Threat Abatement Plans provide for the research, management, and any other actions necessary to reduce the impact of a listed key threatening process on native species and ecological communities.

Table 4-6 summarises the actions relevant to the activity with more information on the specific requirements of the relevant plans of management (including Conservation Advice and Conservation Management Plans) applicable to the Activity and demonstrates how current management requirements have been considered.

Table 4-6: Summary of relevant species recovery plans, approved conservation plans and threat abatement plans

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
All Vertebrate Fauna				
All vertebrate fauna	Threat Abatement Plan for the Impacts of Marine Debris on Vertebrate Wildlife of Australia's Coasts and Oceans (Commonwealth of Australia, 2018)	There are four relevant objectives: <ul style="list-style-type: none"> Objective 1: Contribute to the long-term prevention of the incidence of marine debris Objective 2: Understand the scale of impacts from marine plastic and microplastic on key species, ecological communities and locations Objective 3: Remove existing marine debris Objective 4: Monitor the quantities, origins, types and hazardous chemical contaminants of marine debris, and assess the effectiveness of management arrangements for reducing marine debris. 	Ship-sourced marine debris as a risk to vertebrate marine life through entanglement or ingestion	No explicit management actions for non-fisheries related industries (note that management actions in the plan relate largely to management of fishing waste (for example 'ghost' gear), and State and Commonwealth management through regulation.
Marine Mammals				
Sei Whale	Conservation Advice <i>Balaenoptera borealis</i> Sei Whale (Threatened Species Scientific Committee, 2015)	No explicit relevant objectives.	Noise interference	No explicit relevant management actions; anthropogenic noise identified as a minor threat.
			Pollution	No explicit relevant management actions; pollution identified as a minor threat.
			Habitat degradation including pollution	No explicit relevant management actions; habitat degradation and pollution identified as threats.
			Vessel strike	Minimising vessel collisions: Report all vessel strike incidents in the National Vessel Strike Database.
Blue Whale	Conservation Management Plan for the Blue Whale 2015-2025 (Commonwealth of Australia, 2015)	The long-term recovery objective is to minimise anthropogenic threats to allow the conservation status of the Blue Whale to improve so that it can be removed from the threatened species list under the EPBC Act.	Noise interference	Action A.2: Assess and address anthropogenic noise. <ul style="list-style-type: none"> Investigate the baseline acoustic behaviour of blue whales. Assess the effect of anthropogenic noise on blue whale behaviour. <ul style="list-style-type: none"> Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury, and is not displaced from a foraging area.
			Habitat modification (marine debris and chemical discharge)	No explicit relevant management actions; habitat modification identified as a threat.
			Vessel disturbance	Action A.4: Minimise vessel collisions. Report all vessel strike incidents in the National Ship Strike Database. Consider the risk of vessel strikes on blue whales when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, implement appropriate mitigation measures.
Fin Whale	Conservation Advice <i>Balaenoptera physalus</i> Fin Whale (Threatened Species Scientific Committee, 2015)	No explicit relevant objectives.	Noise interference	No explicit relevant management actions; anthropogenic noise identified as a minor threat.
			Pollution	No explicit relevant management actions; pollution identified as a minor threat.
			Habitat degradation including pollution	No explicit relevant management actions; habitat degradation and pollution identified as threats.
			Vessel strike	Minimising vessel collisions: Report all vessel strike incidents in the National Vessel Strike Database.
Southern Right Whale	Conservation Management Plan for the Southern Right Whale 2011-2021 (DSEWPaC, 2012)	Long term recovery objective: <ul style="list-style-type: none"> To minimise anthropogenic threats to allow the conservation status of the southern right whale to improve so that it can be removed from the threatened species list under the EPBC Act 	Noise interference	Action Area A.2: Improve the understanding of what impact anthropogenic noise may have on southern right whale populations by: <ul style="list-style-type: none"> Assessing anthropogenic noise in key calving areas Assessing responses of southern right whales to anthropogenic noise

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
		Interim Recovery Objective 5: <ul style="list-style-type: none"> Anthropogenic threats are demonstrably minimised 		<ul style="list-style-type: none"> If necessary, developing further mitigation measures for noise impacts.
		Habitat modification	No explicit relevant management actions; habitat modification identified as a threat.	
		Marine debris / entanglement	No explicit relevant management actions; entanglement in marine debris identified as a threat.	
		Vessel disturbance / strike	No explicit relevant management actions; vessel disturbance identified as a threat.	
	Draft National Recovery Plan for the Southern Right Whale (<i>Eubalaena australis</i>) (DCCEEW, 2022)	<p>Long-term Vision:</p> <ul style="list-style-type: none"> The long-term vision for the recovery of the Australian Southern Right Whale is that the population has increased in size to a level that the conservation status has improved, and the species no longer qualifies for listing as threatened under any of the EPBC Act listing criteria. <p>Interim Objective 2:</p> <ul style="list-style-type: none"> Anthropogenic threats are managed consistent with ecologically sustainable development principles and do not impede recovery of Southern Right Whales. 	Anthropogenic climate change and climate variability	<p>Action Area A3: Understand impacts of climate variability and anthropogenic climate change on the biology of Southern Right Whales in Australian waters.</p> <p>In particular:</p> <ul style="list-style-type: none"> Action 1: Continue to meet Australia's international commitments to address causes of climate change, including greenhouse gas emissions.
			Entanglement (marine debris)	No explicit relevant management actions; marine debris identified as a threat.
			Habitat degradation	<p>Action Area A2: Address habitat degradation impacts from coastal and offshore marine infrastructure developments within the species' range.</p> <p>In particular:</p> <ul style="list-style-type: none"> Action 1: Coastal and offshore development actions are assessed according to principles of ecological sustainable development to minimise the risk of injury and/or disturbance to Southern Right Whales. Action 2: Baseline surveys and monitoring undertaken during activity implementation are conducted in accordance with best practice standards and guidelines to obtain standardised datasets suitable to inform environmental management decision making that can reduce the risk of threats to Southern Right Whales. Action 3: Current information on species' occurrence, particularly in HCTS, BIAs, and historic high use areas, are used to inform planning, assessment, and decision-making on marine infrastructure development actions.
			Anthropogenic underwater noise (industrial noise, vessel noise, and aircraft noise)	<p>Action Area A5: Assess and address impacts to Southern Right Whales from anthropogenic underwater noise.</p> <p>In particular:</p> <ul style="list-style-type: none"> Action 2: Actions within and adjacent to Southern Right Whale BIAs and HCTS should demonstrate that it does not prevent any Southern Right Whale from utilising the area or cause injury (TTS and PTS) and/or disturbance. Action 3: In environmental assessments associated with underwater noise generating activities, include consideration of national policy (e.g., EPBC Act Policy Statement 2.1) and guidelines related to managing anthropogenic underwater noise and implement appropriate mitigation measures to reduce risks to Southern Right Whales to the lowest possible level.
			Collision (vessel strike)	<p>Action Area 6: Manage, minimise, and mitigate the threat of vessel strike within Southern Right Whale BIAs and HCTS.</p> <p>In particular:</p> <p>Action 1: Assess risk of vessel strike to Southern Right Whales in BIAs.</p> <p>Action 5: Report all vessel strike incidents in the National Ship Strike Database managed through the Australian Marine Mammal Centre, Australian Antarctic Division.</p>
			Pollution (acute chemical discharge)	No explicit relevant management actions; pollution (acute chemical discharge) identified as a threat.
Australian Sea Lion		The overarching objective of this recovery plan is to halt the decline and assist the recovery of the Australian sea lion throughout its	Habitat degradation	No explicit management actions; habitat degradation recognised as a threat
Pollution and oil spills			Implement jurisdictional oil spill response strategies as required.	

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
	Recovery Plan for the Australian Sea Lion (<i>Neophoca cinerea</i>) (DSEWPaC, 2013)	range in Australian waters by increasing the total population size while maintaining the number and distribution of breeding colonies with a view to: <ul style="list-style-type: none"> Improving the population status leading to the future removal of the Australian sea lion from the threatened species list of the EPBC Act Ensuring that anthropogenic activities do not hinder recovery in the near future or impact on the conservation status of the species in the future. 	Disease	No explicit management actions; disease and pathogens recognised as a threat.
			Marine debris	Identify the sources of marine debris having an impact on Australian sea lion populations. Assess the impacts of marine debris on Australian sea lion populations. Develop and implement measures to mitigate the impacts of marine debris on Australian sea lion populations, noting the linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.
			Vessel Strike	Collect data on direct killings and confirmed vessel strikes.
	Approved Conservation Advice on <i>Neophoca cinerea</i> Australian Sea Lion (TSSC, 2020a)	Primary conservation actions: <ul style="list-style-type: none"> Mitigate the impacts of marine debris on Australian Sea Lions 	Marine debris	Assess the impacts of marine debris on Australian Sea Lion populations and identify the sources of marine debris which have an impact. Develop and implement measures to mitigate the impacts of marine debris on the species (including reducing the amount of these marine debris entering the oceans), noting linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.
			Habitat degradation and pollution	Require all vessels to have oil spill mitigation measures in place and implement jurisdictional oil spill response strategies as required.
			Noise interference	Monitor and mitigate impacts (including cumulative impacts) of human interactions on Australian Sea Lion colonies. Control access to breeding colonies to minimise the impacts of disturbance on Australian Sea Lions.
Marine Reptiles				
EPBC Act listed marine turtles in the EMBA's: <ul style="list-style-type: none"> Loggerhead Turtle Green Turtle Leatherback Turtle 	National Light Pollution Guidelines for Wildlife, including marine turtles, seabirds and migratory shorebirds (DoEE, 2020)	The aim of the Guidelines is that artificial light will be managed so wildlife is: <ul style="list-style-type: none"> Not disrupted within, nor displaced from, important habitat Able to undertake critical behaviours such as foraging, reproduction and dispersal. 	Light pollution	Best practice lighting design incorporates the following design principles: <ul style="list-style-type: none"> Start with natural darkness and only add light for specific purposes. Use adaptive light controls to manage light timing, intensity and colour. Light only the object or area intended – keep lights close to the ground, directed and shielded to avoid light spill. Use the lowest intensity lighting appropriate for the task. Use non-reflective, dark-coloured surfaces. Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.
			Recovery Plan for Marine Turtles (DoEE, 2017)	Long-term recovery objective: <ul style="list-style-type: none"> Minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list. Interim objective 3: Anthropogenic threats are demonstrably minimised.
			Chemical and Terrestrial Discharge	Action Area A4: Minimise chemical and terrestrial discharge. <ul style="list-style-type: none"> Include in spill risk strategies and response programs adequate management for marine turtles and their habitats, particularly in reference to 'slow to recover habitats', e.g. nesting habitat.
			Vessel disturbance	Vessel interactions identified as a threat; no specific management actions in relation to vessels prescribed in the plan.
			Light pollution	Action Area A8: Minimise light pollution: <ul style="list-style-type: none"> Artificial light within or adjacent to habitat critical to the survival of marine turtles will be managed such that marine turtles are not displaced from these habitats. Develop and implement best practice light management guidelines for existing and future developments adjacent to marine turtle nesting beaches. Identify the cumulative impact on turtles from multiple sources of onshore and offshore light pollution.

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
			Noise interference	Understand the impacts of anthropogenic noise on marine turtle behaviour and biology.
			Habitat modification	Manage anthropogenic activities to not displace marine turtles from identified habitat critical to the survival. Manage anthropogenic activities in Biologically Important Areas to allow biologically important behaviour to continue.
Leatherback Turtle	Approved Conservation Advice for <i>Dermochelys coriacea</i> (Leatherback Turtle) (DEWHA, 2008)	No explicit relevant objectives	Boat strike	No explicit relevant management actions; vessel strikes identified as a threat.
			Habitat degradation (changes to breeding sites and degradation to foraging areas)	Identify and protect migratory corridors between nesting beaches and common foraging areas to facilitate colonization.
			Marine debris	No explicit relevant management actions; marine debris identified as a threat.
Fish, Sharks and Rays				
White Shark	National Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (DSEWPaC, 2013b)	The overarching objective of this recovery plan is to assist the recovery of the white shark in the wild throughout its range in Australian waters with a view to: <ul style="list-style-type: none"> Improving the population status leading to future removal of the white shark from the threatened species list of the EPBC Act Ensuring that anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future. The specific objectives of the recovery plan (relevant to industry) are: <ul style="list-style-type: none"> Objective 7: Continue to identify and protect habitat critical to the survival of the white shark and minimise the impact of threatening processes within these areas. 	Habitat modification	No explicit relevant management actions; habitat modification and climate change identified as threats.
Birds – Shorebirds				
Seabirds and migratory shorebirds	National Light Pollution Guidelines for Wildlife, including marine turtles, seabirds and migratory shorebirds (DoEE, 2020)	The aim of the Guidelines is that artificial light will be managed so wildlife is: <ul style="list-style-type: none"> Not disrupted within, nor displaced from, important habitat Able to undertake critical behaviours such as foraging, reproduction and dispersal 	Light pollution	Best practice lighting design incorporates the following design principles: <ul style="list-style-type: none"> Start with natural darkness and only add light for specific purposes. Use adaptive light controls to manage light timing, intensity and colour. Light only the object or area intended – keep lights close to the ground, directed and shielded to avoid light spill. Use the lowest intensity lighting appropriate for the task. Use non-reflective, dark-coloured surfaces. Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.
All Migratory Shorebirds	Wildlife Conservation Plan for Migratory Shorebirds (CoA, 2015)	Overall vision: Ecologically sustainable populations of migratory shorebirds remain distributed across their range and diversity of habitats in Australia, and throughout the East Asian-Australasian Flyway. Relevant objectives: <ul style="list-style-type: none"> Protection of important habitats for migratory shorebirds has occurred throughout the EAAF Wetland habitats in Australia, on which migratory shorebirds depend, are protected and conserved Anthropogenic threats to migratory shorebirds in Australia are minimised or, where possible, eliminated 	Habitat degradation and modification (including pollution and invasive marine species)	Action 3c: Investigate the significance of cumulative impacts on migratory shorebird habitat and populations in Australia. Action 3f: Continue to consider all areas important to migratory shorebirds in Australia in development assessment processes (specifically for coastal developments). Action 3c: Investigate the significance of cumulative impacts on migratory shorebird habitat and populations in Australia. Action 3f: Continue to consider all areas important to migratory shorebirds in Australia in development assessment processes (specifically for coastal developments).

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Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
Australasian Bittern	Approved Conservation Advice for <i>Botaurus poiciloptilus</i> (Australasian bittern) (TSSC, 2019)	The objective of this conservation advice is to provide guidance for actions that will expand the range and the number of Australasian Bitterns in Australia.	Habitat loss, disturbance and modifications	No explicit relevant management actions; habitat loss and degradation recognised as a threat.
Australian Painted Snipe	Approved Conservation Advice for Australian painted snipe (<i>Rostratula australis</i>) (DSEWPaC, 2013c)	No explicit relevant objectives	Habitat loss, disturbance and modification	Habitat recovery actions are a priority.
Bar-Tailed Godwit (baueri)	Approved Conservation Advice for the bar-tailed godwit (western Alaskan) (<i>Limosa lapponica baueri</i>) (TSSC, 2016)	No explicit relevant objectives	Habitat loss, disturbance and modification	Protect important habitat in Australia
Curlew Sandpiper	Approved Conservation Advice for the curlew sandpiper (<i>Calidris ferruginea</i>) (DoE, 2015c)	Australian Objective: <ul style="list-style-type: none"> Reduce disturbance at key roosting and feeding sites 	Habitat loss and degradation from pollution	No explicit relevant management actions; oil pollution recognised as a threat.
Eastern Curlew	Approved Conservation Advice for eastern curlew (<i>Numenius madagascariensis</i>) (TSSC, 2015c)	Australian objectives: <ul style="list-style-type: none"> Achieve a stable or increasing population. Maintain and enhance important habitat. Reduce disturbance at key roosting and feeding sites. 	Habitat loss and degradation from pollution	No explicit relevant management actions; habitat loss and degradation recognised as a threat.
Great Knot	Approved Conservation Advice for the great knot (<i>Calidris tenuirostris</i>) (TSSC, 2016a)	No explicit relevant objectives	Habitat loss and degradation from pollution	Identifies research priorities and the need for actions to prevent destruction of key breeding and migratory staging sites
			Disease	No explicit relevant management actions; disease recognised as a threat.
Greater Sand Plover	Approved Conservation Advice for the greater sand plover (<i>Charadrius leschenaultii</i>) (TSSC, 2016b)	No explicit relevant objectives	Habitat loss and degradation from pollution	Identifies research priorities and the need for actions to prevent destruction of key breeding and migratory staging sites. Protect important habitat in Australia.
			Introduced marine species / disease	No explicit relevant management actions; introduced marine species and disease recognised as a threat.
Lesser Sand Plover	Approved Conservation Advice <i>Charadrius mongolus</i> (Lesser sand plover) (TSSC, 2016c)	No explicit relevant objectives	Habitat loss and degradation from pollution	Outlines research and survey priorities and recommends habitat restoration / maintenance.
			Introduced marine species / disease	No explicit relevant management actions; introduced marine species and disease recognised as a threat.
Red Knot	Approved Conservation Advice for the red knot (<i>Calidris canutus</i>) (TSSC, 2016d)	No explicit relevant objectives	Habitat loss and degradation Pollution/ contamination impacts	Protect important habitat in Australia. Maintain and improve protection of roosting and feeding sites in Australia
Birds – Seabirds				
All Seabirds	Wildlife Conservation Plan for Seabirds (CoA, 2020)	To provide a strategic national framework for the research and management of listed marine and migratory seabirds. The long-term survival of seabirds and their habitats is achieved through supporting priority research programs, coordinated monitoring, on-ground management and conservation.	Habitat loss and modification	Action 2A: Identify important habitats for all seabirds during critical life stages. Action 2D: Consider, appropriately and consistently, all areas of important habitat for seabirds in the development assessment process. Action 2I: Restore lost or degraded seabird breeding and roosting habitats.
			Anthropogenic disturbance	Action 2E: Manage the effects of anthropogenic disturbance to seabird breeding and roosting areas.
			Pollution (marine debris, light, water and acute pollution)	Action 2E: Manage the effects of anthropogenic disturbance to seabird breeding and roosting areas. Mitigate against impacts of light pollution by vessels at sea
			Invasive species	Action 2F: Manage invasive species at important seabird habitats.

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Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
<p>Relevant EPBC Act-listed seabirds:</p> <ul style="list-style-type: none"> ▪ Antipodean Albatross ▪ Black-Browed Albatross ▪ Buller's Albatross ▪ Campbell Albatross ▪ Gibson's Albatross ▪ Indian Yellow-Nosed Albatross ▪ Northern Buller's Albatross ▪ Northern Giant Petrel ▪ Northern Royal Albatross ▪ Soft-Plumaged Petrel ▪ Southern Giant Petrel ▪ Shy Albatross ▪ Sooty Albatross ▪ Southern Royal Albatross ▪ Wandering Albatross ▪ White-Capped Albatross 	<p>Background Paper, Population Status and Threats to Albatrosses and Giant Petrels Listed as Threatened under the EPBC Act 1999 (DSEWPaC, 2011a)</p> <p>National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPaC, 2011)</p>	<p>Overall objective:</p> <ul style="list-style-type: none"> ▪ To ensure the long-term survival and recovery of albatross and giant petrel populations breeding and foraging in Australian jurisdiction by reducing or eliminating human related threats at sea and on land. <p>Specific objectives:</p> <ul style="list-style-type: none"> ▪ Land-based threats to the survival and breeding success of albatrosses and giant petrels breeding within areas under Australian jurisdiction are quantified and reduced. ▪ Marine-based threats to the survival and breeding success of albatrosses and giant petrels foraging in waters under Australian jurisdiction are quantified and reduced. 	<p>Marine pollution</p> <p>Parasites and disease</p>	<p>Where feasible, population monitoring programs also monitor, in a standardised manner, the incidence of oiled birds at the nest.</p> <p>No explicit management actions; parasites and disease recognised as a threat.</p>
Australian Fairy Tern	Approved Conservation Advice for the Australian Fairy Tern (<i>Sternula nereis nereis</i>) (DSEWPaC, 2011b)	No explicit relevant objectives	Oil spills	Have in place appropriate oil spill contingency plans for the subspecies' breeding sites that are vulnerable to oil spills.
Blue Petrel	Approved Conservation Advice for the Blue Petrel (<i>Halobaena caerulea</i>) (TSSC, 2015d)	No explicit relevant objectives	Habitat loss, disturbance and modification	No explicit management actions; habitat loss, disturbance and modification recognised as a threat.
Fairy Prion (Southern)	Approved Conservation Advice for the Fairy Prion (Southern) (<i>Pachyptila turtur subantartica</i>) (TSSC, 2015e)	No explicit relevant objectives	Habitat loss, disturbance and modification	No explicit management actions; habitat loss, disturbance and modification recognised as a threat.
Grey-Headed Albatross	Approved Conservation Advice for the Grey-Headed Albatross (<i>Thalassarche chrysotoma</i>) (DEWHA, 2009)	No explicit relevant objectives	Habitat loss, disturbance and modification	No explicit management actions; habitat loss, disturbance and modification recognised as a threat.
Shy Albatross	Approved Conservation Advice for the Shy Albatross (<i>Thalassarche cauta</i>) (TSSC, 2020c)	Conservation Advice refers to the objectives set out in the National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011-2016 (DSEWPaC 2011).	Marine debris (plastics)	No explicit management actions; marine debris recognised as a threat.
			Disease	No explicit management actions; disease recognised as a threat.
Soft-Plumaged Petrel	Approved Conservation Advice for the Soft-Plumaged Petrel (<i>Pterodroma mollis</i>) (TSSC, 2015f)	No explicit relevant objectives	Habitat loss, disturbance and modification	No explicit management actions; habitat loss, disturbance and modification recognised as a threat.

4.5. Protected and Significant Areas

4.5.1. Key Ecological Features

The operational area and EMBA do not overlap any key ecological features.

4.5.2. World Heritage Properties

The operational area and EMBA do not overlap any World Heritage properties.

4.5.3. National Heritage Properties

The following National Heritage properties lie within the EMBA:

- Great Ocean Road and Scenic Environs (5 km from the operational area).

4.5.4. Wetlands

There are no Wetlands of International Importance (Ramsar wetlands) within the EMBA.

The following Nationally Important Wetlands occur within the EMBA:

- Princetown Wetlands (16 km from the operational area)
- Lower Aire River Wetlands (44 km from the operational area)
- Aire River (44 km from the operational area).

4.5.5. Threatened Ecological Communities

Several threatened ecological communities (TECs)⁴ listed under the EPBC Act occur in the EMBA:

- Giant Kelp Forests of South East Australia, listed as Endangered (5 km from the operational area)
- Subtropical and Temperate Coastal Saltmarsh, listed as Vulnerable (6 km from the operational area)
- Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community, listed as Endangered (6 km from the operational area).

4.5.6. Protected Areas

There are no Australian or Victorian protected areas overlapping the operational area. Seven Australian Marine Parks and five State protected areas overlap the EMBA (Table 4-7 and Figure 4-17). A description of these protected areas is provided in Appendix D.

Table 4-7: Summary of protected areas in waters within the operational area and EMBA

Protected Area	IUCN Category or Relevant Park Zone	Distance from Operational Area (km)
<i>Australian Marine Parks</i>		
Apollo	Multiple Use Zone (IUCN Zone VI)	50
<i>Victorian Protected Areas</i>		
Twelve Apostles Marine National Park	IUCN Category II – National Park	5
The Arches Marine Sanctuary	IUCN Category III – Natural Monument or Feature	5
Port Campbell National Park	IUCN Category II – National Park	6
Bay of Islands Coastal Park	IUCN Category III – Natural Monument or Feature	13

⁴ The PMST report identified several terrestrial TECs that would not credibly be impacted by the petroleum activity. These have not been considered in the EP.

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Protected Area	IUCN Category or Relevant Park Zone	Distance from Operational Area (km)
Great Otway National Park	IUCN Category II – National Park	16
Marengo Reefs Marine Sanctuary	IUCN Category III – Natural Monument or Feature	61

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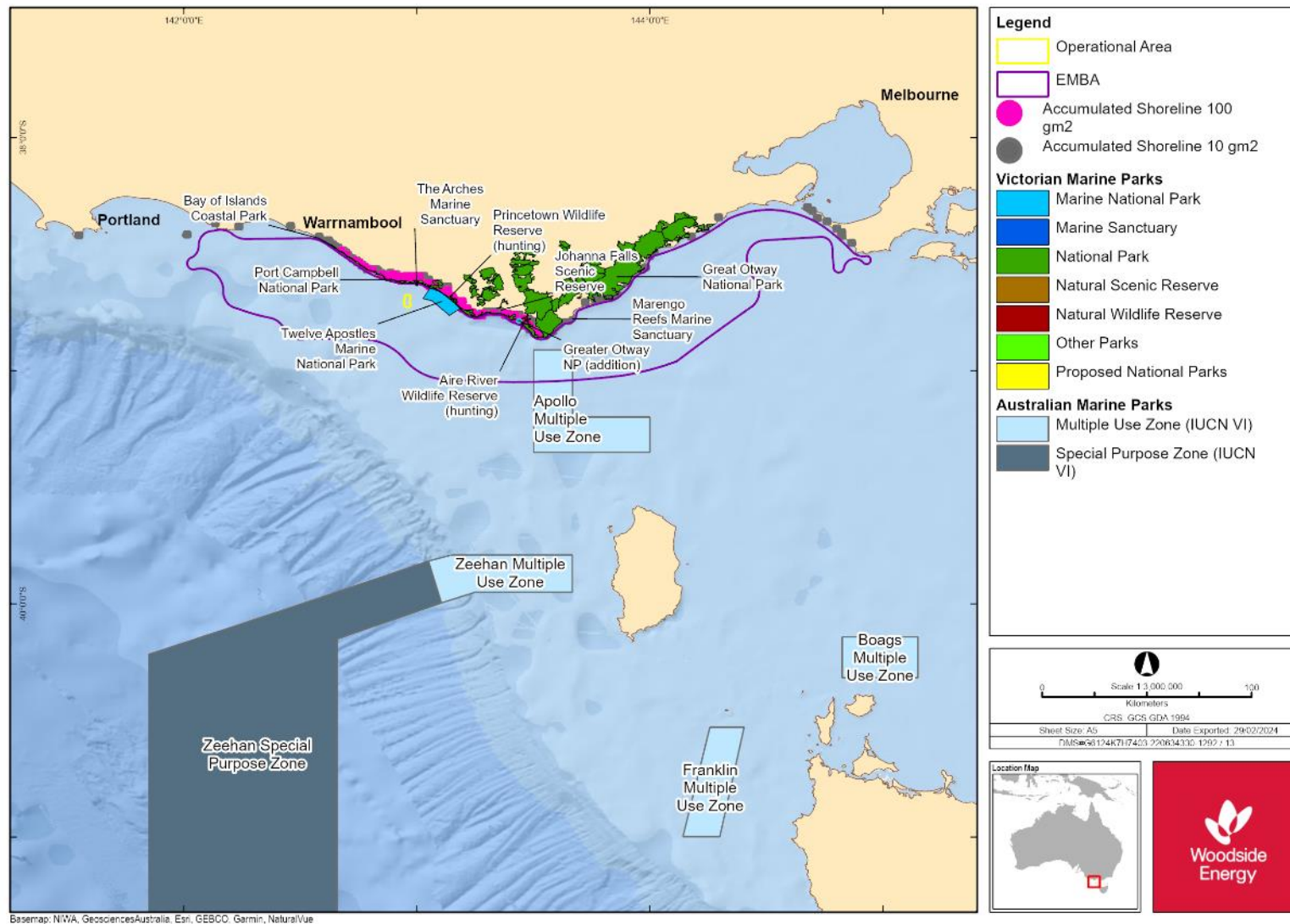


Figure 4-17: Protected Areas within the EMBA

4.6. Socio-Economic Environment

Socio-economic activities that may occur within the operational area and EMBA include commercial fishing, oil and gas exploration and production, and recreational fishing and tourism. More detailed descriptions of socio-economic considerations are available in the Description of Environment for the Minerva Field document (Appendix D).

4.6.1. Cultural Features and Heritage Values

4.6.1.1. Background

Woodside recognises the 'environment' for the purpose of the evaluation required under the Environment Regulations includes:

- the heritage value of places; and
- the social, economic, and cultural features of the broader environment.

In this section, the heritage value of places within the operational area and EMBA and the cultural features of the operational area and EMBA are described.

In line with *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS 2013) (Burra Charter) and associated practice notes, Woodside understands heritage value to refer to the cultural significance of a place to an individual or group. A cultural feature, by contrast, is understood to be comparable to the Burra Charter term “fabric” and refer to a place’s elements, fixtures, contents, and objects which have cultural values. Although these features are necessarily physical, the place they inhabit or comprise may have tangible or intangible dimensions (Australia ICOMOS 2013)

Through consultation with relevant persons, Woodside recognizes the deep spiritual and cultural connection to the environment that First Nations peoples hold.

4.6.1.2. First Nations Peoples

As a starting point for understanding social and cultural features of the environment for Indigenous (First Nations) groups, Woodside uses the existing systems, such as native title, to identify Indigenous groups that may have functions, interests or activities that may be affected. To that end, Woodside identifies native title representative bodies and nominated representative entities (defined in Section 5.5.2.1), as well as native title claimant applications (claims), native title determinations and Indigenous Land Use Agreements (ILUAs) which the EMBA overlaps. While acknowledging that cultural features and heritage values may exist outside of the native title framework, native title claims, native title determinations and ILUAs are defined under the *Native Title Act 1993* (Cth) (Native Title Act). Woodside considers this to be the broadest extent over which Indigenous groups have claimed native title rights and interests.

Native title claims are applications made to the Federal Court under the Native Title Act for a determination or decision about native title in a particular area. A claim is made by a native title claim group which asserts it holds native title rights and interests in an area of land and/or water, according to its traditional laws and customs. By making a claim, the native title claim group seeks a decision that native title exists so that its native title rights and interests are recognised by the common law of Australia. This is called a native title determination. A determination is a decision by a recognised body, such as the Federal Court or High Court of Australia, that native title either does or does not exist in relation to a particular area (National Native Title Tribunal).

A requirement to establishing a positive determination of native title in court is proving that there is an organised society that occupied the land and/or waters at the time of British annexation and that there is a continuous system of law and customs that gives right to the land and or waters, and that this has been handed down from generation to generation. The requirement of an ‘organised society’ is set out by Justice Toohey in the

historic judgment of *Mabo v Queensland (No 2)* [1992] HCA 23; (1992) 175 CLR 1 ('Mabo'). Justice Tooley had the following to say (at 187):

'it is inconceivable that indigenous inhabitants in occupation of land did not have a system by which land was utilized in a way determined by that society. There must, of course, be a society sufficiently organized to create and sustain rights and duties...'

Therefore, Woodside understands that native title rights and interests are held communally by an organised society, that native title claims are understood to represent the area over which Indigenous groups are claiming these rights and interests, and that native title determinations provide clarity on where native title rights and interests are found to either exist or not exist. Where native title rights or interests are determined to exist, they will be held by a Registered Native Title Body Corporate (section 57 of the Native Title Act) in trust or as agent for native title holders. The National Native Title Register holds information about the determination of claimant applications.

ILUAs are voluntary agreements between native title parties and other people or bodies about the use and management of land and/or waters and are registered by the Native Title Registrar in the Register of ILUAs. An ILUA can be made over areas where:

- native title has been determined to exist in at least part of the area; or
- a native title claim has been made; or
- where no native title claim has been made.

While registered, ILUAs operate as a contract between the parties, including relevant native title holders ([National Native Title Tribunal](#)).

The Native Title Act provides for a Representative Aboriginal/Torres Strait Islander Body (Native Title Representative Body) to be recognised by the Commonwealth Minister for an area. Native Title Representative Bodies have specialist functions set out in the Native Title Act within the area for which they are the Native Title Representative Body. However, the functions of a Native Title Representative Body are such that they do not hold details on the cultural features or heritage values of an area and therefore do not inform Woodside's understanding of heritage values or cultural features.

For the activity in this EP, there are 10 coastal ILUAs, 3 native title claims or determinations and 5 Registered Aboriginal Parties (RAPs) overlapping the EMBA (see Figure 4-18).

4.6.1.3. Coastally Adjacent First Nations Groups

Woodside understands that Indigenous groups are keenly aware of the extent of their rights, interests, and responsibilities for Country, and these are generally discrete, defined areas, including areas of sea (Smyth 2007). To identify cultural features and heritage values which may exist outside of native title claim, determination and ILUA areas, Woodside considers native title claims, determinations and ILUAs coastally adjacent to the EMBA to be an instructive means of identifying potentially relevant Indigenous groups to be consulted (see Table 4-8).

That said, Woodside understands from engagement with stakeholders that extending a native title group's responsibility to areas which those groups have elected to not include in their claims or ILUAs can have significant cultural consequences for Indigenous groups and individuals. This may also, over time, build expectations in the broader Indigenous community that a group is responsible for maintaining environmental values in areas for which they do not hold traditional knowledge. Woodside also acknowledges that an Indigenous group's relative proximity to any operational areas or EMBA is not necessarily a meaningful indicator of the connection of Indigenous groups to the area, and providing advice over such areas can be culturally dangerous. As a result, caution must be used when conducting broader engagement.

A summary of native title claims, determinations, Registered Aboriginal Parties (RAPs) and ILUAs overlapping or coastally adjacent to the EMBA is set out in Table 4-8. Claims and determinations have not been differentiated in this table, as it is acknowledged that either of these may indicate the existence of rights and interests.

For the activity in this EP, the ILUAs, RAPs, native title claims or determinations adjacent to, and overlapping the EMBA are shown in Figure 4-18.

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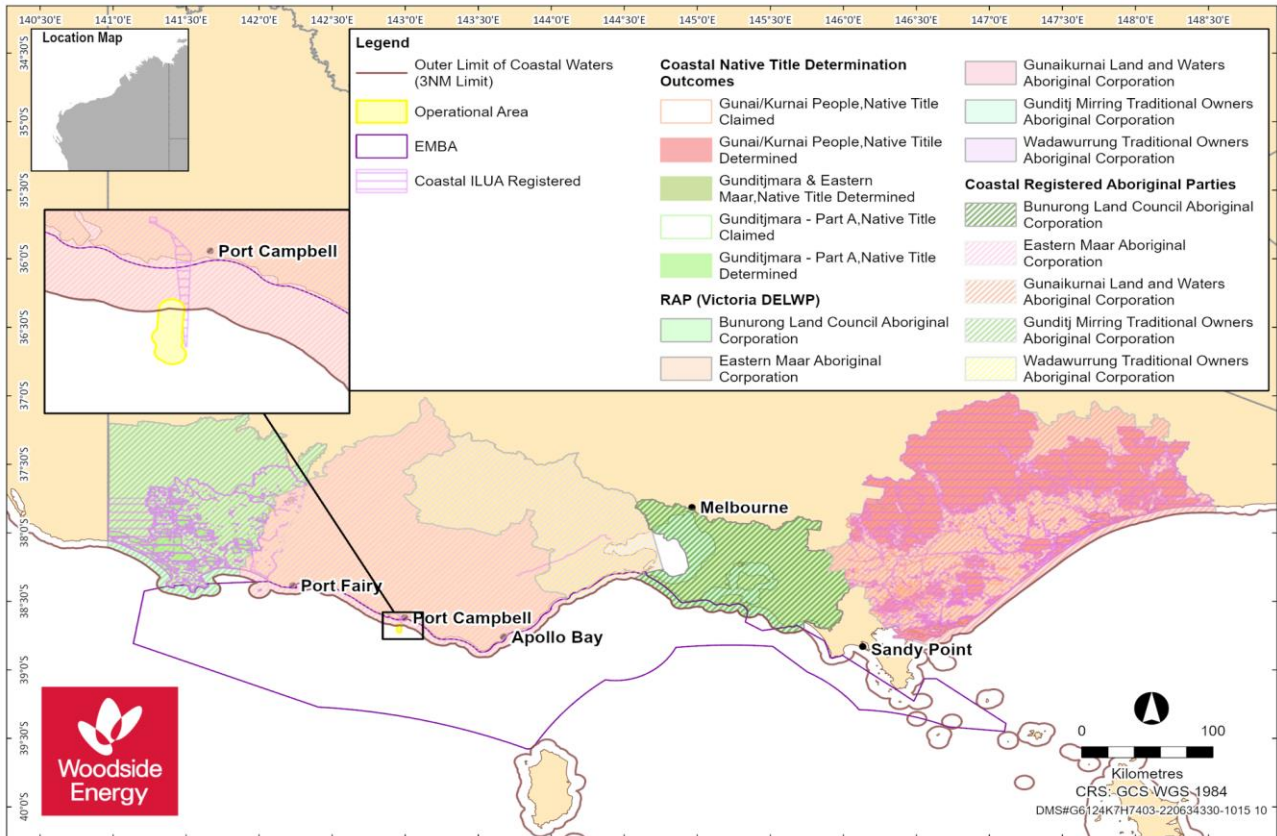


Figure 4-18: Operational area and socio-economic EMBA in relation to native title claims, determination, RAPs, and ILUAs. Note the EMBA is larger than that presented in Section 4.1, as the EMBA used to identify native title, RAPs, and ILUAs considers Minerva plug and abandonment activities in addition to field management activities.

Table 4-8: Summary of Native Title Claims, Determinations, RAPs, and ILUAs which overlap or are coastally adjacent

Claim / Determination / ILUA / RAP	Registered Native Title Body Corporate	Overlap with EMBA	Coastally Adjacent to the EMBA
Claim / Determination			
Gunai/Kurnai People	Gunaikurnai Land & Waters Aboriginal Corporation RNTBC (GLAWAC)	No	Yes
Gunditjmara & Eastern Maar	Gunditj Mirring Traditional Owners Aboriginal Corporation RNTBC (GMTOAC), Eastern Maar Aboriginal Corporation RNTBC (EMAC)	Yes	Yes
Gunditjmara – Part A	GMTOAC	Yes	Yes
RAP			
Bunurong Land Council Aboriginal Corporation (BLCAC)	BLCAC	Yes	Yes
Eastern Maar Aboriginal Corporation (EMAC)	EMAC	Yes	Yes

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Claim / Determination / ILUA / RAP	Registered Native Title Body Corporate	Overlap with EMBA	Coastally Adjacent to the EMBA
Gunaikurnai Land and Water Aboriginal Corporation (GLAWAC)	GLAWAC	No	Yes
Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC)	GMTOAC	Yes	Yes
Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC)	WTOAC	Yes	Yes
ILUA			
BHPP - Minerva	None listed	Yes	Yes
Blargowrie	None listed	Yes	Yes
Gunditj Mirring and State of Victoria	GMTOAC	Yes	Yes
Gunditj Mirring Non-Extinguishment Principle ILUA	GMTOAC	Yes	Yes
Gunditjmara – SEAGAS Port Campbell VIC to Torrens Island SA Pipeline ILUA	GMTOAC, EMAC	Yes	Yes
Kirrae Whurrong and SEA Gas ILUA	None listed	Yes	No
All Abilities Playspace ILUA	GMTOAC	No	Yes
Gournditch Mara and Essential Petroleum Resources Ltd ILUA	None listed	No	Yes
Gunaikurnai and Icon Energy ILUA	GLAWAC	No	Yes
Gunaikurnai Settlement ILUA	GLAWAC	No	Yes

4.6.1.4. Marine Parks

Woodside acknowledges that Commonwealth and State Marine Park Management Plans have sought to recognise cultural values of Indigenous groups. Australian Marine Parks (AMP) describe this framework in the following way: ‘when making decisions about what can occur in marine parks and what action we will take to protect marine parks, we take values into account’. AMP summarises these values as natural values, cultural values, heritage values and socio-economic values. Woodside is triggered to undertake an assessment of cultural values within Marine Park Management Plans where the operational area or EMBA overlaps an AMP. Woodside considers the management plans of marine parks that overlap the operational area and the EMBA to determine whether cultural features and heritage values have been identified and whether there are specified Traditional Custodians or representative bodies referenced to contact regarding potential cultural features and heritage values.

The operational area does not overlap any AMPs or State Marine Parks. The EMBA overlaps the Apollo Australian Marine Park (AMP) and nine Victorian Protected Areas. Where these plans identify representative bodies who may hold knowledge of heritage values or cultural features—including but not limited to Registered Native Title Bodies Corporate—these bodies are consulted (see Appendix F). Consultation with these groups may identify heritage values and cultural features beyond those addressed in the marine park management

plans. No identifiable representative bodies were specified for the marine parks overlapped by the EMBA (Section 4.5.6).

The South-east Commonwealth Marine Reserves Network Management Plan 2013-2023 identifies that “Indigenous people from at least 17 distinct Aboriginal language groups have occupied, used and managed coastal land and sea environments in and adjacent to the South-east Marine Region for thousands of years. Their relationship with the Region began when sea levels were much lower, allowing Indigenous people to harvest species and use parts of the Region that are now covered by deeper offshore waters” (Director of National Parks, 2013). The assessment of First Nations’ people connection to the Operational Area and EMBA is addressed in Section 4.6.1.5, including consideration of underwater cultural heritage.

Multiple Management Plans note the significance of the marine park areas to Aboriginal groups. For example, the Management Plan for the Twelve Apostles Marine National Park and The Arches Marine Sanctuary states “that Sea Country is central to the culture of Indigenous communities in south-western Victoria. The park and sanctuary are an integral part of this sea Country and present an opportunity to build community awareness of their cultural significance” (Parks Victoria, 2006). Sea country values and Indigenous archaeological heritage are addressed in Section 4.6.1.5.

A number of Management Plans note shipwrecks within the marine parks. These are addressed in Section 4.6.1.8.

4.6.1.5. Sea Country Values

Woodside recognises the potential for marine ecosystems to include cultural features as well as environmental values. This is one aspect of the broader concept of “sea country”, which can be defined as the area of sea over which an Indigenous group has interests, cultural value, connection and use. Country’ refers to more than just a geographical area: it is shorthand for all the values, places, resources, stories and cultural obligations associated with that geographical area.” (Smyth, 2007). It necessarily follows that an impact to marine ecosystems has the potential to impact cultural features where the impact is detectable within sea country—the seascape which Traditional Custodians view, interact with or hold knowledge of. The link between environmental protection and cultural heritage protection is illustrated in the Australian Government’s Indigenous Protected Areas Program. The Indigenous Protected Areas program provides for “areas of land and sea managed by Indigenous groups as protected areas for biodiversity conservation...IPAs deliver environmental benefits...Managing IPAs also helps Indigenous communities protect the cultural values of their country for future generations...” (DCCEEW, 2023c).

McNiven (2004) suggests that “For those mainland groups whose exploitation of the sea was limited to littoral resources, it is likely that seascapes extended no more than c. 20–30 km out to sea, out to the horizon and the limit of human visibility. ... However, in some coastal places, clouds that can be seen well over 100 km out to sea are imbued with spiritual significance. For those groups with elaborate canoe technology, seascapes extend well over the horizon.” There is evidence of watercraft being used for short ocean voyages to visit some islands offshore Victoria, however they tended to be more frequently used on inland lakes and rivers (Goughwin and Fullagar, 1995). The process for identifying Indigenous groups who may have interests and connection in Sea Country are set out in Section 5.5.2.1. The scope of advice Traditional Custodians were encouraged to provide through project consultation was not limited by reference to any particular boundaries or limits of sea country.

Cultural features of coastal areas may include marine species (e.g., whales) that may travel many thousands of kilometres through areas with similar cultural values to multiple Indigenous language groups. As noted in Section 4.4.1, Southern Right Whales are a highly mobile migratory species that can travel thousands of kms between habitats used for these essential life functions (Kenney, 2018) passing Indigenous language groups along the southern and eastern coasts of Australia. For a further description of whales, whale distribution and whale migration patterns, see Section 4.4.1.

As set out above, an impact to marine ecosystems has the potential to impact cultural values where the impact is detectable within Sea Country. Woodside considers that impact to cultural values of marine species will be adequately managed in areas of traditional Sea Country, and therefore management of the environmental values will preserve the cultural values of environmental receptors, as assessed in Sections 7 and 8.

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Woodside is triggered to consult on cultural values of Sea Country where Traditional Custodians or representative institutions are identified, or self-identify, as relevant persons.

Indigenous Archaeological Heritage Assessment

Woodside understands that communal cultural connection may exist between Traditional Custodians and land and waters. It is understood from the onshore archaeological record that Aboriginal people have occupied the Australian continent for at least 65,000 years (Clarkson et al., 2017) and in many places maintain a strong continuing connection that is said to extend back in Indigenous cosmology to the beginning of time.

It is understood that the sea level has risen significantly during the 65,000 years of Indigenous occupation of Australia, and areas that were once inhabited are now submerged on the continental shelf (Veth et al., 2019). Sea levels reached a minimum of -130 m at the Last Glacial Maximum ~20,000 years ago (Benjamin et al., 2020). Material preserved on the ancient landscape to -130 m has the potential to provide further information about the earliest periods of human occupation (Veth et al., 2019; UWA, 2021).

Recent archaeological discoveries demonstrate that the now submerged landscape was occupied and inhabited and can retain archaeological material from this time (Benjamin et al., 2020; Benjamin et al., 2023 see Ward et al, 2021 for an opposing view (noting Ward et al., 2021 has been retracted)).

In recognition of this, Woodside considers the ancient landscape between the mainland and -130 m water depth as an area where potential Indigenous archaeological material may exist on the seabed, as this covers the full extent of this possible Indigenous occupation. Known Indigenous heritage places including archaeological sites within Commonwealth waters may be protected subject to declarations under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, *Underwater Cultural Heritage Act 2018* or *EPBC Act 1999*. However, these Acts only extend protection to heritage places specified by declaration or otherwise included on a statutory list. Woodside understands that there is no Indigenous archaeology known to exist anywhere within Commonwealth waters and no declarations or prescriptions under these Acts are located within the EMBA. Archaeological material on the ancient landscape is a relevant matter for the proposed activity as there is overlap between the Operational Area and the ancient landscape, and potential for seabed disturbance from planned activities and therefore potential for impacts to archaeological material.

Aboriginal cultural heritage within Victorian State waters is protected under the *Aboriginal Heritage Act 2006*. The waters within the Operational Area, and waters and coastline within the EMBA are identified as “areas of cultural heritage sensitivity” within the Aboriginal Cultural Heritage Information System (ACHRIS) online mapping tool. For this EP, an Application for Advice for the Victorian Aboriginal Heritage Register was submitted. 3 Aboriginal Places were identified adjacent to the Operational Area, however First Peoples State Relations confirmed these Places are not located near the Operational Area (see Appendix G).

No archaeological sites within the operational area or EMBA were identified by Traditional Custodians during the course of preparing the EP.

Cultural Features and Heritage Values identified in Publicly Available Literature

Publicly available sources were assessed for any records of previously identified Sea Country values or cultural features that may overlap with the operational area or EMBA. Where cultural features or Sea Country values were identified these are summarised in Table 4-9 according to the First Nations groups (where identified or inferable) who hold these values.

Table 4-9: First Nations groups with cultural features and values within the operational area and EMBA

First Nations Group	Features and Values	Source	Potential for overlap	
			Operational Area	EMBA
Eastern Maar (Maar, Eastern Gunditjmara, Tjap Wurrung, Peek	Value: “Deen Maar Island [Lady Julia Percy Island] is a culturally significant site and special place to Eastern Maar and Gunditjmara peoples.”	Victoria State Government, 2023	No	Yes

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First Nations Group	Features and Values	Source	Potential for overlap	
			Operational Area	EMBA
Whurrong, Kirrae Whurrung, Kuurn Kopan Noot and/or Yarro waetch (Tooram Tribe)	Feature: Eels, perch, blackfish, yabbies, abalone, cockles, crayfish	Eastern Maar Aboriginal Corporation, 2015	Yes	Yes
	Feature: Ancient middens		No	Yes
	Value: "Spirits of our dead reside in our waterways and water bodies"		Possible	Possible
	Value: "A story associated with Deen Maar Island is that the spirits go first to Deen Maar and then up to the stars, as Bunjil had done"		Possible	Possible
	Value: Responsibility to protect cultural heritage		Yes	Yes
	Value: Connections with the sea and its resources		Yes	Yes
	Value: "The coastline is home to sites that are important for our Dreaming - Three Sisters Rocks and Deen Maar (Lady Julia Percy Island) where our Ancestors leave the earth."		Possible	Possible
	Value: "The connection with our Sea Country extends well beyond the current shoreline to the edge of the continental shelf."		Yes	Yes
	Value: Dreaming and creation stories		Possible	Possible
	Value: Songlines across the land and out to sea		Possible	Possible
	Feature: middens and burial sites along the coastline	Possible	Possible	
	Value: "Koontapool Woorkngan Yakeen (Whale Birthing Dreaming Sites), are in coastal bay areas from Port Campbell to Portland, including Warrnambool. These places on Gunditjmarra Country are known resting and feeding sites for mothers and calves and are directly related to Gunditjmarra Neeyn (midwives), explaining why Gunditjmarra is a Matrilineal Nation."	DCCEEW, 2022	No	Possible
	Value: Yambuk and Deen Maar are spiritually significant places	Lovett on behalf of the Gunditjmarra People v State of Victoria (No 5) [2011] FCA 932	No	Yes
Value: Fishing at Port Fairy	No		Yes	
Gunditjmarra	Value: "Deen Maar Island [Lady Julia Percy Island] is a culturally significant site and special place to Eastern Maar and Gunditjmarra peoples."	Victoria State Government, 2023	No	Yes

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First Nations Group	Features and Values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: Ancestral creation beings revealing themselves in the landscape: erupting volcanoes; tsunamis; mountains forming; sea country creeping up onto the land.	Weir, 2009	Possible	Possible
	Value: The island Deen Maar (Lady Julia Percy Island), is where the Gunditjmarra believe the spirits of their dead travel to wait to be reborn.		No	Possible
	Feature: The Budj Bim lava flow, recognised as an attribute contributing to the Outstanding Universal Value of the Budj Bim World Heritage Site extends into Portland Bay.	Wheeler et al., 2023	No	Yes
	Value: The spiritscape associated with the Gunditjmarra dreaming spirits extends into Portland Bay up to Deen Maar Island (Lady Julia Percy Island)	ICOMOS, 2019	No	Possible
	Value: "Koontapool Woorkngan Yakeen (Whale Birthing Dreaming Sites), are in coastal bay areas from Port Campbell to Portland, including Warrnambool. These places on Gunditjmarra Country are known resting and feeding sites for mothers and calves and are directly related to Gunditjmarra Neeyn (midwives), explaining why Gunditjmarra is a Matrilineal Nation."	DCCEEW, 2022	No	Possible
	Value: Yambuk and Deen Maar are spiritually significant places	Lovett on behalf of the Gunditjmarra People v State of Victoria (No 5) [2011] FCA 932	No	Yes
	Value: Fishing at Port Fairy		No	Yes
Bunurong	Feature: The sands of the Bass Coast contain the footprints left behind by elders	Engage Victoria, n.d.	No	Yes
	Feature: Where the rivers meet the sea		No	Yes
Wadawurrung People	Values: Bundjil and our ancestor spirits who continue to live in the land, water and sky	Wadawurrung Traditional Owners Aboriginal Corporation, 2020a	Possible	Possible
	Feature: Middens in bays or sand dunes		No	Possible
	Feature: Crayfish, abalone, mussels, oysters, pipis and fish		Yes	Yes
	Feature: Fish traps near tidal marine locations		No	Possible

First Nations Group	Features and Values	Source	Potential for overlap	
			Operational Area	EMBA
	Value: Caring for country aspirations including coastal country and sea country		No	Yes
	Features: Sandy beaches	WTOAC, 2020b	No	Yes
	Features: Coastal cliffs		No	Yes
	Features: Rocky reefs		Possible	Possible
	Features: Tidal areas		No	Yes
	Features: Kelp and seaweed forests		Possible	Possible
	Features: Seagrass		Possible	Possible
	Features: Rock lobster		Possible	Possible
	Features: Abalone		Possible	Possible
	Features: Seals		Possible	Possible
	Features: Whales		Possible	Possible
	Features: Dolphins		Possible	Possible
	Features: Fish		Yes	Yes
	Features: Oysters		Possible	Possible
Features: Seabeds	Yes		Yes	
Gunaikurnai	Value: Connection to coastal and marine parts of country	GLAWAC, 2024	Yes	Yes
	Features: Terrestrial and marine resources of sea country		Yes	Yes

Feedback Received via Consultation to Inform Existing Environment Description

Indigenous cultural values are communally held. This is reflected in Vision 3 of Dhawura Ngilan that “Aboriginal and Torres Strait Islander heritage is managed... according to community ownership” (Heritage Chairs of Australia and New Zealand, 2021). Dhawura Ngilan also specifically notes that “Aboriginal and Torres Strait Islander... intangible knowledge systems, which are held in songlines and language, are endangered. This knowledge is held by Elders and the community...”. Through consultation with relevant persons, Registered Native Title Bodies Corporate have identified or raised topics relating to environmental values of cultural interest. Details of consultation are provided in Appendix F.

Table 4-10 - Feedback received via consultation with First Nations groups

Relevant First Nations Group / Individuals	Consultation Context	Description of Value / Feature / Interest	Potential for overlap	
			Operational Area	EMBA
Wadawarrung Traditional Owners Aboriginal Corporation	Consultation in the course of preparing this EP	Value: The coastline is culturally important	No	Yes
Gunaikurnai Land and Waters	Consultation in the course of preparing this EP	Interest: Being consulted in the event of an emergency	Yes	Yes

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Relevant First Nations Group / Individuals	Consultation Context	Description of Value / Feature / Interest	Potential for overlap	
			Operational Area	EMBA
Aboriginal Corporation				
Bunurong Land Council Aboriginal Corporation	Consultation in the course of preparing this EP	Value: Eels	Yes	Yes
		Value: Seagrass	No	Yes
Eastern Maar Aboriginal Corporation	Consultation in the course of preparing this EP	Interest: Being notified in the event of leaks from wells	Yes	No
		Feature: Risks to whales from the activities described in this EP	Yes	Yes
		Feature: Noise impacts to eels	Yes	Yes
		Value: Eels - "We are the eel people"	Yes	Yes
		Value: Intangible heritage	Yes	Yes
Gunditj Mirring Traditional Owners Aboriginal Corporation	Consultation in the course of preparing this EP	Value: These waters are significant breeding grounds and habitats for culturally significant species to the Gunditjmara people and also hold intangible heritage as well as submerged tangible heritage for our community	Yes	Yes
		Feature: Deen Maar Island (also known as Lady Julia Percy Island) and its surrounds hold deep spiritual significance to Gunditjmara people	No	Yes
		Feature: Kooyang (short-finned eel) [<i>Anguilla australis</i>] migrate out of the Budj Bim World Heritage Area in Gunditjmara Country through the Otway Basin, up to the Coral Sea. Kooyang hold an incredibly important place in the culture of Gunditjmara people and are central to the functioning of the Budj Bim World Heritage Area – one of the oldest aquaculture systems in the world	Yes	Yes
		Feature: Karntubul (whales) found in Gunditjmara Sea Country hold deep cultural significance to our people, featuring in Dreaming stories, ceremony, song and dance traditions of the Gunditjmara	Yes	Yes

Relevant First Nations Group / Individuals	Consultation Context	Description of Value / Feature / Interest	Potential for overlap	
			Operational Area	EMBA
		Feature: The Bonney Upwelling is a dominant ecological feature of Gunditjmarra Sea Country, creating vital feeding grounds for culturally significant species. It is extremely important for marine and coastal ecosystems within Gunditjmarra Sea Country	No	No

4.6.1.6. Intangible Cultural Heritage

Cultural knowledge, as expressed through songlines, dreaming, dance and other cultural practices, can be associated with tangible objects and physical sites that are culturally important to First Nations people (Ardler, 2021; Bursill et al., 2007). Intangible cultural heritage can also be embodied in the practices, representations, expressions, knowledge, uses and skills associated with physical sites (UNESCO, 2003). As a result, physical features may have intangible dimensions (ICOMOS, 2013). In terms of identified cultural features and heritage values related to intangible values, see below some additional context:

- Songlines: Oral Songlines are often described by First Nations people as the law of the land and make up part of the Dreaming (Neale and Kelly, 2020). Songlines are viewed in Western academia as a framework for relating people to land and consist of a series of invisible, interconnected routes along the landscape that mark significant sites for First Nations people (Higgins, 2021). Songlines demonstrate First Nations peoples’ strong connections to land by revealing shared knowledge that is place-specific (Roberts, 2023). The land’s physical features are instrumental in maintaining songlines because this is how ancestral spirits journeyed through, and interacted with, the physical landscape leaving shared knowledge behind. The interconnection between the physical and spiritual is where songlines become intrinsically tied to significant places across Country. As a result, geographical landforms are recorded within songlines and become sacred places. Such landforms can include inter alia: rocks, mountains, rivers, caves, and hills (Higgins, 2021). Songlines can become lost, fragmented, or broken when there is a loss of Country or forced removal from Country (Neale and Kelly, 2020). Physical sites that have been identified as comprising a component of a songline are important to protect in order to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. No specific details of songlines have been provided by relevant persons during consultation for this Activity. The Activity is located within the ancient landscape where prominent landscape features (e.g., rocks, mountains, rivers, caves and hills) would have been visible or used by Traditional Custodians and therefore likely to be incorporated in songlines. In Australia, songlines can stretch thousands of kilometres, making up a complex and organic network of stories containing cultural knowledge of First Nations communities across the land (Neale and Kelly, 2020). Songlines can also extend out to Sea Country and contain cultural knowledge that is tied to geographic features, atmospheric phenomena and marine plants and animals. Often songlines containing references to a seascape or Sea Country make mention of mythical events occurring around marine life, fishing areas, submerged rocks or coral. Songlines that embody seascapes can reflect how a group may relate to, or value, Sea Country—for example connections to nearby islands that they once inhabited in their songlines (Smyth and Isherwood, 2016). Songlines can also be used as proof of long-standing connection to land and support a legal entitlement to land rights (Higgins, 2021). Examples where songlines contain strong references to Sea Country are more common in Pacific Islander and Torres Strait Islander communities, who often refer to seascapes and skylines in their songlines in order to communicate sacred knowledge that assists in safe navigation of the ocean (Neale and Kelly, 2020). Whilst no specific details of songlines have been provided by relevant persons during consultation for this Activity, it can be

confirmed that no landforms typical of songlines have been identified or are anticipated to be impacted by the Activity.

- Creation/dreaming sites, sacred sites and ancestral beings: Sources identified by Woodside contained descriptions of the location of ancestral beings or creation/dreaming/ sacred sites and placed these locations on land, islands, within inland water sources such as rivers and in the sea (e.g., Portland Bay). It is acknowledged that some ancestral beings are noted to live within or originate from the sea generally, and some creation stories talk to the creation of features from or in the sea. Additionally, places on shore or at sea are (without further information or specificity) assumed to have been created on some level in First Nations cosmology.
- Cultural obligations to care for Country: Caring for Country collectively refers to the cultural obligations of individuals and groups, as well as rituals and ceremonies required for the physical and spiritual health of the environment. In the literature reviewed by Woodside, caring for Country was noted to include, but is not limited to, maintenance of the physical environment and ecosystem. It may also have cultural, spiritual, and ritual dimensions such as caring for ancestral beings or ensuring cultural safety.
- Knowledge of Country/customary law and transfer of knowledge: Knowledge of and familiarity with the features of Sea Country is itself a “value”. The inherent potential for restricted or secret knowledge (or information that is not wished to be shared) makes this difficult to assess even through consultation with Traditional Custodians. However, aspects such as limitations on access to sites or disruption/relocation of First Nations communities may have implications for the preservation of First Nations knowledge. Further, connection to Country may be damaged where people are displaced or disrupted (e.g., during colonisation) or where there is a loss of technical skills or environmental knowledge (McDonald and Phillips, 2021). Transfer of knowledge includes continuing traditional practices to pass on practical skills. This transfer of knowledge may be integral to managing a group’s intangible cultural heritage (UNESCO, 2003).
- Connection to Country: Describes the multi-faceted relationship between First Nations people and the landscape, which is envisioned as having personhood and spirit. It is also an aspect of personal identity for many First Nations people. In the case of Sea Country this can mean identifying as a Saltwater person, where “essence of being a ‘Saltwater’ person is ontological... it is about how people relate spiritually to the sea and engage with spiritual forces that created it, the marine flora and fauna and people” (McDonald and Phillips, 2021).
- Access to Country, including Sea Country: Is necessary for the continuation of other values including caring for Country and the transfer of traditional knowledge. Being on Country can be an important way of expressing or maintaining connection to Country (Australian Indigenous HealthInfoNet. n.d.). Access is also a value in its own right as a continuation of traditional Sea Country access and use.
- Cultural Safety: refers to respecting local Lore and culturally significant areas to protect individuals from cultural harm. There are many cultural implications for those (Aboriginal and non-Aboriginal) who do not follow cultural advice or access Country in culturally inappropriate ways. Cultural safety may include observing gender restricted areas, respecting significant places and restricted areas as well as following the advice from those with cultural authority.
- Kinship systems and totemic species: Individuals may have kinship to specific species (Smyth, 2008; Juluwarlu, 2004) and/or a responsibility to care for species (Muller, 2008). Kinship arises from totemic associations within First Nations “skin group” systems. It is forbidden for an individual to kill or eat a species who is from the same “skin group” (Juluwarlu, 2004). They may also have certain obligations linked to caring for Country. It is assumed that marine species may have kinship/totemic relationships to Traditional Custodians, but it is understood that these relationships do not prohibit people outside of that “skin group” from hunting or eating that same species (Juluwarlu, 2004).
- The DCCEE Draft National Recovery Plan for the Southern Right Whale (*Eubalena Australis*) notes that “In Victoria, Koontapool (Southern Right Whales) occur along the coastlines of south-west Victoria in Gunditjmara Sea Country to feed and birth. These Koontapool Woorkngan Yakeen (Whale Birthing Dreaming Sites), are in coastal bay areas from Port Campbell to Portland, including Warrnambool. These

places on Gunditjmara Country are known resting and feeding sites for mothers and calves and are directly related to Gunditjmara Neeyn (midwives), explaining why Gunditjmara is a Matrilineal Nation” (DCCEEW, 2022). The Southern Right Whale is addressed in Sections 4.4.1, 7 and 8.

- Resource collection: A number of marine species are identified in literature as important resources, particularly as food sources. In addition to their immediate value as sustenance, the gathering and preparation of these resources is informed by cultural knowledge, and an inability to use these resources may result in a loss of ability to transfer that knowledge to future generations.

4.6.1.7. Historic Sites of Significance

There are no known sites of historic heritage of significance within the operational area. Within the EMBA, there are 33 sites of historic heritage listed on the Victorian Heritage Database (Appendix G).

4.6.1.8. Underwater Heritage

A search of the Australasian Underwater Cultural Heritage Database, which records all known Maritime Cultural Heritage (shipwrecks, aircraft, relics, and other underwater cultural heritage) in Australian waters does not contain records of sites within the operational area but does include approximately 179 shipwrecks within the EMBA. The Minerva Gas Field Development Environmental Impacts Statement – Environmental Effects Statement Summary notes that the pipeline route selected for construction avoided any known archaeological and heritage features [including shipwrecks] (BHPP, 1999). Woodside is undertaking a desktop assessment for the Minerva decommissioning activities to assess risks to underwater cultural heritage, as described in Section 7.2.6.

4.6.1.9. World, National and Commonwealth Heritage Listed Places

No listed World or National heritage places overlap the operational area. One National Heritage Place overlap the EMBA – the Great Ocean Road Scenic Environs. As noted in Section 4.6.1.5, whilst the Budj Bim World Heritage Area boundaries do not overlap the operational area or EMBA, the lava flow feature associated described in the Statement of Outstanding Universal Value for Budj Bim (UNESCO, 2019) is known to extend into the EMBA (Wheeler et. al, 2023). It does not extend into the Operational Area. The Budj Bum World Heritage Area boundary is approximately 5 km north of the coast.

4.6.2. Commercial Fisheries

The EMBA overlaps the management areas for eight Commonwealth-managed fisheries and seven State-managed fisheries. Table 4-11 provides a summary description of the commercial fisheries with management areas overlapping the operational area and EMBA and assesses the potential for those fisheries to be operating within those areas during the petroleum activity.

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Table 4-11: Commonwealth and State managed fisheries with management areas overlapping the operational area and EMBA

Fishery	Target Species	Description	Expected Presence	
			Operational Area	EMBA
Commonwealth-managed Fisheries				
Bass Strait Central Zone Scallop	Scallops (<i>Pecten fumatus</i>)	Towed dredge fishing method. Fishery managed via seasonal/area closures and total allowable catch (TAC) controls together with quota statutory fishing rights (48 permits for 2019 season and 43 permits for the 2020 season) and individual transferrable quotas. 9 vessels were active in the fishery in the 2020 season. Fishing season: typically July to 31 December	No Fishing intensity data shows activity north and east of King Island, with most effort north of Flinders Island.	Yes
Eastern Tuna and Billfish	Albacore tuna (<i>Thunnus alulunga</i>) Bigeye tuna (<i>Thunnus obesus</i>) Yellowfin tuna (<i>Thunnus albacares</i>) Broadbill swordfish (<i>Xiphias gladius</i>) Striped marlin (<i>Kajikia audux</i>)	Pelagic longline, minor line (such as handline, troll, rod and reel). A total of 81 longline boat Statutory Fishing Rights, and 83 minor line Statutory Fishing Rights were issued in 2020. Vessels operating on 2019 and 2020 season –37 and 35 longline and 0 minor-line. Fishing season: 12-months beginning on 1 January	No Fishery effort is concentrated along the NSW coast and southern Queensland coast. No Victorian ports are used to land catches.	No
Skipjack (eastern)	Skipjack tuna (<i>Katsuwonus pelamis</i>).	Historically, over 98% of the catch was taken using purse seine catch method. Pole and line method was used for the remaining 2% of the catch. Fishing season: not currently active.	No No fishing effort in the fishery since 2008-09 fishing season (stock highly variable and Australia is at the edge of the species range).	No
Small Pelagic (western sub-area)	Jack mackerel (<i>Trachurus declivis</i> , <i>T. symmetricus</i> , <i>T. murphyi</i>)	Purse seine and mid-water trawl are the main fishing methods. There were 33 Statutory Fishing Rights in the 2020-21 fishing season, with 4 purse seine and 2 mid-water trawl vessels active.	No Fishery effort concentrated in NSW, South Australia, and eastern Tasmania.	No

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Fishery	Target Species	Description	Expected Presence	
			Operational Area	EMBA
	Blue mackerel (<i>Scomber australasicus</i>), Redbait (<i>Emmelichthys nitidus</i>) and Australian sardine (<i>Sardinops sagax</i>).	Fishing season: 12-months beginning 1 May		
Southern and Eastern Scalefish and Shark Fishery (SESSF) – Commonwealth Trawl Sector (CTS)	Blue grenadier (<i>Macruronus novaezelandiae</i>), Tiger flathead (<i>Platycephalus richardsoni</i>), Pink ling (<i>Genypterus blacodes</i>) Silver warehou (<i>Seriolella punctata</i>)	Fishing methods include otter trawl and Danish seine. There are 57 trawl licences with 30 trawl and 19 Danish seine vessels operational in the 2019/20 season. Fishing season: 12-months beginning 1 May	No (CTS) No (Danish Seine) Trawl sector is concentrated around shelf-break areas. Danish seine activity is located on the continental shelf and operate in sandy bottom environments.	Yes (CTS) No (Danish Seine)
SESSF – Shark Gillnet and Shark Hook Sectors	Gummy shark (<i>Mustelus antarcticus</i>)	Within the Shark Gillnet and Hook sector there were 61 gillnet fishing permits and 13 hook fishing permits issued in 2019-20 season. Vessels actively fishing during the season included 35 gillnet vessels and 36 hook vessels. Fishing season: 12-months beginning 1 May	Yes (Gillnet) No (Hook) Gillnet sector heavily utilises the continental shelf. Hook sector does not fish in the Gippsland Basin.	Yes (Gillnet) No (Hook)
Southern Bluefin Tuna	Southern bluefin tuna (<i>Thunnus maccoyii</i>)	The primary fishing method is purse seine in waters off South Australia with a number of fishes captured by longline vessels off the East Coast. Tuna caught off South Australia are then transferred to aquaculture farming pens off Port Lincoln in South Australia. In the 2019-20 fishing season, there were 82 fishing permits with 7 active purse seine vessels and 23 longline vessels. Fishing season: 12-months beginning 1 December	No Fishery effort concentrated in the Great Australian Bight (GAB) off Kangaroo Island and in southern NSW coast off the continental shelf.	No

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Fishery	Target Species	Description	Expected Presence	
			Operational Area	EMBA
Southern Squid Jig	Gould's squid (<i>Nototodarus gouldi</i>)	Squid jigging is the fishing method used, mainly in water depths of 60 to 120 m, at night. In 2020, there were 5 active jig vessels in the Commonwealth fishery. Portland is a primary landing port. Fishing season: 12-month season beginning 1 January	No Catches are concentrated in Commonwealth waters between Portland and Robe (SA). Low fishing intensity occurs in eastern Victoria and southern NSW.	Yes
State-managed Fisheries				
Victorian Rock Lobster Fishery	Predominantly southern rock lobster (<i>Jasus edwardsii</i>), along with small quantities of eastern rock lobster (<i>Jasus verreauxi</i>).	71 licences in the Western zone, permitted to use baited rock lobster pots. In 2019/20, there were 43 vessels working in the western zone (VFA, 2021). In 2019/20, 225.6 tonnes were harvested in the western zone. Fished from rocky reefs in waters up to 150 m depth, with most of the catch coming from inshore waters less than 100 m deep. Pots are generally set and retrieved each day, marked with a surface buoy. Closed seasons: females 1 June to 15 November and males 15 September to 15 November.	Yes Fishing occurs throughout the area on rocky reefs.	Yes
Victorian Giant Crab Fishery	Giant crab (<i>Pseudocarcinus gigas</i>).	Giant crabs can only be taken using commercial rock lobster pots by Western Zone lobster fishers. Since the introduction of quota management in the Giant Crab Fishery in 2001, there have been < 5 dedicated fishers active in the fishery and up to 20 fishers annually reporting Giant Crab catch as by-product from Rock Lobster fishing (VFA, 2021). In 2019/20 season 9.5 t was landed (VFA, 2021). Fished mostly on the shelf break (150-350 m water depth).	No Although concentrated on the continental shelf, given that licence holdings are linked to southern rock lobster licences, there may be some fishing.	Yes

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Fishery	Target Species	Description	Expected Presence	
			Operational Area	EMBA
Abalone Fishery	Blacklip abalone (<i>Haliotis rubra</i>) and greenlip abalone (<i>Haliotis laevigata</i>).	<p>The fishery consists of 71 fishery access licences of which 14 operate in the Western Zone, 34 in the Victorian Central Zone, and 23 in the Eastern Zone.</p> <p>Commercial fishing methods use diving equipment such as a surface air supply to the diver (hookah system) from small high speed fishing boats. Diving is normally to depths less than 20 m.</p> <p>Fishing season: 12-months beginning 1 April</p>	<p>No</p> <p>Abalone diving activity occurs close to shoreline (generally to depths of 30 m on rocky reefs).</p>	<p>Yes</p> <p>EMBA intersects the Victorian coastline where diving could occur, however, activity data is unavailable due to confidentiality.</p>
Wrasse Fishery	<p>Blue-throat wrasse (<i>Notolabrus tetricus</i>)</p> <p>Saddled (or purple) wrasse (<i>Notolabrus fucicola</i>)</p> <p>Rosy Wrasse (<i>Pseudolabrus psittaculus</i>)</p> <p>Senator Wrasse (<i>Pictilabrus laticlavus</i>)</p> <p>Southern Maori Wrasse (<i>Ophthalmolepis lineolatus</i>)</p>	<p>The fishery is divided into three commercial management zones; west, central, and east, with licence holders able to fish in any of these zones.</p> <p>There are 22 licences (2021) issued for this fishery. Licences are transferrable.</p> <p>Fishing method is via hand line fishing (other than longline which are not permitted) and rock lobster pots if also in possession of a Rock Lobster Access Fishing Licence.</p>	<p>Yes</p> <p>Wrasses are fished along the entire Victorian coast but in recent years, catches have been the highest off the central coast (Port Phillip Heads, Western Port, and Wilsons's Promontory) and west coast of Victoria (Portland). Catches of saddled wrasse are highest in the Western part of Victoria, which is thought to be related to a greater proportion of suitable reef habitat in this area.</p> <p>Wrasse can inhabit depths up to 160 m, but their preferred depths are approximately 30 m.</p>	<p>Yes</p>
Scallop Fishery	Scallop (<i>Pecten fumatus</i>).	<p>A total of 91 commercial licenses are issued each year and approximately 10-15 vessels operate within the fishery.</p> <p>Commercial vessels tow a single dredge that is dragged along the seabed. Dredges are deployed from the rear of the vessel and are up to 4.5 m wide.</p> <p>Fishing season: 12-months beginning 1 April</p>	<p>No</p> <p>Fishery boundary extends the entire length of the Victorian coastline and out to the 20 nm point from the shoreline although</p>	<p>No</p>

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Fishery	Target Species	Description	Expected Presence	
			Operational Area	EMBA
			mostly fished from Lakes Entrance and Welshpool.	
Octopus Fishery	Pale Octopus (<i>Octopus pallidus</i>) Maori octopus (<i>Macroctopus maorum</i>) Gloomy Octopus (<i>Octopus tetricus</i>)	The fishery has established three zones; western, central and eastern octopus zones to manage commercial octopus fishing in Victoria. The western and central zones are less established and are being managed through exploratory, temporary permits. While the Eastern Zone (East Gippsland) is operational and extends from Seaspray to the Victorian / NSW border and out to 20 nm offshore, except for marine reserves. There are 11 transferable licences issued for the eastern octopus zone. The fishery uses purpose-built unbaited traps which aim to minimise bycatch.	No The eastern octopus zone, from Seaspray to the Victorian / NSW border, is authorised for commercial take of octopus. Western and central octopus zones are less established.	Yes
Multi-species Ocean Fishery	Pale Octopus (<i>Octopus pallidus</i>) Maori octopus (<i>Macroctopus maorum</i>) Gloomy Octopus (<i>Octopus tetricus</i>) A variety of other species may also be taken.	The multi-species ocean fishery is comprised of three relevant sub-sectors: ocean fishery, commercial permit fishery and the octopus fishery (central and western zones). Fishery allows for a variety of fishing methods. Fishing season: 12-months	Possible However, activity data is unavailable this fishery.	Possible However, activity data is unavailable this fishery.

¹ Commonwealth fisheries information sourced from DAWE, 2021 and AFMA, ND.

² State-managed fisheries information sourced from VFA, 2021a

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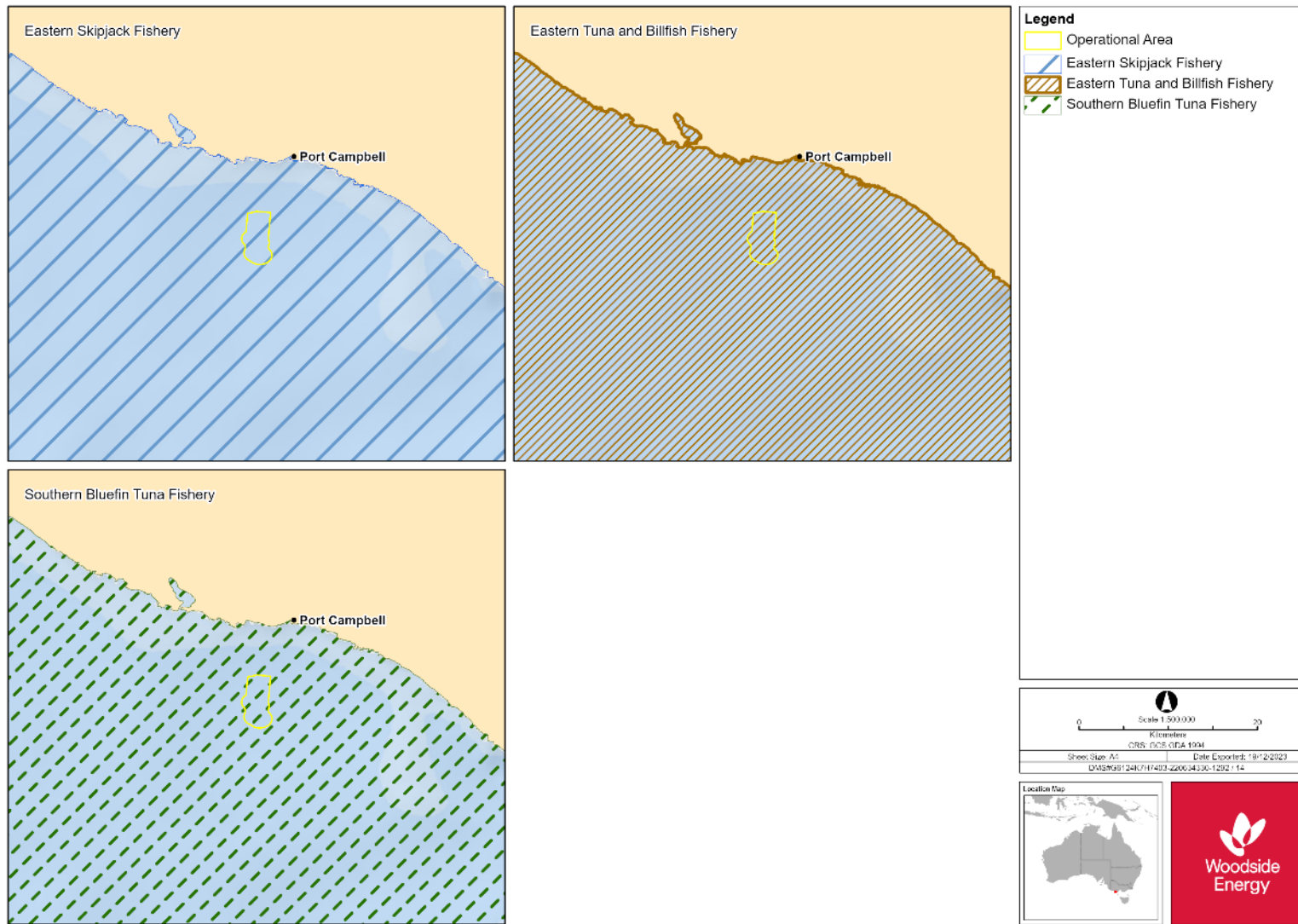


Figure 4-19: Commonwealth fisheries in relation to the operational area (Figure 1 of 2)

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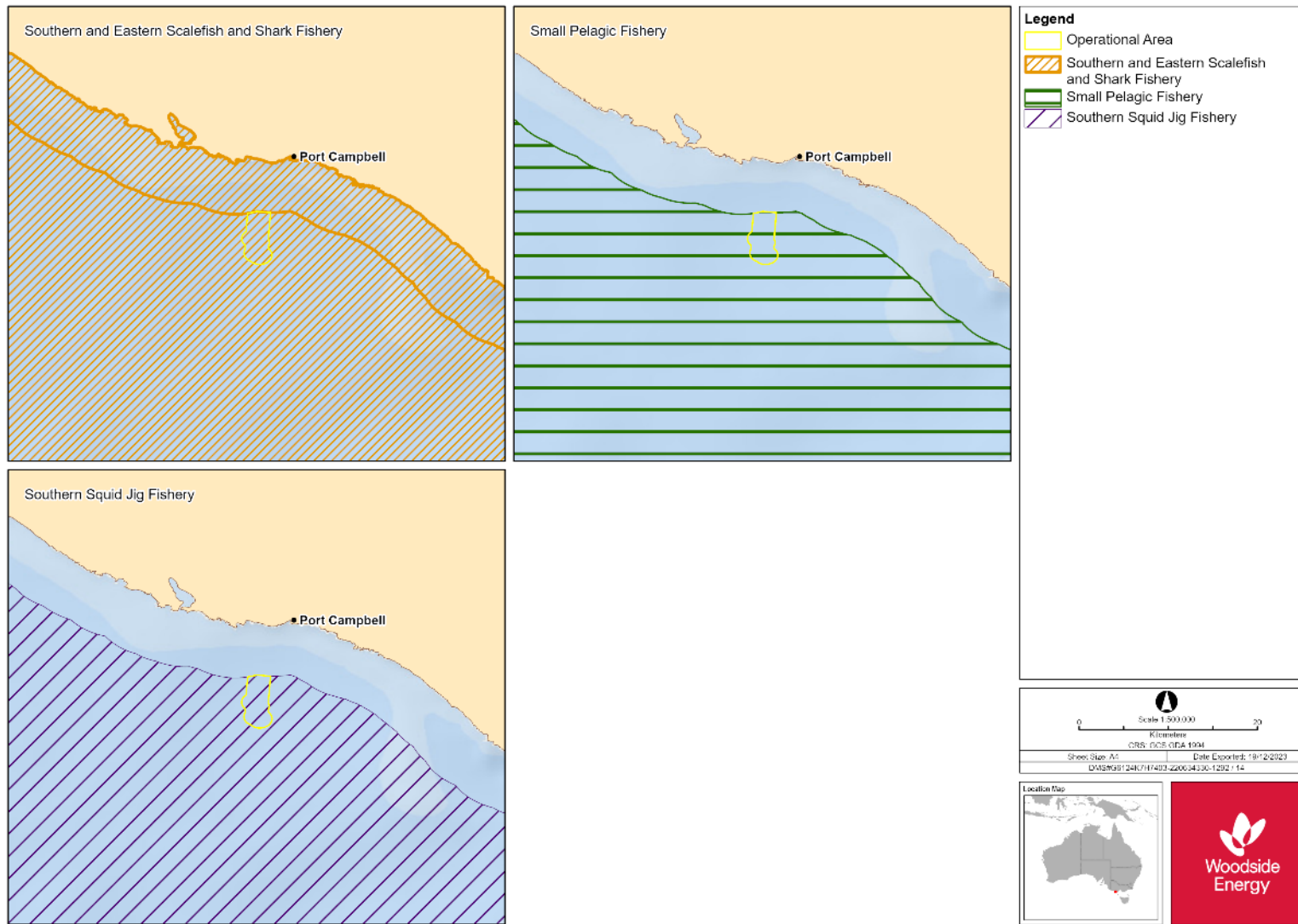


Figure 4-20: Commonwealth fisheries in relation to the operational area (Figure 2 of 2)

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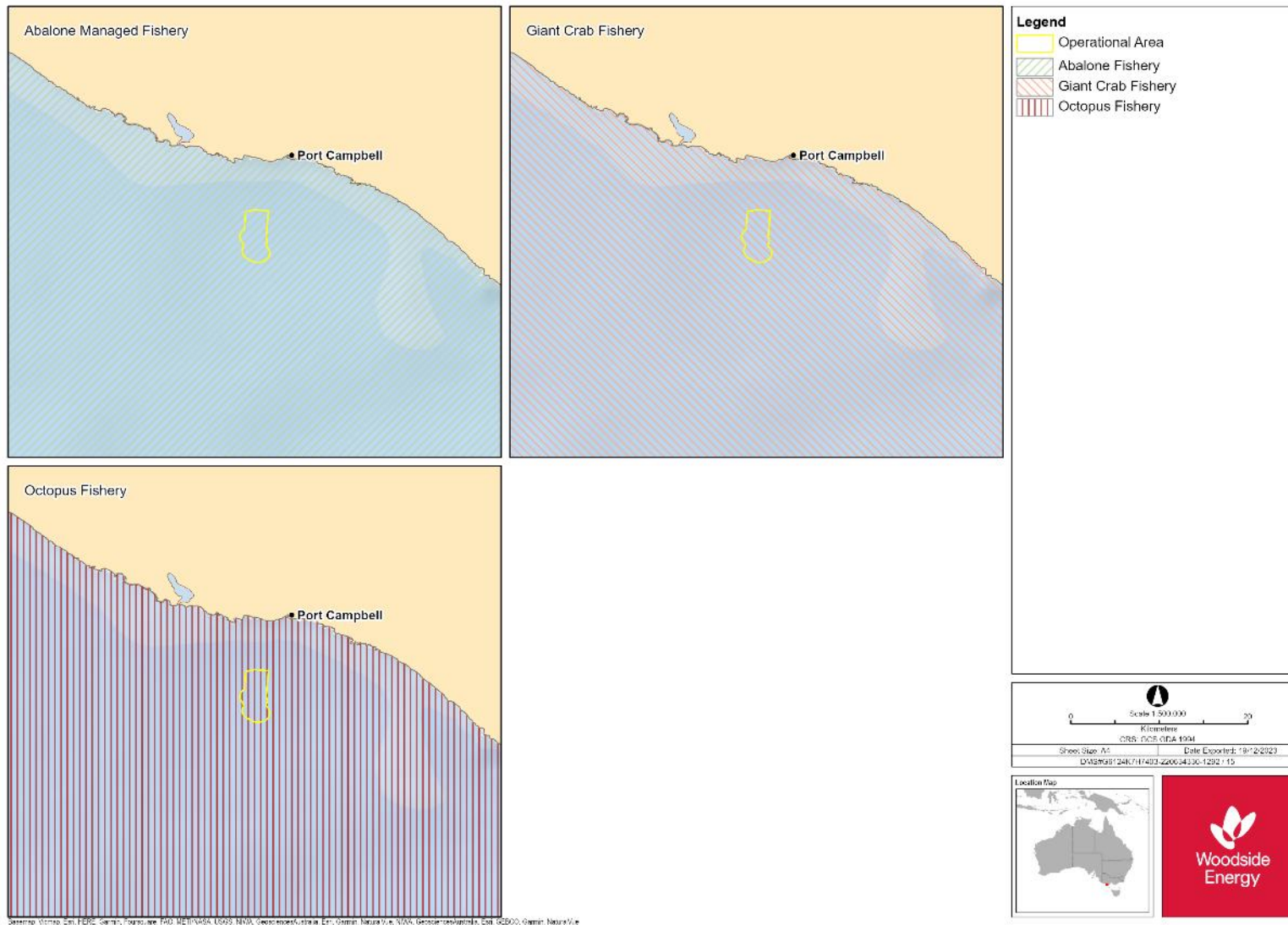


Figure 4-21: Victorian fisheries in relation to the operational area (Figure 1 of 2)

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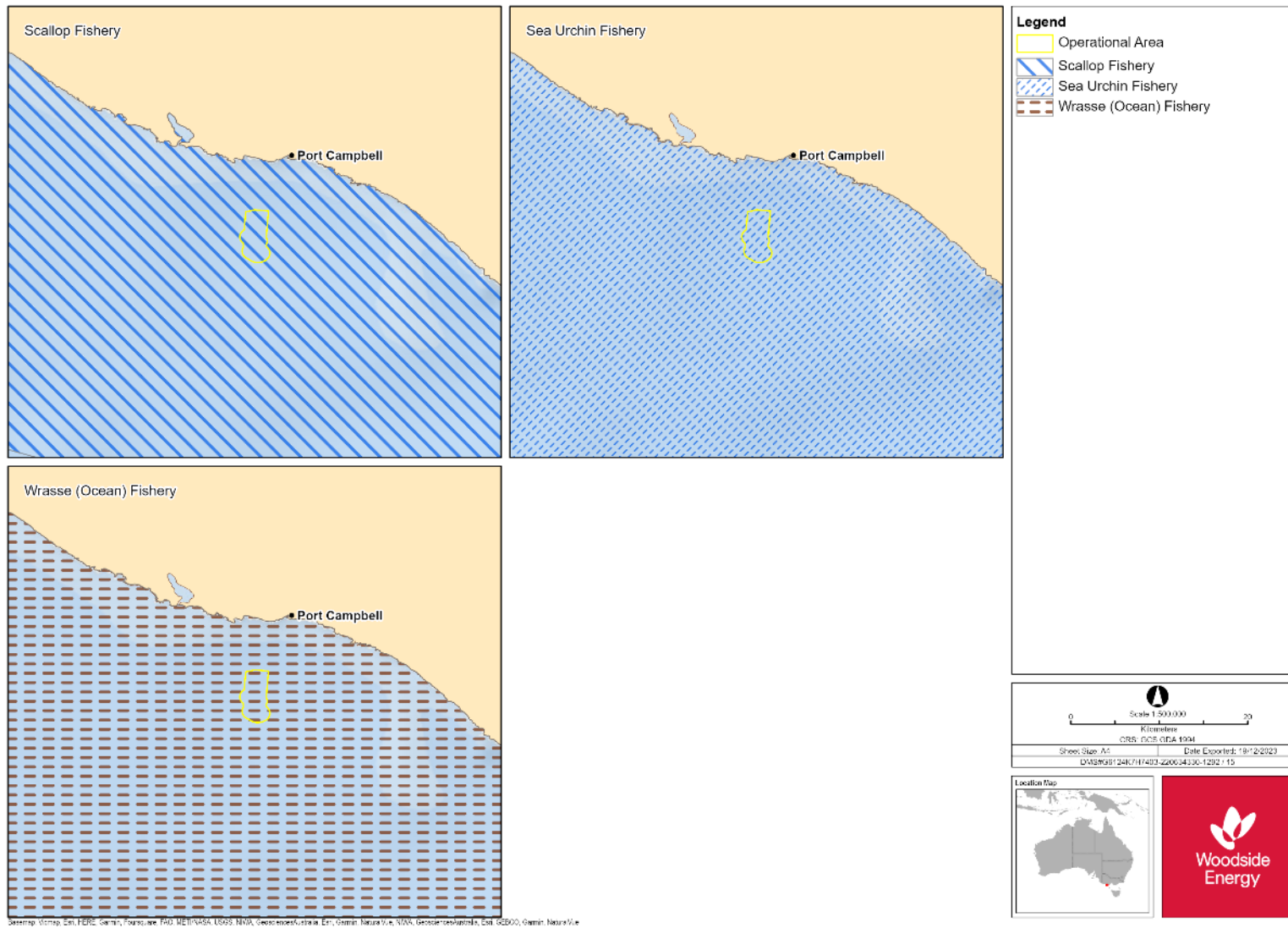


Figure 4-22: Victorian fisheries in relation to the operational area (Figure 2 of 2)

4.6.3. Tourism and Recreation

Recreational and tourism activities are extremely valuable foundations for the local and regional economy. Key activities include sight-seeing, surfing, and fishing. However, these are generally land-based or near-shore activities and given the operational area is located approximately 5.5 km from Port Campbell, Victoria, in approximate water depths of 55-60 m, these activities are not expected to overlap the operational area.

4.6.4. Commercial Shipping

The South-east Marine Region is one of the busiest shipping regions in Australia and Bass Strait is one of Australia's busiest shipping routes. The Australian Maritime Safety Authority (AMSA) indicates that there are no designated shipping lanes in the vicinity of the operational area, with the main shipping channel for vessels (e.g., cargo tankers) travelling between major Australian and foreign ports located south of the operational area, about 75 km (40 nm) south of Warrnambool.

Although a dedicated shipping lane is not present, commercial, and local vessels are frequently present in the area. Ship tracking data from AMSA provides details of the shipping traffic in the area and is described further in Appendix D.

4.6.5. Oil and Gas Activities

Nearby oil and gas production fields include the Otway Gas Field Development, operated by Beach Energy and the Casino, Henry, Netherby (CHN) gas field operated by Cooper Energy. Both operations are within the EMBA (Figure 4-23).

4.6.6. Defence Activities

The Department of Defence uses offshore areas for training operations including live firing, bombing practice from aircraft, air-to-air and air-to-sea or ground firing, anti-aircraft firing, firing from shore batteries or ships, remote controlled craft firing, and rocket and guided weapons firing.

The closest training and practice areas to the operational area are located to the east in and around Port Phillip Bay and Western Port Bay areas (Figure 4-24).

Mine fields were laid in Australian waters during World War II. Post-war minefields were swept to remove mines and to make marine waters safe for maritime activities however areas of unexploded ordnance (UXO) still exist. The closest areas to the operational area that have been identified as dangerous due to UXO, are located south and east of Wilson's Promontory (approximately 300 km east of the operational area).

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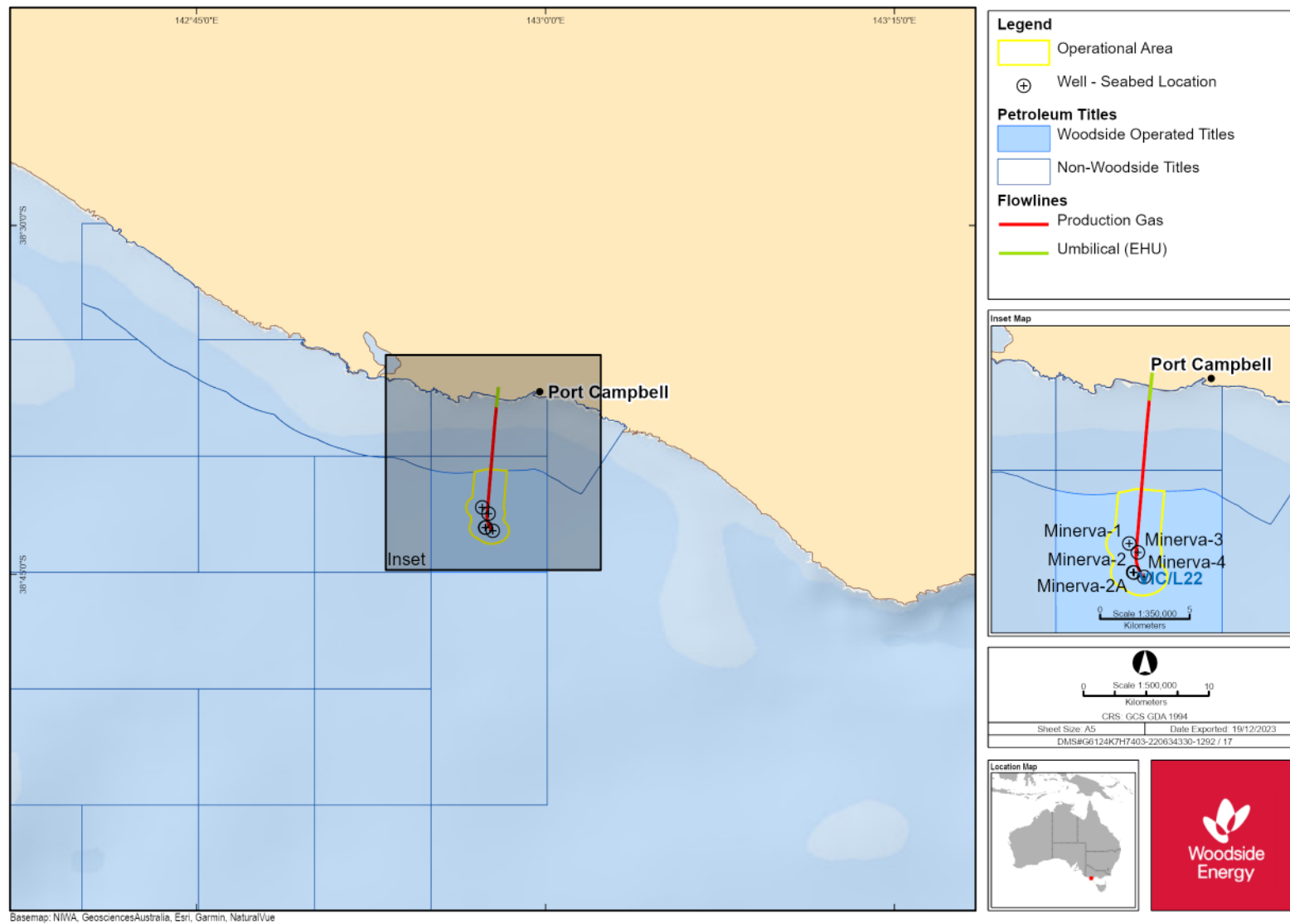


Figure 4-23: Oil and gas titles and activities in relation to the operational area and EMBA

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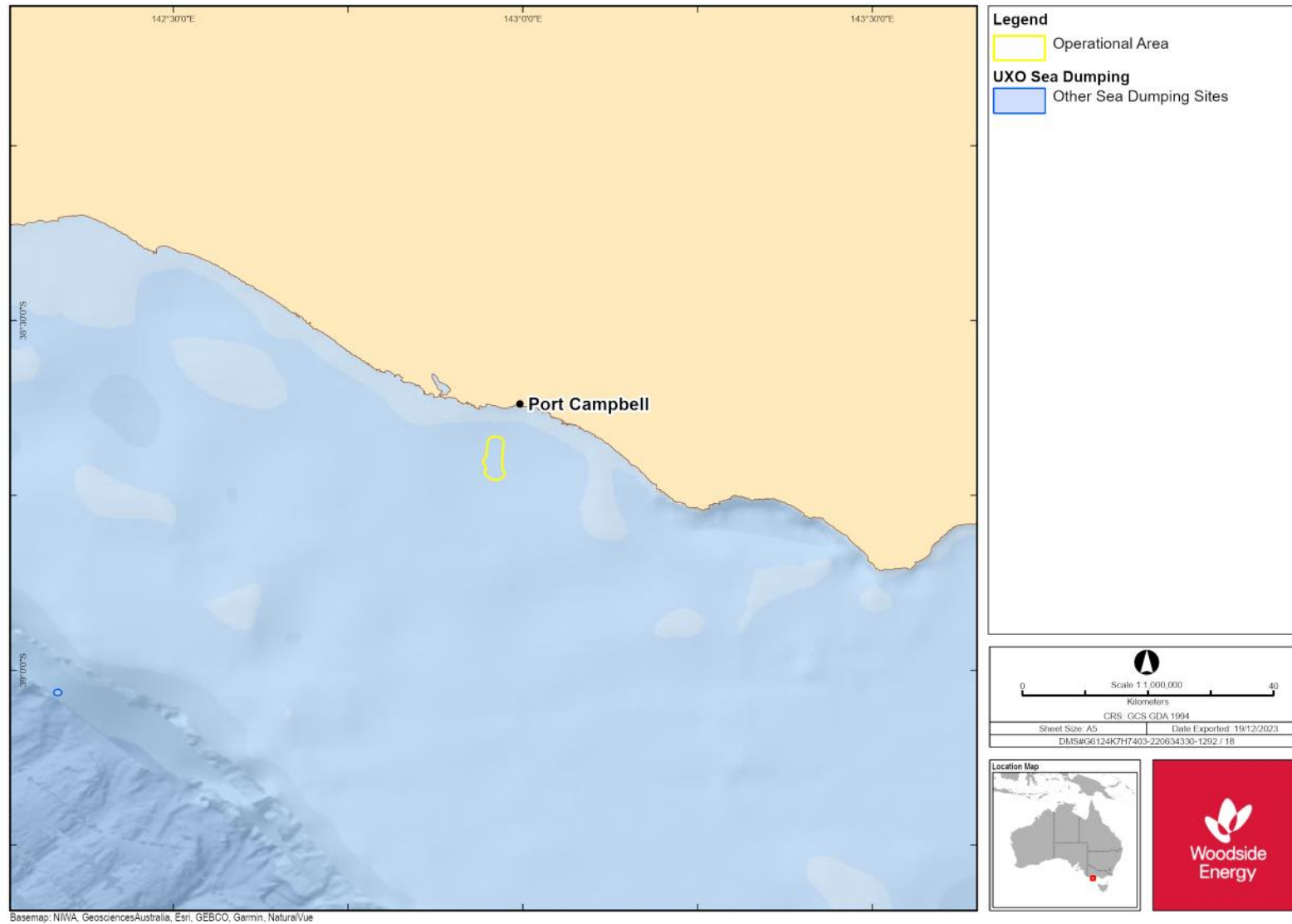


Figure 4-24: Offshore defence areas within the EMBA

5. Consultation

5.1. Summary

Woodside consults relevant persons in the course of preparing an EP in accordance with regulation 25 of the Environment Regulations. Consultation is designed to identify relevant persons and provide them with sufficient information and a reasonable period to allow them to make an informed assessment of the possible consequences of the proposed activity on their functions, interests or activities, to enable titleholders to consider and adopt appropriate measures in response to objections or claims received from relevant persons. Consistent with section 4 of the Environment Regulations, consultation also supports the objective to ensure that the activity is carried out in a manner by which the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable (ALARP) and will be of an acceptable level.

Woodside acknowledges that a titleholder's approach to consultation is to be informed by both the Environment Regulations and the findings of relevant Courts, including the Full Federal Court in the *Santos NA Barossa Pty Ltd v Tipakalippa* [2022] FCAFC 193 (Tipakalippa Appeal) (see Section 5.2 and 5.5.1) delivered on 2 December 2022; and *Munkara v Santos NA Barossa Pty Ltd (No 3)* [2024] FCA 9 (Munkara Case).

For this petroleum activity, Woodside has considered both the operational area and the broader EMBA in undertaking consultation (see further discussion in Section 5.2). The broadest extent of the EMBA has been determined by reference to the highly unlikely event of a hydrocarbon release resulting from the petroleum activity (see Section 4). Woodside's consultation methodology is divided into two parts:

- The first section (Section 5.2 to 5.5) provides an overview of Woodside's consultation methodology for its EPs, including how we apply regulation 25(1) of the Environment Regulations to identify relevant persons.
- The second section (Section 5.6 to 5.7) details Woodside's approach to accepting feedback and assessment of the merit of each objection or claim, and engaging in ongoing consultation for this EP.

Woodside's consultation record is at Appendix F and includes:

- Assessment and identification of relevant persons.
- Consultation information provided to relevant persons, feedback received and Woodside's assessment of the merits of objections or claims.
- Engagement with persons or organisations that Woodside chose to contact who are not relevant persons for the purposes of regulation 25(1) of the Environment Regulations (see Section 5.3.4).
- Opportunities provided to persons or organisations to be aware of Woodside's proposed EP and participate in consultation, including individual Traditional Custodians.

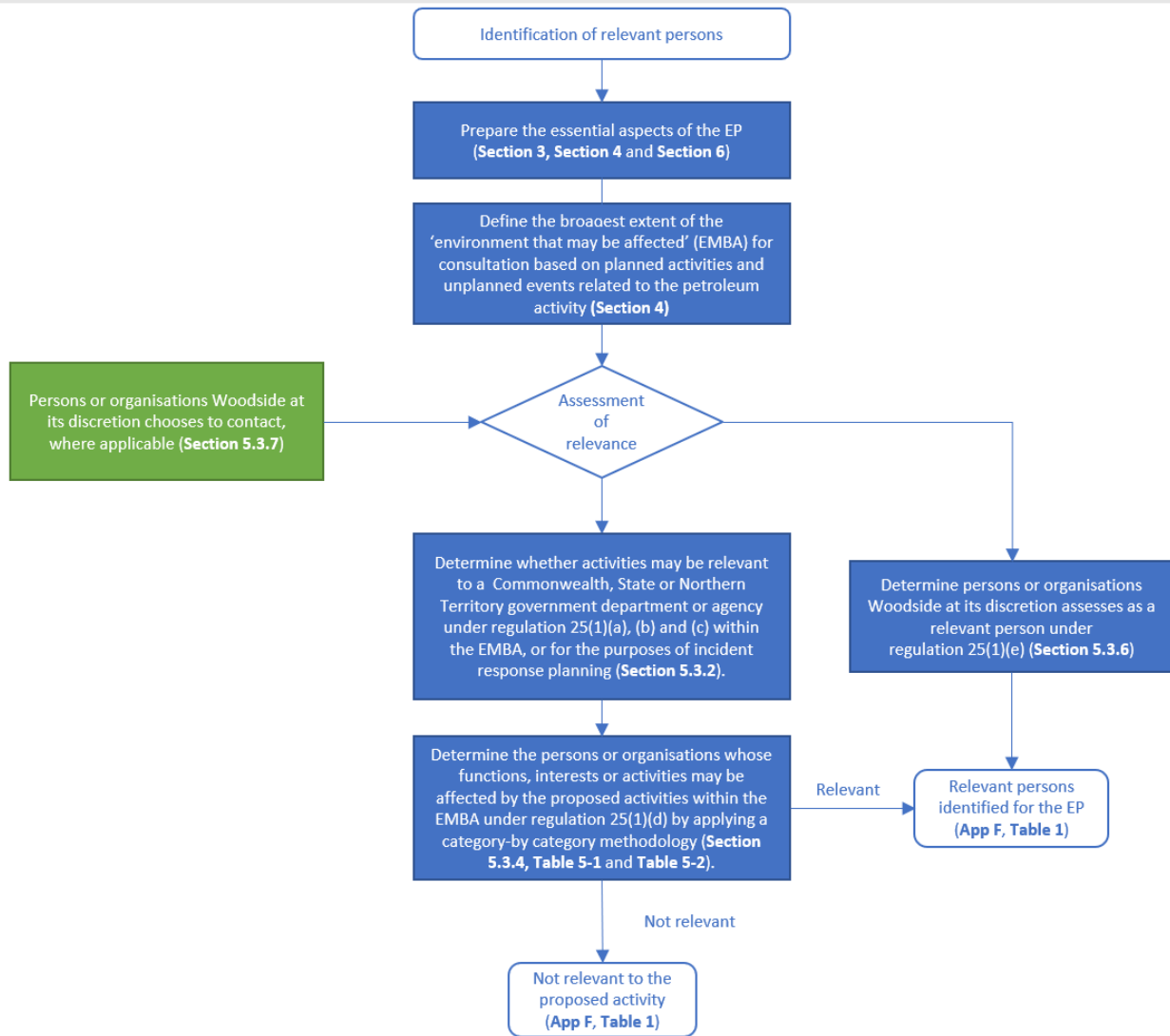


Figure 5-1: Overview of Woodside’s methodology to identify relevant persons

5.2. Consultation – General Context

Woodside has a portfolio of quality oil and gas assets and more than 30 years of operating experience. We have a strong history of working with local communities, the relevant regulators and a broad range of persons and organisations to understand the potential risks and impacts from our proposed activities and to develop appropriate measures to manage them.

The length of time that we have operated in Commonwealth and State waters, and the history of continued engagement with a wide range of persons and organisations, enables Woodside to develop an extensive consultation list to inform its consultation process. This consultation list is not used as a definitive list of persons to consult but, rather, assists Woodside as an input to its understanding of relevant persons with whom to consult on a proposed petroleum activity. The information in the consultation list has been captured from years of experience, it contains insights relating to the type of information particular persons or organisations want to receive during consultation, the appropriate method of consultation for relevant persons and includes appropriate contact details, which are reviewed and updated periodically.

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Woodside acknowledges NOPSEMA's Guideline on *Consultation in the course of preparing an environment plan* (12 May 2023) as well as judicial guidance in the Tipakalippa Appeal on the intent of consultation as follows:

- At paragraph 54 of the appeal decision: '...provide a basis for NOPSEMA's considerations of the measures, if any, that a titleholder proposes to take or has taken to lessen or avoid the deleterious effect of its proposed activity on the environment, as expansively defined.'
- At paragraph 89 of the appeal decision: '...its purpose is to ensure that the titleholder has ascertained, understood and addressed all the environmental impacts and risks that might arise from its proposed activity. Consultation facilitates this outcome because it gives the titleholder an opportunity to receive information that it might not otherwise have received from others affected by its proposed activity. Consultation enables the titleholder to better understand how others with an objective stake in the environment in which it proposes to pursue the activity perceive those environmental impacts and risks. As the Regulations expressly contemplate, it enables the titleholder to refine or change the measures it proposes to address those impacts and risks by taking into account the information acquired through the consultations. Objectively, the scheme intends that this is likely to improve the minimisation of environmental impacts and risks from the activity.'

The Tipakalippa Appeal and Munkara Case have also been further considered in the context of specific methods for consultation with First Nations relevant persons (Section 5.5.1).

In order to undertake consultation, Woodside has developed a methodology for identifying relevant persons, in accordance with Regulation 25(1) of the Environment Regulations (Section 5.3). This methodology is consistent with NOPSEMA's guideline and demonstrates that, in order to meet the requirements of Regulation 34 (criteria for EP acceptance) when preparing the EP, Woodside understands:

- our planned activities in the operational area, being the area in which our planned activities are proposed to occur (see Section 3.3.2)
- the geographical extent to which the environment may be affected (EMBA) by risks and impacts from our activities (unplanned) (identified in Section 4.1 and assessed in Section 8.2).

Woodside has undertaken consultation in the course of preparing this EP in compliance with regulation 25 of the Environment Regulations, which requires a titleholder to:

- consult with each of the following (a *relevant person*) in the course of preparing an environment plan:
 - each Commonwealth, State or Northern Territory agency or authority to which the activities to be carried out under the environment plan may be relevant
 - if the plan relates to activities in the offshore area of a State – the Department of the responsible State Minister
 - if the plan relates to activities in the Principal Northern Territory offshore area – the Department of the responsible Northern Territory Minister
 - a person or organisation whose functions, interests or activities may be affected by the activities to be carried out under the EP
 - any other person or organisation that the titleholder considers relevant (Regulation 25(1)).
- give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on their functions, interests or activities (Regulation 25(2) of the Environment Regulations)
- allow a relevant person a reasonable period for the consultation (Regulation 25(3) of the Environment Regulations)
- tell each relevant person who the titleholder consults with that the relevant person may request that particular information it provides in the consultation not be published and any information subject to such a request is not to be published (Regulation 25(4) of the Environment Regulations).

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Further, Woodside seeks to carry out consultation in a manner that:

- is consistent with the principles of ecologically sustainable development (ESD) set out in Section 3A of the EPBC Act
- is intended to reduce the environmental impacts and risks from the activity to ALARP (regulation 4 of the Environment Regulations)
- seeks to ensure that the environmental impacts and risks of the activity will be of an acceptable level (regulation 4 of the Environment Regulations)
- is intended to minimise harm to the relevant person and the environment from the proposed petroleum activities and to enable Woodside to consider measures that may be taken to mitigate the potential adverse environmental impacts from the petroleum activity.
- is collaborative - Woodside respects that, for a relevant person, consultation is voluntary. Where the relevant person seeks to engage, Woodside engages with the relevant person with the aim of seeking genuine and meaningful two-way dialogue
- provides opportunities for relevant persons to provide feedback throughout the life of the EP through its ongoing consultation process (refer to Sections 5.7 and 9.9).

An overview of Woodside's consultation approach is outlined at Figure 5-2.

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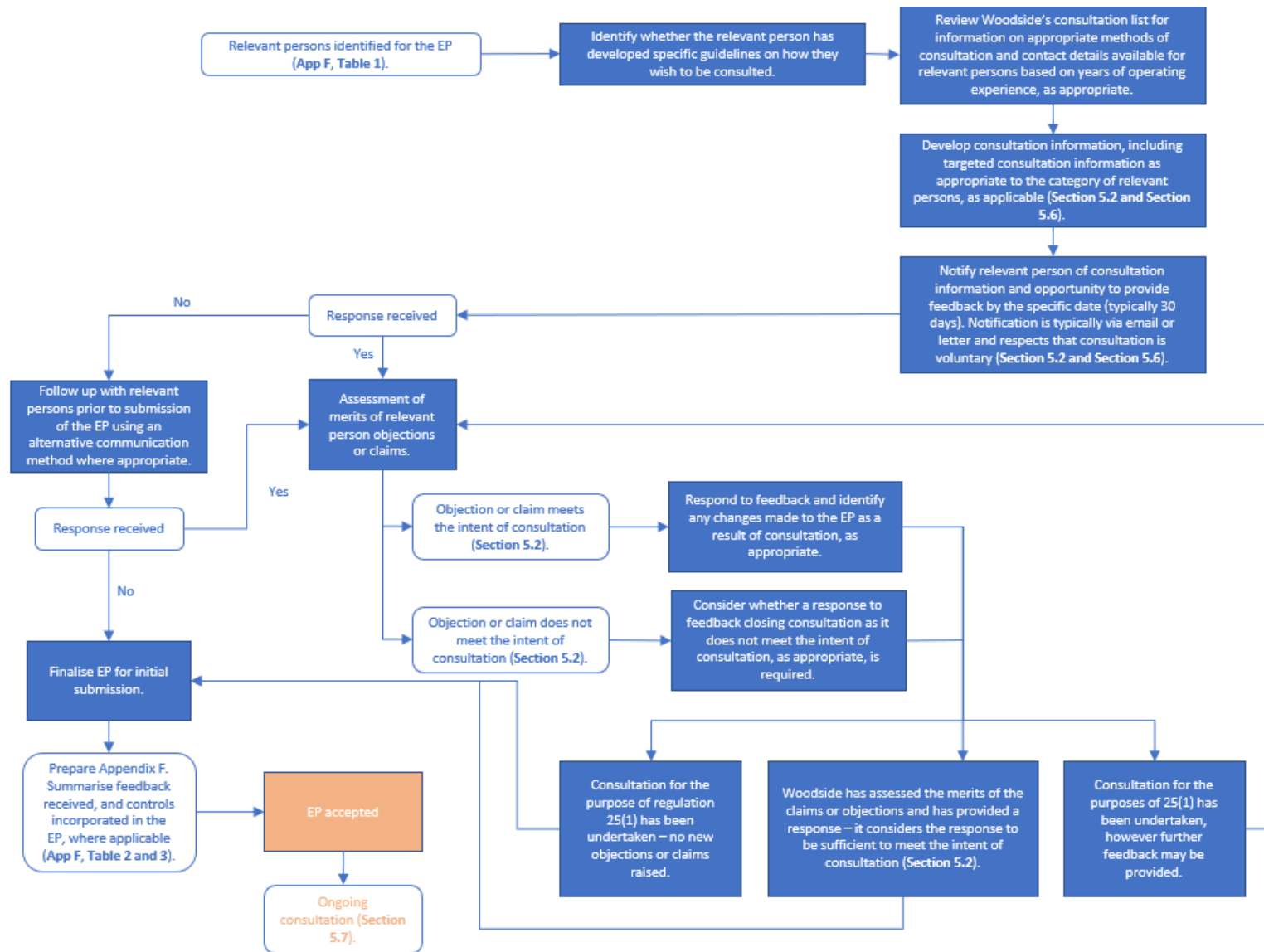


Figure 5-2: Overview of Woodside's consultation approach

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The methodology for consultation for this activity has been informed by various guidelines and relevant information for consultation on planned activities, including:

- Federal Court:
 - [Santos NA Barossa Pty Ltd v Tipakalippa \[2022\] FCAFC 193](#)
 - [Munkara v Santos NA Barossa Pty Ltd \(No 3\) \[2024\] FCA 9](#)
- NOPSEMA:
 - [GL2086 – Consultation in the course of preparing an environment plan – May 2023](#)
 - [GN1847 – Responding to public comment on environment plans – January 2024](#)
 - [GN1344 - Environment plan content requirements - September 2020](#)
 - [GL1721 – Environment Plan decision making – January 2024](#)
 - [GN1488 - Oil pollution risk management - July 2021](#)
 - [GN1785 – Petroleum activities and Australian Marine Parks – January 2024](#)
 - [GL 1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2024](#)
 - [PL9028 Managing gender-restricted information – December 2023](#)
 - [Consultation on offshore petroleum environment plans – Information for the community](#)
- Department of Climate Change, Energy, the Environment and Water:
 - [Sea Countries of the North-West: Literature review on Indigenous connection to and uses of the North West Marine Region](#)
- Australian Fisheries Management Authority:
 - [Petroleum industry consultation with the commercial fishing industry](#)
- Commonwealth Department of Agriculture and Water Resources:
 - [Fisheries and the Environment – Offshore Petroleum and Greenhouse Gas Act 2006](#)
 - [Offshore Installations Biosecurity Guide](#)
- Good practice consultation:
 - [IAP2 Public Participation Spectrum](#)
 - [Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Act 1999](#)

5.3. Identification of Relevant Persons for Consultation

5.3.1. Regulations 25(1)(a), (b) and (c)

The relevant inquiry for determining relevant persons within the description of regulations 25(1)(a) and (b) is whether the activities to be carried out under the EP may be relevant to one of the government departments or agencies in those regulations. The government departments and agencies relevant to the EP are listed in Appendix F, Table 1. In accordance with regulation 25(1)(b), Woodside consults with the Department of the relevant State Minister.

5.3.2. Identification of Relevant Persons under Regulations 25(1)(a), (b) and (c)

Woodside's methodology for identifying relevant persons under regulations 25(1)(a), (b) and (c) is as follows:

- Woodside considers the defined responsibilities of each of the departments and agencies to which the activities in the EMBA to be carried out under the EP may be relevant. This list of relevant department and agencies is formulated by reference to the responsibilities of the government departments as set out on their websites, in NOPSEMA's *GL 1887 – Consultation with Commonwealth Agencies with Responsibilities in the Marine Area Guideline* (2023), which describes where the Department is a relevant agency under

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the Environment Regulations, as well as experience and knowledge that Woodside has gained from years of operating in relation to the departments and agencies which Woodside has historically consulted over the years. This list is revised from time to time, for example, for the purposes of accommodating government restructures, renaming of departments, shifting portfolios and/or to account for new agencies that might arise.

Woodside has categorised government department or agency groups as follows:

Government departments / agencies – marine	Agencies with legislated responsibilities for use of the marine environment.
Government departments / agencies – environment	Agencies with legislated responsibilities for the protection of the marine environment.
Government departments / agencies – industry	The legislated Department of the responsible Commonwealth, State or Northern Territory Minister for Industry.

- Woodside considers each of the responsibilities of the departments and agencies and determines whether those responsibilities overlap with potential risks and impacts specific to the proposed petroleum activity in the EMBA. The assessment is both activity and location based.
- Woodside acknowledges the roles and responsibilities of government departments and agencies acting on behalf of various industry participants. For example, AMSA – Marine Safety is responsible for the safety of vessels and the seafarers who are operating in the domestic commercial shipping industry and AHO is responsible for maritime safety and Notices to Mariners. To undertake the petroleum activity in a manner that prevents a substantially adverse effect on the potential displacement of marine users, Woodside therefore consults AMSA – Marine Safety and AHO on its proposed activities. Woodside considers each of the responsibilities of the departments and agencies and determines those that would either be involved in the incident response itself or in relation to the regulatory or decision-making capacity with respect to planning for the unlikely event of a worst-case hydrocarbon release incident response specific to the petroleum activity. Feedback received, if any, is assessed in accordance with the intended outcome of consultation.
- The list of those government departments and agencies assessed as relevant is set out in Appendix F, Table 1.
- Feedback received, if any, is assessed in accordance with the intended outcome of consultation and summarised at Appendix F, Table 2 and Table 3 as appropriate to the relevance assessment.

Woodside does not consult with departments or agencies with interests that do not overlap with risks and impacts specific to the proposed petroleum activity in the EMBA or would not be involved in incident response planning.

5.3.3. Regulation 25(1)(d)

In order to identify a relevant person for the purposes of regulation 25(1)(d), the meaning of “functions, interests or activities” needs to be understood. In regulation 25(1)(d), the phrase “functions, interests or activities” should be construed broadly and consistently with the objects of the Environment Regulations (regulation 4) and the objects of the EPBC Act (section 3A).

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In developing its methodology for consultation, Woodside acknowledges that the guidance on the definition of functions, interests and activities is as follows in accordance with NOPSEMA's *GL2086 – Consultation in the Course of Preparing an Environment Plan (2023)* guideline:

Functions	Refers to a power or duty to do something.
Interests	Conforms to the accepted concept of 'interest' in other areas of public administrative law and includes any interest possessed by an individual whether or not the interest amounts to a legal right or is a proprietary or financial interest or relates to reputation.
Activities	Broader than the definition of 'activity' in regulation 5 of the Environment Regulations and is likely be directed to what the relevant person is already doing.

Woodside's methodology for determining 'relevant persons' for the purpose of regulation 25(1)(d) of the Environment Regulations includes consideration of:

- whether a person or organisation has functions interests or activities that overlap with the operational area and EMBA; and
- whether a person or organisation's functions, interests or activities may be affected by Woodside's proposed planned or unplanned activities.

5.3.4. Identification of Relevant Persons under Regulation 25(1)(d)

Relevant persons under regulation 25(1)(d) are defined as persons or organisations whose functions, interests or activities may be affected by the activities to be carried out under the EP. In identifying relevant persons, Woodside considers:

- the planned activities to be carried out under this EP (described in Section 3); and
- the EMBA by unplanned activities (identified in Section 4 and assessed in Section 8.2).

To identify relevant persons who fall within regulation 25(1)(d), Woodside adopts the following methodology, and then undertakes consultation with relevant persons.

- As a general proposition, Woodside assesses whether a person or organisation is a relevant person having regard to:
 - whether a person or organisation has functions interests or activities that overlap with the operational area and EMBA; and
 - whether a person or organisation's functions, interests or activities may be affected by Woodside's proposed planned or unplanned activities to be carried out under the EP.
- This assessment will include applying judgement, knowledge and current literature.
- Further, to assist in identifying the full range of relevant persons, Woodside considers the impacts and risks associated with its proposed activities and considers the broad categories of relevant persons who may be affected by the activities proposed to be carried out under the EP. The broad categories are identified in Table 5-1 below and identification methodology applied as set out in Table 5-2.
- The list of those persons or organisations assessed as relevant and persons or organisations Woodside separately chose to contact is set out in Appendix F, Table 1.
- Feedback received, if any, is assessed in accordance with the intended outcome of consultation and applying the categories of relevant persons methodology outlined in Table 5-2, as appropriate.
- Feedback from relevant persons is summarised at Appendix F, Table 2. Feedback from persons assessed as "not relevant" but whom Woodside chose to contact or self-identified and Woodside assessed as "not relevant" are summarised at Appendix F, Table 3.

Table 5-1: Categories of relevant persons

Category	Explanation
Commercial fisheries (Commonwealth and State) and peak representative bodies	<p>Commonwealth or State Commercial Fishery with a fishery management plan recognised under the <i>Commonwealth Fisheries Management Act 1991</i> (Cth) and <i>Fisheries Act 1995</i> (Vic), which may be amended from time to time.</p> <p>Commonwealth peak fishery representative bodies are identified by AFMA. Seafood Industry Victoria is the peak representative body for state fishers in Victoria, excluding abalone fishers who are represented by Abalone Council Victoria (ACV).</p>
Recreational marine users and peak representative bodies	<p>Charter boat, tourism and dive operators specific to the location of the proposed activity.</p> <p>Representative bodies are the recognised peak organisation(s) for recreational marine users. There is no peak representative body for recreational marine users in Victoria.</p>
Titleholders and Operators	Registered holder of an offshore petroleum title or GHG title governed by the OPGGS Act and associated regulations.
Peak industry representative bodies	Recognised peak organisation(s) for the oil and gas sector.
Traditional Custodians (individuals and/or groups/entity)	<p>Traditional Custodians are First Nations Australians who hold cultural rights and interests or have cultural functions or perform cultural activities over particular lands and waters.</p> <p>Where a First Nations person, group or entity self-identifies and/or asserts cultural rights, functions, interests or activities they will be included in the definition of Traditional Custodian for the purpose of this EP.</p>
Nominated Representative Corporations	<p>Nominated representative corporations are Traditional Custodians' nominated representative institutions, which include, in the Victorian context:</p> <ul style="list-style-type: none"> ▪ Prescribed Body Corporates (PBC) established under the <i>Native Title Act 1993</i> by Traditional Custodians to represent their entire Traditional Custodian group (defined broadly by reference to descents from an ancestor set who were known to be the Traditional Custodians at the time of European colonisation) and their interests including, among other things, management and protection of cultural values; ▪ Traditional Owner Corporations (TOC) established under the <i>Traditional Owner Settlement Act 2010</i> (Vic) by Traditional Custodians to represent their entire Traditional Custodian group (defined broadly by reference to descents from an ancestor set who were known to be the Traditional Custodians at the time of European colonisation) and their interests including, among other things, management and protection of cultural values. The <i>Traditional Owner Settlement Act 2010</i> (Vic) provides an alternative form of recognition to native title; and ▪ Registered Aboriginal Parties (RAP) established under the <i>Aboriginal Heritage Act 2006</i> (Vic). A PBC or TOC will automatically be appointed a RAP under the Act.
Native Title Representative Bodies	A Representative Aboriginal/Torres Strait Islander Bodies (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993</i> (NTA) with prescribed functions, set out in Part 11 of the <i>Native Title Act 1993</i> , which relate to: facilitation and assistance; certification; dispute resolution; notifications; agreement making. They are also known, and referred to here, as Native Title Representative Bodies.
Historical heritage groups or organisations	Legislated or government enlisted groups or organisations responsible for the management of marine heritage.

Category	Explanation
Local government and recognised local community reference/liaison groups or organisations	Local government governed by the <i>Local Government Act 2020</i> (VIC) which is responsible for representing the local community. Recognised local community reference/liaison group or organisation in relation to oil and gas matters.
Other non-government groups or organisations	Non-government organisation with public website material targeting the proposed activity.
Research institutes and local conservation groups or organisations	Research institutes are government or private institutions that conduct marine or terrestrial research. Local conservation groups are local non-government organisation that regularly conduct conservation activities focused on the local environment or wildlife.

Table 5-2: Methodology for identifying relevant persons within the EMBA undertaken under subcategory 25(1)(d) – by category

Category	Relevant person identification methodology
Commercial fisheries (Commonwealth and State) and peak representative bodies	<p>Woodside assesses relevance for commercial fisheries (Commonwealth and State) and their representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ Defining the parameters having regard to timing, location and duration of the proposed petroleum activity. ▪ Confirming whether the EMBA overlaps with the fisheries management area (i.e., the spatial area the fishery is legally permitted to fish in) (see Section 4.6.2). ▪ In this context, there does not appear to be any specific Victorian consultation guidance. Accordingly, Woodside has considered and followed consultation guidance from other jurisdictions, for example, Western Australian Fishing Industry Council’s (WAFIC) consultation guidance⁵ (accessed on 2 February 2023), which provides that titleholders should develop separate consultation strategies for significant unplanned events (for example oil spill) where titleholders can demonstrate the likelihood of such events occurring is extremely low. WAFIC’s guidance is that consultation on unplanned events resulting in an emergency scenario should only be undertaken if an incident occurs (see Appendix E). ▪ For Commonwealth and State commercial fisheries, Woodside assesses the potential spatial and temporal extent for interaction with the fishery by reviewing AFMA and Victorian Fisheries Authority fishery catch data within the operational area and EMBA (see Section 4.6.2). <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ State commercial fisheries that have been assessed as having a potential for interaction within the operational area or EMBA (see Section 4.6.2) are assessed as relevant to the proposed activity. ▪ Woodside acknowledges consultation advice from Victorian Fisheries Authority (VFA) to consult via the relevant fishery representative bodies for relevant fishery licence holders. Woodside applies this by: <ul style="list-style-type: none"> – consulting fishery licence holders that are assessed as having a potential for interaction in the operational area via relevant fishery representative bodies; and – consulting fisheries that are assessed as having a potential for interaction in the EMBA via relevant fishery representative bodies

⁵ [Consultation Approach for Unplanned Events - WAFIC](#)

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Category	Relevant person identification methodology
	<ul style="list-style-type: none"> ▪ Commonwealth commercial fisheries that have been assessed as having a potential for interaction within the operational area or EMBA (see Section 4.6.2) are assessed as relevant to the proposed activity. ▪ If Woodside has identified that a Commonwealth or State fishery is a relevant person, then Woodside also consults the fisheries relevant representative body. As mentioned above, Woodside acknowledges consultation advice from Victorian Fisheries Authority (VFA) to consult via the relevant fishery representative bodies for relevant fishery licence holders. Though Seafood Industry Victoria (SIV) has advised Woodside that it does not take responsibility for speaking on behalf of all members, SIV seeks to further the interests of fisheries in Victoria. Seafood Industry Victoria, Abalone Council Victoria and Victorian Scallop Fisherman’s Association are the recognised state fishery peak bodies. Recognised Commonwealth fishery representative bodies are identified by AFMA via its website.
Recreational marine users and peak representative bodies	<p>Woodside assesses relevance for recreational marine users and peak representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ From Woodside knowledge and operating experience, knowledge of recreational marine users in the area. This assessment is both activity and location based. ▪ Defining the parameters having regard to timing, location, and duration of the proposed petroleum activity. ▪ Assessing the potential spatial and temporal extent for interaction with recreational marine users to assess whether there has been activity within the EMBA in the past 5 years. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ Recreational marine users that have been active in the past 5 years within the EMBA are assessed as relevant to the proposed activity. Woodside obtains the contact details of charter, boat tourism and dive operators specific to the region of the EMBA via website search, to consult with the relevant persons. ▪ If Woodside has identified recreational marine users as relevant persons, then Woodside also consults identified peak recreational marine user representative bodies. For example, Victorian Recreational Fishers Association (VR Fish) represents the interests of recreational fishers. These representative bodies are identified via website search and Woodside’s existing consultation list, which is updated as appropriate via advice from known groups and groups and Government authorities.
Titleholders and operators	<p>Woodside assesses relevance for other titleholders and operators using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ Using Woodside Titles database to determine overlap with other petroleum titles within the EMBA ▪ From Woodside knowledge and operating experience, knowledge of other operators in the area ▪ Woodside produces a map showing the outcome of this assessment. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ Titleholders and Operators whose permit areas are identified as having an overlap within the EMBA are assessed as relevant.
Peak industry representative bodies	<p>Woodside assesses relevance for peak industry representative bodies using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ Review of peak industry representative bodies responsibilities that Woodside actively participates in, with consideration of overlap between industry focus area and Woodside’s proposed activities within the EMBA. ▪ Review of Woodside’s existing consultation list.

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Category	Relevant person identification methodology
	<ul style="list-style-type: none"> ▪ Website search to identify whether any additional peak industry representative bodies have been created whose responsibilities may overlap with Woodside's proposed activities within the EMBA. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ Peak industry representative bodies whose responsibilities are identified as having an overlap with Woodside's proposed activities within the EMBA are assessed as relevant.
<p>Traditional Custodians (individuals and/or groups/entity) and Nominated Representative Corporations</p>	<p>Consistent with its understanding of the matters discussed in Section 5.5, to identify Traditional Custodian groups or individuals, Woodside:</p> <ul style="list-style-type: none"> ▪ Uses existing systems of recognition to identify First Nations groups who overlap or are coastally adjacent to the EMBA (for example, recognition provided under native title or cultural heritage legislation, or marine park management plans, or identification by other First Nations groups or entities) ▪ Notifies and invites consultation with First Nations people through their nominated representative corporation (for example PBCs or Registered Aboriginal Parties); or, in the case of native title and where appropriate, the Native Title Representative Body ▪ Requests the nominated representative body to forward the notifications and invitations to consult to their members (members are individual communal rights holders) ▪ Requests advice as to other First Nations groups or individuals that should be consulted ▪ Advertises widely so as to invite self-identification and consultation by First Nations groups and/or individuals. <p>Further detail to Woodsides methodology is as follows.</p> <p>Woodside uses the databases of the National Native Title Tribunal:</p> <ul style="list-style-type: none"> ▪ to understand whether there are any Native Title Claims (historical or current) or determinations overlapping or coastally adjacent to the EMBA; ▪ to understand whether there are any relevant Indigenous Land Use Agreements (ILUA), registered with the National Native Title Tribunal that overlap or are adjacent to the EMBA that may identify Traditional Custodians or representative bodies to contact regarding potential cultural values. <p>Where there is a positive determination of native title, contacting the PBC or, where their representative is a Native Title Representative Body contacting the Native Title Representative Body.</p> <p>Where appropriate, contacting the relevant Native Title Representative Body to request a list of any First Nations groups asserting Traditional Custodianship over an area of coastline adjacent to the EMBA.</p> <p>Review of Commonwealth and State Marine Park Management Plans that overlap the EMBA which may identify Traditional Custodians or representative bodies to contact regarding potential cultural values.</p> <p>First Nations groups or individuals identified by a Traditional Custodian, nominated representative corporation, Native Title Representative Body.</p> <p>Request to the PBC to distribute Woodside consultation materials through its membership. Woodside is unable to contact this membership through any other means.</p> <p>Woodside has a number of public notification and information sharing processes by which individual Traditional Custodians can become aware of the proposed activity, its risks and impacts and self identify.</p> <p>Individuals that consider their functions, interests or activities may be affected by a proposed activity are provided an opportunity to self-identify for each EP. Woodside does not presume that self-identification for an activity, covered by another EP, automatically means that an individual/s functions, interest and activities may be</p>

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Category	Relevant person identification methodology
	<p>affected by other activities where EMBA's overlap. This decision is for the individual to make. The public notification, information sharing, and consultation processes Woodside puts in place enables Traditional Custodians to become aware of proposed activities, assess any risks and impacts to their values, and enable individuals to self-identify.</p> <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ Traditional Custodian groups, entities or individuals and Nominated Representative Corporations who are identified through the above methodology and overlap or are coastally adjacent to the EMBA are assessed as relevant.
Native Title Representative Bodies	<p>Woodside assesses relevance for Native Title Representative Bodies using the following steps in its methodology:</p> <ul style="list-style-type: none"> ▪ A Representative Aboriginal/Torres Strait Islander Bodies (RATSIB) is a regional organisation appointed under the <i>Native Title Act 1993</i> (NTA) with prescribed functions set out in Part 11 of the <i>Native Title Act 1993</i>, which relate to: facilitation and assistance; certification; dispute resolution; notifications; agreement making. They are also known, and referred to here, as Native Title Representative Bodies. ▪ Review of National Native Title Tribunal RATSIB areas that overlap or are coastally adjacent to the EMBA. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ Where the area for which a Native Title Representative Body is recognised under the <i>Native Title Act 1993</i>, overlaps with the EMBA or is coastally adjacent to the EMBA, Woodside will assess the Native Title Representative Body as relevant.
Historical heritage groups or organisations	<p>Woodside assesses relevance for groups or organisations whose responsibilities are focused on historical heritage using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ Using the Australasian Underwater Cultural Heritage Database to assess any known records Maritime Cultural Heritage sites (shipwrecks, aircraft, and relics) within the EMBA (see Section 4.6.1). <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ Where there is a known underwater heritage site (shipwrecks, aircraft and relics) within the EMBA, the relevant group or organisation that manages the site will be assessed as relevant.
Local government and recognised local community reference/liaison groups or organisations	<p>Woodside assesses relevance for local government and recognised local community reference/liaison groups or organisations using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ Review of Woodside maps (developed from data from Local Government Victoria database and Victoria Government Local Government maps) to assess any overlap between the local government's defined area of responsibility and the EMBA. ▪ Woodside reviews the community reference/liaison group's terms of reference to determine its area of responsibility and any overlap with the EMBA. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ The local government whose defined area of responsibility overlaps the EMBA is assessed as relevant. ▪ The community reference/liaison group whose defined area of responsibility overlaps the EMBA is assessed as relevant and consulted collectively via the relevant reference/liaison group.
Other non-government groups or organisations	<p>Woodside assesses relevance for other non-government groups or organisations using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ Review of Woodside's existing consultation list. ▪ Website search of registered non-government groups or organisations (i.e., registered with an Australian Business Number (ABN) and publicly available contact

Category	Relevant person identification methodology
	<p>information) that may have public website material specific to the proposed activity at the time of development of the EP.</p> <ul style="list-style-type: none"> ▪ Organisation has a publicly available mission statement (or purpose) that clearly describes their collective functions, interests or activities. ▪ Review of current website material to identify targeted information which demonstrates functions, interests or activities relevant to the potential risks and impacts associated with planned activities. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ Registered non-government groups or organisations with current targeted public website material specific to the proposed activity at the time of developing the EP and who have demonstrated functions, interests or activities relevant to the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation will be assessed as relevant.
<p>Research institutes and local conservation groups or organisations</p>	<p>Woodside assesses relevance for research institutes and local conservation groups or organisations using the following next steps in its methodology:</p> <ul style="list-style-type: none"> ▪ Review of Woodside’s existing consultation list. ▪ Website search for research institutes that may operate within the EMBA. This assessment is both activity and location based. ▪ Website search for local conservation groups or organisations that regularly conduct conservation activities within the EMBA. <p>Assessment of relevance:</p> <ul style="list-style-type: none"> ▪ Where there is known research being undertaken by a research institute within the EMBA, the research institute that is conducting the research will be assessed as relevant. ▪ Local environmental conservation groups who regularly conduct conservation activities or have demonstrated conservation functions, interests or activities within the EMBA are assessed as relevant. This assessment is both activity and location based.

5.3.5. Regulation 25(1)(e)

In addition to assessing relevance under regulation 25(1)(d), Woodside has discretion to categorise any other person or organisation as a relevant person under regulation 25(1)(e).

5.3.6. Identification of Relevant Persons under Regulation 25(1)(e)

Woodside adopts a case-by-case approach for each EP to assess relevance under regulation 25(1)(e).

5.3.7. Persons or Organisations Woodside Chooses to Contact

In addition to undertaking consultation with relevant persons under regulation 25(1) there are persons or organisations that Woodside chooses to contact, from time to time, in relation to a proposed activity. For example, these are persons or organisations:

- that are ‘not relevant’ pursuant to regulation 25(1) but that Woodside has chosen to seek additional guidance from, for example, to inform the correct contact person that Woodside should consult, or engage with
- that are ‘not relevant’ pursuant to regulation 25(1) but have been contacted as a result of consultation requirements changing or updated guidance from the Regulator
- where it is unclear what their functions, interests or activities are, or whether their functions, interests or activities may be affected. In this circumstance, engagement is required to inform relevance under Woodside’s methodology. Woodside follows the same methodology for assessing a person or

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organisations relevance as it does during its initial assessment (as described in Figure 5-1 and Section 5.3). The result of Woodside's assessment of relevance during the development of the EP is outlined at Appendix F, Table 1.

5.3.8. Assessment of Relevant Persons for the Proposed Activity

The result of Woodside's assessment of relevant persons in accordance with regulation 25(1) is outlined at Appendix F, Table 1 and Table 2.

Persons or organisations that Woodside assessed as not relevant but chose to contact at its discretion in accordance with Section 5.3.4 or self-identified and Woodside assessed as not relevant are summarised at Appendix F, Table 1 and Table 3.

5.4. Consultation Material and Timing

Regulation 25(2) of the Environment Regulations provides that a titleholder must give each relevant person sufficient information to allow the relevant person to make an informed assessment of the possible consequences of the activity on the functions, interests or activities of the relevant person. Regulation 25(3) provides that the titleholder must allow a relevant person a reasonable period for the consultation.

As set out in Section 5.2, Woodside notifies relevant persons, of the proposed activities, respecting that consultation is voluntary (for the relevant person) and collaborates on a consultation approach where further engagement is sought by the relevant person. Woodside understands that the consultation process should be appropriate for the category of relevant persons and that not all persons or organisations will require the same level of engagement. Woodside recognises that the level of engagement is dependent on the nature and scale of the petroleum activity. Woodside recognises published guidance for good practice consultation relevant to different sectors and disciplines. Woodside's methodology for providing relevant persons with sufficient information as well as a reasonable period of time to provide feedback is set out in this section.

5.4.1. Sufficient Information

Woodside produces a Consultation Information Sheet for each EP. This is provided to relevant persons and organisations and is also available on Woodside's website for interested parties to access and to provide feedback on. The Consultation Information Sheet typically includes a description of the proposed petroleum activity, the Operational Area depending on the EP, where the activity will take place, the timing and duration of the activity, a location map of the operational area and EMBA, a description of the EMBA, relevant exclusion zones as well as a summary of relevant risks and mitigation and/or management control measures relevant to the proposed petroleum activity. It also sets out contact details to provide feedback to Woodside.

Woodside recognises that the level of information necessary to assist a person or organisation to understand the impacts of the proposed activity on their functions, interests or activities may vary and also may depend on the degree to which a relevant person is affected. For example, Woodside considers that relevant persons who may be impacted by planned activities in the operational area, as a result of temporary displacement due to exclusion zones, may require more targeted information relevant to their functions, interests or activities. A titleholder can be said to have provided sufficient information even where it has not provided all documents requested by a relevant person. Woodside also acknowledges NOPSEMA's brochure entitled *Consultation on Offshore Petroleum Environment Plans Information for the Community*, which advises consultees that they may inform titleholders that they only want to be consulted in the very unlikely event of an oil spill.

Woodside places advertisements in selected local, state, and national newspapers. This typically includes the name of the EP that Woodside is seeking feedback on, an overview of the activity, the consultation feedback date, and the ways in which a person or organisation can provide feedback. Advertising in the local paper in the area of the activity is also consistent with the public notification process under section 66 of the *Native Title Act* for native title applications. Woodside typically aligns advertisement feedback timeframes with the timing described below. Feedback received is assessed in accordance with Section 5.3 to determine relevance and evidenced in Appendix F, Table 1 as appropriate.

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Woodside utilises a range of tools to provide sufficient information to relevant persons, which may include one or more of the following:

- Consultation Information Sheet available on Woodside’s website
- Summary Consultation Information Sheet, presentations or summaries specific to a particular relevant person group
- subscription available on Woodside’s website to receive notification of new Consultation Information Sheets for Woodside EPs
- emails
- letters
- phone calls
- face-to-face meetings (virtual or in person) with presentation slides or handouts as appropriate
- maps outlining a persons or organisations defined area of responsibility in relation to the proposed activity, for example a fisheries management area or defence training area
- community meetings, as appropriate.

Woodside recognises that information may need to be provided to relevant persons in an iterative manner during the consultation process. Woodside considers that genuine two-way engagement may be via information on incorporation of controls, where applicable, being provided to the relevant person so that the relevant persons understand how their input has been considered in the development of the EP.

Woodside communicates with relevant persons in different ways. Woodside recognises that as part of genuine two-way dialogue, these forms of communication may evolve, including for example due to changes to organisation representation, as relationships are further established, or as a preference for an alternative form of communication is expressed by a person or organisation. Woodside acknowledges that there might be limitations in how it can consult with relevant persons.

Typical forms of communications for categories of relevant persons are set out below.

Category of Relevant Person	Typically Accepted Form of Communication
Government departments / agencies – marine	Woodside applies NOPSEMA’s guideline for engagement with Commonwealth government departments or agencies in line with <u>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023</u> by using email for its consultation unless another form of communication is requested.
Government departments / agencies – environment	
Government departments / agencies – industry	
Commercial fisheries and peak representative bodies	<p>Commonwealth commercial fisheries: Email is used as the primary form of communication with Commonwealth commercial fisheries in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.</p> <p>State commercial fisheries and recreational marine users: As advised by the Victorian Fishery Authority, communication with licence holders is conducted through the relevant fishery representative bodies.</p> <p>Recreational marine users: Email is used as the primary form of communication with recreational marine users in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.</p> <p>Peak representative bodies: Email is used as the primary form of communication with commercial fishery and recreational marine user peak representative bodies in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.</p>
Recreational marine users and peak representative bodies	

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Category of Relevant Person	Typically Accepted Form of Communication
Titleholders and Operators	Email is used as the primary form of communication between titleholders and operators in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Peak industry representative bodies	Email is used as the primary form of communication with peak representative bodies in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Traditional Custodians and nominated representative corporations	There are many forms of communication that Woodside uses on a case-by-case basis and as appropriate to or requested by the specific group, such as email, phone calls, meetings and community forums. Other forms of communication are used on request.
Native Title Representative Bodies	There are many forms of communication that Woodside uses on a case-by-case basis and as appropriate to or requested by the specific group, such as email, phone calls, meetings and community forums. Other forms of communication are used on request.
Historical heritage groups or organisations	NOPSEMA's guideline (<i>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023</i>) for engagement with government departments or agencies is used as a reference for Woodside's approach for communicating with historical heritage groups or organisations. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Local government and recognised local community reference/liaison groups or organisations	Local government: NOPSEMA's guideline (<i>GL1887 – Consultation with Commonwealth agencies with responsibilities in the marine area – January 2023</i>) for engagement with local government is used as a reference for Woodside's approach for communicating with historical heritage groups or organisations. Community reference/liaison groups and chambers of commerce: Email is used as the primary form of communication with local community reference/liaison groups or organisations in the ordinary course of business. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Other non-government groups or organisations	Email is used as the primary form of communication with Other non-government groups or organisations. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.
Research Institutes and Local conservation groups or organisations	Email is used as the primary form of communication with research institutes and local conservation groups or organisations. Other forms of communication, such as phone calls, and meetings and/or presentation briefings are used on request.

Information which is provided to relevant persons for the purposes of consultation on this EP is summarised at Appendix F, Table 2.

Appendix F, Table 3 sets out the information which is provided to persons or organisations that are not relevant for the purposes of regulation 25 of the Environment Regulations but which Woodside has chosen to contact.

When engaging in consultation, Woodside notifies relevant persons that, in accordance with regulation 25(4), the relevant person may request that particular information the person or organisation provides in the consultation not be published and that information subject to that request will not be published.

5.4.2. Reasonable Period for Consultation

Woodside seeks to consult in order to support preparation of its Environment Plan. Woodside recognises that what constitutes a reasonable period for consultation should be considered on a case-by-case basis, with reference to the nature, scale, and complexity of the activity.

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Woodside recognises that information may need to be provided to relevant persons in an iterative manner during the consultation process. Woodside considers that genuine two-way engagement may be demonstrated on incorporation of controls (where applicable) being provided to the relevant person so that the relevant person understands how their input has been considered in the development of the EP.

Woodside considers its methodology allows relevant persons a reasonable period for consultation (Regulation 25(3) of the Environment Regulations). A reasonable period for all relevant persons, including Traditional Custodian relevant persons, to participate in consultation for this EP has been provided.

The consultation period under this EP has satisfied benchmark periods under other relevant legislative processes:

- Regulation 30 of the Regulations sets out a public consultation period of 30 days
- The Department of Mines and Petroleum “Guidelines for Consultation with Indigenous People by Mineral Explorers” directs a period of 21- 30 days of consultation with traditional owners
- While repealed, guidance taken from the Aboriginal Cultural Heritage Act 2021—Consultation Guidelines (Government of Western Australia, 2023) suggests that up to 12 weeks may be a reasonable period of time to allow identification, contact, and response, from First Nations peoples (subject to any alternative timeframe being agreed through co-design of consultation).

This period of consultation demonstrates that Woodside has provided a “reasonable period” for relevant persons to consult in accordance with regulation 25(3). Commentary in the *Tipakalippa Appeal* judgment limits consultation to a process that must be capable of being discharged within a reasonable time:

“...it must be taken to be the regulatory intention that the consultation requirement cannot be one that is incapable of being complied with within a reasonable time...”⁶

Woodside seeks feedback in order to support preparation of its environment plan. What constitutes a reasonable period for consultation is considered on a case-by-case basis, with reference to the person being consulted and the nature, scale and complexity of the activity.

Woodside's typical approach to enable a reasonable period for consultation is as follows:

- advertising in selected local, state and national newspapers to give persons or organisations the opportunity to understand the activity and identify whether their functions, interests or activities may be affected
- providing consultation materials directly to identified relevant persons as well as persons who are not relevant but Woodside chose to contact, and providing a target date for feedback. Woodside acknowledges that feedback may be received from relevant persons following the target date
- acknowledging that the way in which Woodside provides consultation information may vary depending on the relevant person or organisation and, may depend on the degree to which a relevant person or organisation is affected. Different consultation processes may be required for relevant persons and organisations depending on the information requirements
- following up with relevant persons prior to EP submission. Where possible, Woodside will endeavour to use an alternative method of communication to contact the relevant person
- engaging in two-way dialogue with relevant persons or organisations where feedback is received.

Appendix F, Table 2 and Table 3 sets out a history of consultation and demonstrates that a reasonable period of consultation has been afforded for each relevant person.

Woodside considers that the “reasonable period” of consultation for this EP has closed.

As detailed in Section 5.6, if comments and feedback are received after the EP has been submitted, Woodside will consider those comments and update controls as appropriate, at all stages during the life of the EP as per Woodside’s ongoing consultation approach as described in Section 5.7.

⁶ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [136].

5.4.3. Discharge of Regulation 25

The Full Federal Court made clear in the Tipakalippa Appeal that consultation should be approached in a “reasonable”, “pragmatic” and “not so literal” way, so that consultation obligations were capable of being met by titleholders (Section 5.5.1).⁷ Consultation is a “real world activity” and must be capable of reasonable discharge.⁸ The Full Federal Court referred to Native Title cases as an illustration that reasonable limits should be applied to consultation efforts to ensure the process is workable.⁹

When the titleholder demonstrates that it has provided sufficient information and a reasonable period for consultation, the regulation 25 consultation requirements are met.¹⁰ Meeting these obligations requires evaluative judgment to determine reasonable satisfaction of the consultation obligation and, as such, the Regulator uses its discretion to determine if these criteria are met. The nature of the person being consulted, and their function, interest and activity that may be affected, will inform the manner of consultation and the reasonable period to be afforded.¹¹

The titleholder is not required to obtain consent from a consultee to engage in the activity or confirmation from a consultee that consultation is complete. A titleholder is required to provide an opportunity to consult.

The Federal Court has commented that a “reasonable opportunity” for consultation must be afforded to relevant persons.¹² A reasonable opportunity may not be every opportunity requested and is limited to reasonable opportunities to consult.

Woodside has completed reasonable steps to discharge its consultation obligations. Woodside has provided sufficient information and a reasonable period of time to enable relevant persons to make an informed assessment of the possible consequences of the activity on their functions, interests or activities, and sufficient time to provide relevant feedback for Woodside to assess relevant persons' objections or claims, and action the assessment and response. Woodside has also provided a reasonable opportunity for there to be genuine two-way dialogue on environmental impacts and concerns.

Woodside has discharged its duty under regulation 25 of the Environment regulations. Woodside considers that consultation under regulation 25 is complete.

Appendix F, Table 2 and Table 3 of this EP sets out the history of consultation under regulation 25. To the extent a relevant person says that it has further information to share or claims that consultation under regulation 25 has not completed, Appendix F, Table 2 and Table 3 provide reasons specifically why Woodside considers consultation under regulation 25 has been met in relation to that relevant person.

5.5. Context of Consultation Approach with First Nations

To comply with regulation 25 of the Environment Regulations, Woodside identifies and consults Traditional Custodians whose functions, interests or activities may be affected by the activities under an EP.

5.5.1. Approach to Methodology – Woodside’s Interpretation of Tipakalippa Appeal

Woodside has implemented a consultation methodology consistent with regulation 25 of the Environment regulations and guidance provided in the Tipakalippa Appeal (Section 5.2). Woodside’s consultation methodology allows for a sufficiently broad capture of Traditional Custodian relevant persons, provides for informed consultation, follows cultural protocols and allows a reasonable opportunity for consultation with

⁷ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 [89], [98], [103]-[104] and [109].

⁸ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [89].

⁹ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [96] and [103].

¹⁰ Explanatory Statement, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, page 29.

¹¹ Explanatory Statement, Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023, page 30 and Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [153].

¹² Cooper v National Offshore Petroleum Safety and Environmental Management Authority (No 2) [2023] FCA 1158 at paragraph [11]; Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at [153].

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Traditional Custodians whose functions, interests or activities may be affected by the activity described in this EP (Section 5.5.2.1 to 5.5.2.5).

Woodside notes that the Full Federal Court discussed several *Native Title Act 1993* (Cth) (NTA) cases in response to a submission made in that case that a requirement under regulation 25 to consult “each and every” relevant person would be “unworkable”. The reference to native title cases dealt with how decision-making processes under the NTA requiring “all” members of a group to be contacted for communal approval are interpreted by courts in a “reasonable”, “pragmatic” and “not so literal” way,¹³ and how obligations to consult “each and every” person under regulation 25 should be interpreted in a similarly pragmatic way so that consultation is workable. The reference to NTA authorities was made by analogy:

“It can be seen that the terms of [the native title legislation] are somewhat absolute – “all”. However, [the native title legislation] has consistently been construed in a way that is not so literal ... The cases concerning [the native title legislation] ... have reiterated ... that [the native title legislation] does not require that “all” of the members of the relevant claim group be involved in the decision. The key question will be whether a reasonable opportunity to participate in the decision-making process has been afforded by the notice for a relevant meeting.”¹⁴

“We consider the authorities in relation to processes under the NTA to be **illustrative** of how a seemingly rigid statutory obligation to consult persons holding a communal interest may operate in a workable manner”¹⁵ (emphasis added).

“there is no definition of what constitutes “consultation for the purpose of ref 11A [updated to 25]... A titleholder will need to “demonstrate” to NOPSEMA that what it did constituted consultation appropriate and adapted to the nature of the interests of the relevant persons” (emphasis added).

The Judgment in the Tipakalippa Appeal makes it clear that a Titleholder will have some decisional choice in identifying which natural person(s) are to be approached, how the information will be given to allow the “relevant person” to assess the possible consequence of the proposed activities on their functions, interests or activities, and how the requisite consultation is undertaken.¹⁶ Woodside takes this to mean that consultation is not fixed to a rigid process, and indeed, will need to be adapted so that it is informed by the relevant person or group. Woodside has met its regulation 25 requirements through its consultation methodology (Section 5.5.2).

Consistent with the Tipakalippa Appeal, Woodside considers NTA-style “full group” meetings are not the only way to comply with regulation 25 in relation to Traditional Custodian relevant persons. Nominated representative corporations (such as Prescribed Bodies Corporates (PBCs) established under the NTA) have a designated role of representing the views of their member Traditional Custodians. They have established methods for engaging with their own members. Woodside will not undermine the purpose and authority of nominated representative corporations by requiring full group meetings where the nominated representative corporations have not requested engagement of members via full group meetings. We do not consider it appropriate for titleholders to direct or challenge the nominated representative corporations on how to engage with their members.

Woodside's approach described below demonstrates that sufficient information and a reasonable opportunity is provided to individual Traditional Custodians to provide feedback on Woodside activities beyond the opportunity provided to nominated representative corporations.

5.5.2. Consultation Method

Woodside's First Nations team has experience in engaging and working with First Nations organisations and individuals, including working within the Commonwealth native title and cultural heritage systems and state and territory cultural heritage and land rights systems for several decades. The team understands the complexities of making information accessible to groups and individuals and engaging in accordance with First

¹³ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95], [98], [103]-[104] and [109].

¹⁴ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [98].

¹⁵ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [96].

¹⁶ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [47] and [48].

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Nations groups' established channels of communication and methods of consultation. The First Nations team exercises its professional judgement and is deeply respectful of long-standing relationships (where in place) when considering consultation with First Nations groups. The First Nations team's approach is also informed by the established systems of recognition for First Nations groups and their nominated representative corporations within particular jurisdictions.

For example, the methodology for engaging with First Nations groups in the Northern Territory tends to involve engagement through Aboriginal land councils (under the *Aboriginal Land Rights (Northern Territory) Act 1976* (Cth)) as well as community meetings that target clan groups where they do not have PBCs or other nominated representative corporations to represent them. By contrast, recognition for First Nations groups and their nominated representative corporations in Western Australia falls under the *Native Title Act 1993* (Cth) because the vast majority of the Western Australian coastline is settled under the native title regime. This means that the methodology and process for consultation in Western Australia places greater emphasis on but is not limited to Native Title Representative Bodies and PBCs. In Victoria, Woodside has consulted with Registered Aboriginal Parties (RAP) established under the *Aboriginal Heritage Act 2006* (Vic), where they have been identified as a relevant person through the process described in Section 5.3.4. A PBC or Traditional Owner Corporation will automatically be appointed a RAP under the Act.

Native title determinations provide certainty about the appropriate Traditional Custodian groups that have the cultural authority to speak for country adjacent to the EMBA and help Woodside to identify Traditional Custodian persons and groups asserting Traditional Custodianship. The Judgment in the Tipakalippa Appeal endorses methods of consultation with groups of relevant persons that are appropriate and adapted to the characteristics of groups.¹⁷ Woodside's consultation methodology is adapted and appropriate to the recognised systems of communal interests in Victoria. Woodside has sought to follow the established, effective and respectful means of communication used by Native Title Representative Bodies and nominated representative corporations (including PBCs) with their respective First Nations communities. Woodside follows these processes for the appropriate broad capture of individuals' awareness of our activities, to self-identify (Section 5.5.2.2), and to provide feedback to inform the management of environmental impacts and risks.

Using these tools, Woodside communicates information about Environment Plans by:

- advertising in relevant newspapers. This encourages self-identification, by advertising proposed activities widely through newspapers that have national and intra-state circulation, i.e., The Australian, Herald Sun Colac Herald, Cobden Times, Warrnambool Standard
- creating carefully considered Consultation Summary Sheets with information developed by an Indigenous member of the First Nations Team to remove jargon and provide relevant information for people to have informed understandings about the activities
- direct contact through nominated representative corporations
- utilising social media (i.e., Facebook/Instagram), texts and emails. These mediums are the preferred communication methods used by Traditional Custodians and, on that basis, used by Native Title Representative Bodies and other government agencies and industry, to engage with Traditional Custodians or call meetings. First Nations woman, Professor Bronwyn Castle found, through 10 years of research, that “[s]ocial media is an intrinsic part of daily life. The use of Facebook is around 20 per cent higher [among First Nations people] than the national average across all geographical locations” (Social media mob: being Indigenous online, Professor Bronwyn Carlson (2018))
- for ongoing consultation post regulation 25 consultation of the Environment Regulations, Woodside introduced a Program of Ongoing Engagement with Traditional Custodians which sets out Woodside's commitment to ongoing engagement and support to care for and manage country, including Sea Country. The program was developed in response to Traditional Custodian feedback

¹⁷ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 at paragraph [95], [104], [153].

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- Woodside has members of its First Nations team who serve as points of contact for First Nations organisations and individuals. These team members have broad local First Nations knowledge and well established, on-the-ground relationships within First Nations communities.
- from the commencement of engagement with Traditional Custodians, Woodside seeks direction on how they prefer to be consulted and has consulted accordingly. Consultation processes that are informed by Traditional Custodians and co-designed on a case-by-case basis and includes their direction as to cultural protocols, structure of consultation and whom to appropriately consult with (such as elders)
- holding meetings on country at a place and time agreed with the Traditional Custodians and offering and providing financial assistance for meeting expenses (as appropriate)
- attending meetings organised by representative corporations (including RAPs), when invited, and offering and providing financial assistance for meeting expenses (as appropriate)
- providing information specifically designed to be easily understood, to reach all relevant people, and give a reasonable period of time for those people to make an informed assessment of the possible consequences of the proposed activity on them.

The First Nations teams' approach to consultation is also consistent with the Federal Court's decision in the Munkara Case. The Munkara Case notes that the word "culture" (and hence the word "cultural") has a communal aspect to it. In order to establish cultural features, it is necessary that the beliefs and values are held by the relevant people as a people. In order for values, features or beliefs that are expressed by an individual to be "cultural" they cannot simply be an individual's belief - the belief must have a communal aspect to, and demonstrate that the "individual beliefs are broadly representative of the beliefs of other members of the group". The phrase "cultural features", when applied to "people" as constituent parts of an ecosystem, is not directed to idiosyncratic views or beliefs of an individual. When the First Nations team is told that a particular value is cultural by a Traditional Owner, that information is taken back to the relevant cultural authority to test its broad acceptance. In the case of gender sensitive information, that information would be restricted to the specific gender within the community.

5.5.2.1. Identification of Relevant Persons

In order to undertake consultation, Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 25(1) of the Environment Regulations (Section 5.2 and 5.3).

Specific to Woodside's approach for identifying relevant Traditional Custodians, Woodside's First Nations Communities Policy and consultation approach is guided by Traditional Custodians by directing consultations through their nominated representative corporation. This has been implemented by Woodside through consultation with a nominated representative corporation where that corporation has advised Woodside that it acts as the representative body for a Traditional Custodian group and has requested that Woodside engage with it as the representative body for that Traditional Custodian group.

Woodside asks nominated representative corporations (such as PBCs) and Native Title Representative Bodies to identify individuals that should be consulted, and enables individuals to self-identify in response to national and local advertising, social media and community engagement opportunities (Section 5.5.2.5). Where there is a nominated representative corporation for an area, unless directed by the nominated representative corporation, Woodside does not directly approach individuals for consultation, because this has the potential to undermine the role of the nominated representative corporations. Approaching individuals directly is a practice that is no longer considered acceptable because of divisions it has been shown to cause in communities. In addition to asking for the identification of individuals, Woodside also asks nominated representative corporations to distribute consultation information to whomever the nominated representative corporations deem appropriate including members of the nominated representative corporations who are communal rights holders.

Having said this, as set out in further detail in Section 5.5.2.4 below, individuals are also given the opportunity to self-identify, consult and provide their own feedback on the proposed activity. When approached in this way, Woodside will engage individuals as relevant persons and will also (subject to any confidentiality or cultural restrictions) advise the nominated representative body of the consultation where it relates to cultural values.

These methods of consultation are consistent with requirements for notification under the *Native Title Act 1993* (Cth), such as under the future act provisions (section 29), which requires notification of the Native Title Representative Body, the PBC (or nominated representative) and notification through newspapers. The notification process has been selected as a respectful, practical and pragmatic analogue for consultation with First Nations peoples, rather than requiring members to be notified via a formal authorisation process which aims to seek, from members, authorisation of agreements and native title/compensation claims under the *Native Title Act 1993* (Cth).¹⁸

In this consultation, Woodside requested nominated representative corporations to identify any potential individual relevant persons for consultation. Woodside requests nominated representative corporations to distribute consultation materials to their members, however, Woodside recognises that the process is voluntary and that it cannot compel nominated representative corporations (such as PBCs) to do so. Woodside also recognises that it would not be appropriate to seek to audit the nominated representative corporations for compliance with any member consultation request.

5.5.2.2. Opportunity to Self-identify and Identifying Other Individuals

Woodside requests nominated representative corporations and Native Title Representative Bodies to identify other individuals to consult with or individuals who may seek to self-identify for a proposed activity. Woodside also advertises broadly through Indigenous, national, and local advertising, social media and community engagement opportunities to provide individuals with an opportunity to consult. Woodside does not directly approach individuals for consultation, as this undermines the role of the nominated representative corporations (Section 5.5.2.1). Woodside's approach to providing individual Traditional Custodians the opportunity to self-identify and consult for an Environment Plan is as follows:

- Woodside applies the principles of self-determination when consulting with Traditional Custodians by consulting through the Traditional Owners authorised representative entities.
- Recognising the function of nominated representative corporations (such as PBCs) and Native Title Representative Bodies to represent communal interests and manage cultural values, Woodside requests that the information provided to representative entities is provided to their members but Woodside recognises the process is voluntary and Woodside cannot compel them to do so nor seek to audit the representative entities for compliance with any request.
- Representative entities cannot provide membership details to Woodside due to individual confidentiality requirements.
- Woodside requests advice as to who else Woodside should be consulting but recognises the process is voluntary and cannot compel nominated representative corporations to provide this information.
- Modern Indigenous engagement practises rely on the building and maintaining of respectful relationships. Most nominated representative corporations to date have requested the building of that relationship, where one is not already in place.
- While Woodside has, in some cases, approached individual directors and elders outside of this process due to requirements imposed in Environment Plan consultation, this approach is considered inappropriate by modern Indigenous engagement standards, fundamentally undermining the authority of the authorised representative entity and can be detrimental to the relationship.

For this proposed activity, Woodside requested nominated representative corporations (including PBCs) and Native Title Representative Bodies to identify any potential individual relevant persons for consultation, and to distribute consultation materials to their member base. However, Woodside recognises the process is voluntary and it cannot compel them to do so nor seek to audit the representative entities for compliance with any request. Woodside has not been directed to engage individual Traditional Custodians by nominated representative corporations for this proposed activity. Woodside has nevertheless provided reasonable

¹⁸ Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193, at [104]

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opportunity for individual Traditional Custodians to engage in consultation through appropriate and adapted consultation methods.

5.5.2.3. Sufficient Information

Woodside recognises that the information sufficient to allow a person or organisation to make an informed assessment of the possible consequences of the proposed activity on their functions, interests or activities may vary and may depend on the degree to which a relevant person is potentially affected.

Woodside produces a Consultation Information Sheet for each EP which is provided to relevant persons and organisations to provide the opportunity for feedback on the activity (Section 5.4). In response to Traditional Custodians' feedback, Woodside has tailored effective consultation methods for its activities, specifically designed for Traditional Custodians, so that information is provided in a form that is readily accessible and appropriate. The targeted Consultation Summary Sheet developed and reviewed by Indigenous representatives so that content is appropriate to the intended recipients, is then provided to relevant Traditional Custodian groups. Phone calls are made to provide context to the consultation.

Where face to face consultation meetings are requested, Woodside coordinates engagement at the Traditional Custodians' location of choice (where practicable) and with their nominated attendees. Key project personnel, environmental and First Nations relations experts are typically present to enable effective communication and prompt response to questions. Materials for these sessions incorporate visual aids such as photos, maps and videos, and plain language suitable for people with a non-technical background.

During consultation, Woodside provides relevant persons with additional information as appropriate in response to requests. There is no requirement to provide relevant persons with all information or documents requested and a titleholder will have provided sufficient information even where it has not provided all information or documents requested.

Woodside has sought to provide sufficient information to individual members of nominated representative corporations (such as PBCs) by providing information to representative bodies and requesting dissemination with members. However, Woodside recognises consultation is voluntary and it cannot compel them to do so, nor would it be appropriate to seek to audit the representative entities for compliance with any request.

5.5.2.4. Reasonable Period for Consultation

Woodside seeks to consult to support preparation of its Environment Plan. Woodside recognises that what constitutes a reasonable period for consultation should be considered on a case-by-case basis, with reference to the nature, scale and complexity of the activity (Section 5.4.2).

5.5.2.5. Discharge of Regulation 25

Woodside's consideration and approach to discharging regulation 25 of the Environment Regulations for relevant persons is discussed in Section 5.4.3. In addition to this, Woodside has considered the application of regulation 25 specifically to First Nations, based on the Tipakalippa Appeal.

In relation to Traditional Custodian relevant persons (and all relevant persons), Woodside has discharged its duty under regulation 25 of the Environment Regulations. Woodside considers that consultation under regulation 25 is complete (Section 5.4.3).

5.6. Providing Feedback and Assessment of Merit of Objections or Claims

There are a number of ways in which feedback can be provided. Feedback can be provided through the Woodside feedback email or via the Woodside feedback toll free phone line as outlined in the Consultation Information Sheet and the Woodside website. Where appropriate, consultation may also be supported by phone calls or meetings. An environment plan feedback form is also available on Woodside's website enabling stakeholders to provide feedback on proposed activities, or to request additional information.

Woodside consults widely on its EPs and notes that feedback is received in various forms. Feedback that is considered inappropriate or that puts the environment, health, safety or wellbeing of Woodside employees or operations at risk will not be tolerated. Woodside respects people's rights to protest peacefully and lawfully but

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actions that put the environment, health, safety or wellbeing of Woodside employees or operations at risk go beyond those boundaries.

Woodside accepts feedback and engages in consultation to achieve the aims set out in Section 5.2. Woodside recognises that there are persons and organisations that take a view that Woodside's operations and/or growth projects should be stopped or at least delayed as far as possible. Whilst Woodside assesses the merits of objections or claims received, it acknowledges NOPSEMA's guidance in its brochure entitled Consultation on offshore petroleum environment plans information for the community, which states that relevant persons are free to respond on any matter and raise any concern, however this may not be able to be considered if it is outside the scope or purpose of the environment plan and approval process, for example, statements of fundamental objection to offshore petroleum activities or information containing personal threats or profanities.

Under 34(g), there is no requirement for a relevant person to agree or confirm that they have been adequately consulted.

Feedback from relevant persons is reviewed and an assessment of the merits is made of information provided as well as objections or claims about the adverse impact of each activity to which the EP relates. This might, for instance, be done through a review of data and literature and for relevance to the nature and scale of the activity outlined in the EP. Consistent with the aim of consultation in Section 5.2, Woodside will consider information received when reviewing and designing measures to put in place to minimise harm to relevant persons and where reasonable or practical to further manage impacts and risks to ALARP and acceptable levels.

Woodside considers feedback during consultation from relevant persons and other persons Woodside chose to contact (see Section 5.3.7). This information is summarised in Appendix F, Table 1 and Table 2 of the EP and includes a statement of Woodside's response, or proposed response, if any, to each objection and claim.

In accordance with regulation 26(8) of the Environment Regulations, sensitive information (if any) in an EP, and the full text of any response by a relevant person to consultation under regulation 25 of the Environment Regulations, must be contained in the sensitive information part of the plan and not anywhere else in the plan.

5.7. Ongoing Consultation

Consultation can continue to occur during the life of an EP, including after an EP has been accepted by NOPSEMA.

As per Woodside's ongoing consultation approach (refer to Section 9.8), feedback and comments received from relevant persons continue to be assessed and responded to, as required, throughout the life of an EP, including during its assessment and once accepted, in accordance with the intended outcome of consultation.

Should consultation feedback be received following the acceptance of an EP that identifies a measure or control that Woodside considers requires implementation or updates to meet the intended outcome of consultation, Woodside will apply its Management of Change and Review process as appropriate (see Section 9.9).

6. Environmental Risk Management Framework

Woodside has established a risk management governance framework with supporting processes and performance requirements that provide an overarching and consistent approach for the identification, assessment, and management of risks. Woodside policies have been formulated to comply with the intent of the Risk Management Policy and be consistent with the AS/ISO 31000-2018 Risk Management Principles and Guidance.

An integrated impact and risk assessment process was used to identify the most appropriate control measures to ensure each impact and risk is reduced to ALARP and an acceptable level (Figure 6-1). This process includes the incorporation of consultation with relevant persons, regulatory requirements, industry good practice and environmental monitoring data on the relevant environmental impacts and risks.

6.1. Evaluation of Impacts and Risks

A formal impact and risk assessment was completed for each environmental aspect and source of hazard for the activities described in Section 3 using the Environmental Hazard Identification (ENVID) workshop process. The objective of the impact and risk assessment is to demonstrate that the identified impacts and risks associated with the petroleum activity are reduced to ALARP and are of an acceptable level. Impacts, risks and potential consequences were identified based on planned and potential interaction with the activity (based on the description in Section 3), the existing environment (Section 4) and the outcomes of Woodside's consultation process (Section 5).

An ENVID workshop was conducted in September 2021 for the petroleum activities described in this EP. Participants included Woodside HSE, projects and engineering departments and specialist environmental consultants. Following the ENVID, impact and risk information was then classified, evaluated and tabulated for each planned activity and unplanned event. Environmental impacts and risks are recorded in an environmental impacts and risk register. The output of the ENVID is used to present the risk assessment and forms the basis to develop performance outcomes, performance standards and measurement criteria.

The impact and risk assessment process is illustrated in Figure 6-1 and considers planned (routine and non-routine) activities, unplanned (accidents/incidents) events and emergency conditions. The process considered previous risk assessments for similar activities, reviews of relevant studies, reviews of past performance, external stakeholder consultation feedback and a review of the existing environment. The process includes:

- confirming the sources of hazards for the planned activities and unplanned events
- identifying environmental impact and risk receptors
- analysing environmental impact and risk receptors
- identifying potential controls to reduce the impacts and risks
- allocating a likelihood rating for all unplanned events
- allocating a severity rating for all planned activities and unplanned events
- accepting controls through an ALARP process
- assessing final acceptability of the risks and impacts using the Woodside acceptability criteria.

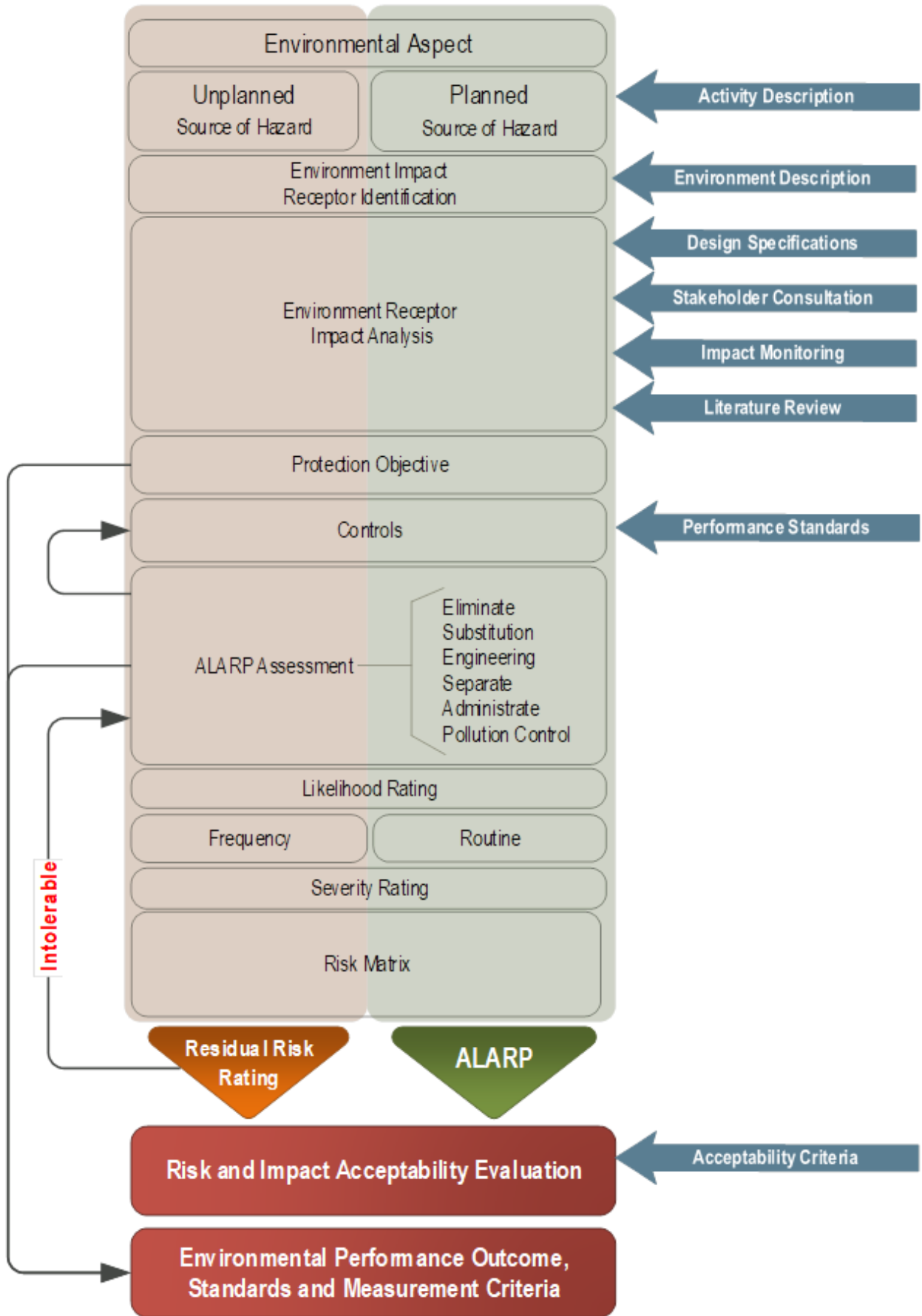


Figure 6-1: Environment plan integrated impact and risk assessment

6.1.1. Decision Context

Consistent with the *Guidance on Risk Related Decision Making* (Oil and Gas UK, 2014), Woodside has applied decision criteria to determine whether impacts and risks created during the petroleum activity constitute ‘lower-order’ or ‘higher-order’ impacts and risks, and subsequently how each are managed to ALARP (Section 6.2) and acceptable levels (Section 6.3). This approach implies a level of proportionality wherein the principles of decision-making applied to each particular hazard are proportionate to the acceptability of environmental risk of that hazard.

The decision-making principles described in Table 6-1 are consistent with the precautionary principle (as defined in the EPBC Act) and provide assurance that the environmental impacts and risks are reduced to ALARP and of an acceptable level.

Table 6-1: Risk related decision making framework

Decision Type	Description
Decision Type A	Woodside considers lower-order (or ‘Type A’) impacts or risks as those that are: <ul style="list-style-type: none"> ▪ well understood and established practice, typically derived from standard, non-complex or routine operations familiar to Woodside ▪ there are clearly defined regulatory, corporate or industry (good practice) controls to manage the impact or risk ▪ have no concerns or objections from relevant stakeholders ▪ have a ‘severity level’ for planned operations (impacts) and unplanned events (risks) that does not exceed ‘2’ based upon the severity level definition (Table 6-3) ▪ have a ‘likelihood’ for unplanned events that is either ‘unlikely’ or ‘highly unlikely’ based upon the likelihood definitions (Table 6-4).
Decision Type B	Woodside considers higher-order (or ‘Type B’) impacts or risks as those that are: <ul style="list-style-type: none"> ▪ not well understood or involve a level of uncertainty, typically derived from complex operations not routinely performed by Woodside ▪ have regulatory, corporate or industry (good practice) controls that require additional definition or validation ▪ have had some concerns or objections raised by relevant stakeholders ▪ have a ‘severity level’ for planned operations (impacts) and unplanned events (risks) that is ‘3’ based upon the severity level definition (Table 6-3) ▪ have a ‘likelihood’ for unplanned events that is considered ‘probable’ to ‘highly likely’ based upon the likelihood definitions (Table 6-4).
Decision Type C	Woodside considers highest-order (or ‘Type C’) impacts or risks as those that are: <ul style="list-style-type: none"> ▪ not understood or there is a high degree of uncertainty, typically derived from operations not previously performed by Woodside ▪ have corporate or industry (good practice) controls that either do not exist or are insufficient to manage impacts or risks and therefore require adoption of the precautionary approach ▪ have had multiple concerns or objections raised by relevant stakeholders or lobby groups ▪ have a ‘severity level’ for planned operations (impacts) and unplanned events (risks) that is equal to or exceeds ‘4’ based upon the severity level definition (Table 6-3) ▪ have a ‘likelihood’ for unplanned events that is considered ‘probable’ to ‘highly likely’ based upon the likelihood definitions (Table 6-4).

6.1.2. Environmental Impact and Risk Assessment

The environmental impacts were based on the environmental receptors identified in Section 4 with the impact descriptions developed in an initial screening process that identified the specific receptor that may be impacted. Further quantitative or qualitative definition of the impact was then completed to understand the impact

(planned or unplanned) and to confirm that the severity of the risk and impact was correctly assigned during the evaluation process.

6.1.3. Planned Activity Impact Assessment

All planned activities were assessed as being a routine impact and defined as such in the ENVID. The description and degree of impact formed the basis for the severity rating applied with a quantitative assessment of impact conducted where possible to allow the impact to be well understood and clearly categorised on the severity table. Where this was not possible, a robust qualitative assessment was completed and the severity rating assigned during the ENVID process in accordance with the HSE Risk Matrix, which is consistent with the Risk Management Severity Table (Table 6-3) taking into account any of the mitigative controls assigned. Where relevant, the potential for cumulative impacts or potential impacts to the values of World Heritage Properties from planned activities has also been evaluated. Given routine operations are planned, and impacts are mitigated via the application of control measures, likelihood or residual risk ratings were not applied.

6.1.4. Unplanned Event Risk Assessment

Risk ranking of unplanned events is the product of the consequence of an event (severity) and the likelihood of that event occurring.

Likelihood and potential severity ratings were assigned in accordance with the Woodside (PetDW) HSE Risk Matrix (Table 6-2), which allowed the risk of individual events to be categorised in a methodical and structured process. This was completed based upon judgement by the ENVID assessment team with detailed potential impact descriptions used to support a robust and comprehensive decision.

The potential severity rating was determined based on the potential impact that may occur once the source of hazard had occurred considering the application of mitigative controls in place to reduce the impact (Table 6-3).

The likelihood rating is based on the frequency of the source of hazard actually occurring with all preventative controls taken into consideration (Table 6-4).

Table 6-2: Woodside risk matrix used for rating planned activities and unplanned events

Likelihood	Severity Level				
	1	2	3	4	5
<i>Highly Likely</i>	30	90	300	900	3000
<i>Likely</i>	10	30	100	300	1000
<i>Probable</i>	3	9	30	90	300
<i>Unlikely</i>	1	3	10	30	100
<i>Highly Unlikely</i>	0.3	0.9	3	9	30

Table 6-3: Woodside severity level definitions for environmental and community

Severity Level	Descriptor	Severity Factor
5	<ul style="list-style-type: none"> ▪ Severe impact to the environment and where recovery of ecosystem function takes 10 years or more; or ▪ Severe impact on community lasting more than 12 months or a substantiated human rights violation impacting 6 or more people 	1000
4	<ul style="list-style-type: none"> ▪ Serious impact to the environment, where recovery of ecosystem function takes between 3 and up to 10 years; or ▪ Serious impact on community lasting 6-12 months or a substantiated human rights violation impacting 1-5 persons 	300
3	<ul style="list-style-type: none"> ▪ Substantial impact to the environment, where recovery of ecosystem function takes between 1 and up to 3 years; or ▪ Substantial impact on community lasting 2-6 months 	100
2	<ul style="list-style-type: none"> ▪ Measurable but limited impact to the environment, where recovery of ecosystem function takes less than 1 year; or ▪ Measurable but limited community impact lasting less than one month 	30
1	<ul style="list-style-type: none"> ▪ Minor, temporary impact to the environment, where the ecosystem recovers with little intervention; or ▪ Minor, temporary community impact that recovers with little intervention 	10

Table 6-4: Woodside likelihood definitions

Uncertainty	Frequency	Likelihood Factor
Highly Likely	Likely to occur within a 1-year period	3
Likely	Likely to occur within a 1–5-year period	1
Probable	Likely to occur within a 5-20 year period	0.3
Unlikely	Likely to occur within a 20-50 year period	0.1
Highly Unlikely	Not likely to occur within a 50 year period	0.03

6.2. Demonstration of ALARP

Regulation 21(5) of the Environment Regulations requires demonstration that the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable (ALARP).

6.2.1. Planned Activity and Unplanned Event ALARP Evaluation

This section details the process for demonstrating ALARP for both planned routine operations and unplanned events. Table 6-5 provides a description on how Woodside demonstrates different impacts and risks are ALARP based on their Decision Types identified.

Table 6-5: Summary of the criteria used for ALARP demonstration

Decision Type	Demonstration of ALARP Description
Decision Type A	Demonstrating ALARP for lower-order ('Type A') impacts or risks <ul style="list-style-type: none"> ▪ Identified regulatory, corporate and industry good practice controls are implemented, Woodside considers the impact or risk to be managed to ALARP and no further detailed engineering evaluation of controls is required. ▪ The application of feasible and readily implementable alternate, additional or improved controls may be adopted opportunistically when demonstrated to further reduce potential environmental impacts or risks.
Decision Type B	Demonstrating ALARP for higher-order ('Type B') impacts or risks <ul style="list-style-type: none"> ▪ In addition to relevant regulatory, corporate and industry good practice controls being implemented, alternate, additional or improved controls should be proposed and evaluated according to their feasibility, reasonableness and practicability to implement to further reduce the potential for impacts and risks associated with the activities ▪ Woodside applies a cost and benefit analysis when evaluating additional controls and applies those that are both feasible and where the cost (safety, time, effort and financial) are not grossly disproportionate to the potential reduction in environmental impact or risk afforded by the control.
Decision Type C	Demonstrating ALARP for highest-order ('Type C') impacts or risks <ul style="list-style-type: none"> ▪ Alternate, additional, or improved controls over and above relevant regulatory, corporate and industry good practice must be proposed and evaluated based upon a precautionary approach ▪ Woodside applies all feasible controls that have the potential to reduce environmental impacts and risks are implemented, when safe to do so and irrespective of the additional effort, time or financial cost associated with implementing the control.

When evaluating additional controls for higher order 'Type B' and 'Type C' impacts and risks, Woodside has applied the hierarchy of controls as defined below and illustrated in Figure 6-2:

- Eliminate – Remove the source preventing the impact; in other words, eliminate the hazard.
- Substitution – Replace the source preventing the impact.
- Engineer – Introduce engineering controls to prevent or control the source having an impact.
- Separate – Separate the source from the receptor preventing impact.
- Administrate – Procedures, competency and training implemented to minimise the source causing an impact.
- Pollution Control – Implement a pollution control system to reduce the impact.
- Contingency Planning – Mitigate control reducing the impact.
- Monitor – Program or system used to monitor the impact over time.

The general preference is to accept controls that are ranked in the Tier 1 categories of Eliminate, Substitute, Engineer and Separate as these controls provide a preventive means of reducing the likelihood of the hazard occurring over and above Tier 2 controls.

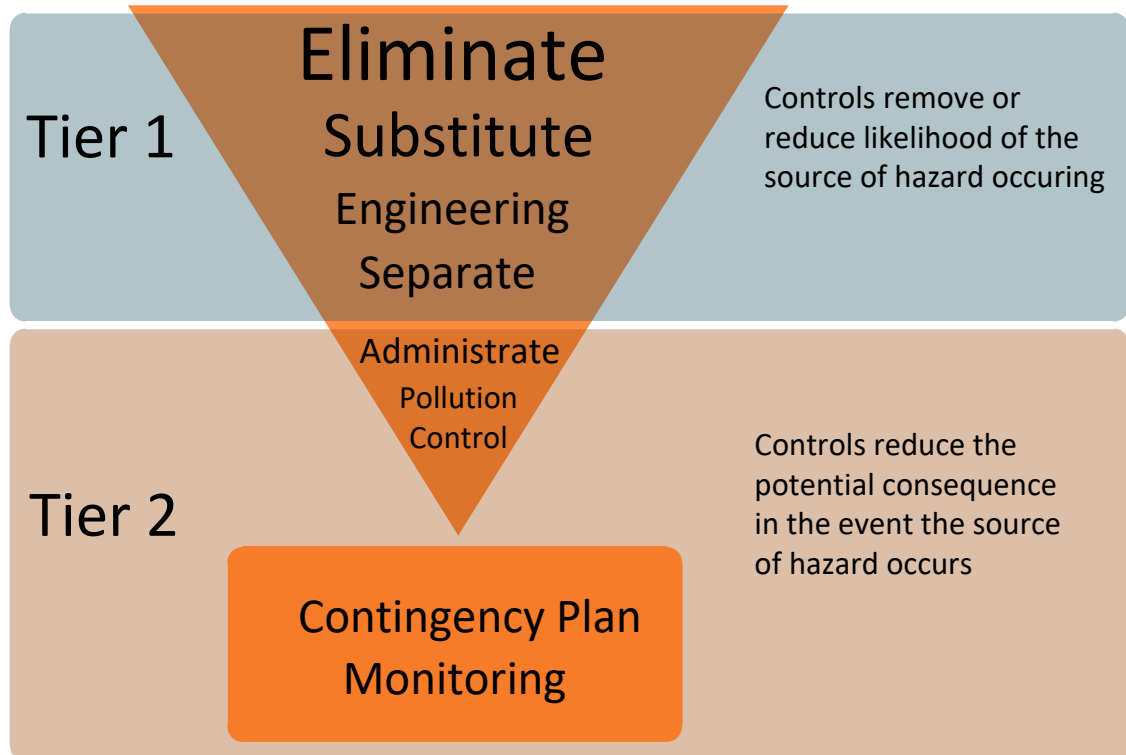


Figure 6-2: Hierarchy of control framework

6.2.2. Spill Response Strategy Effectiveness and ALARP evaluation

In developing the environmental performance standards that apply to each response strategy, Woodside has considered the level of performance that is reasonable to achieve for each control measure and the 'effectiveness' of the control measures.

The effectiveness of the control measures is assessed by considering:

- availability: the status of availability to Woodside
- functionality: a measure of functional performance
- reliability: the probability that the control will function correctly
- survivability: the potential of the control measure to survive an incident
- independence/compatibility: the degree of reliance on other systems and/ or controls, in order to perform its function.

These criteria follow the definitions in NOPSEMA's *Control Measures and Performance Standards Guidance Note* (NOPSEMA, 2020), with ranking provided in Table 6-6.

Table 6-6: Criteria for ranking spill response effectiveness

Evaluation Criteria	Response Effectiveness Ranking	
	Low	High
Availability	Woodside does not have equipment and resources on standby, or contracts, arrangements, and Memorandums of Understanding in place for providing equipment and resources. Woodside has internal processes and procedures in place to expedite timely provision of equipment and resources.	Woodside has equipment and resources on standby, or contracts, arrangements or Memorandums of Understanding in place for providing equipment and resources.
Functionality	Implementation of the control measure does not greatly reduce the risk and impact.	Implementation of the control measure has material difference in reducing the risk and impact.
Reliability	The control measure is not reliable (for example, has not been tried and tested in Australian waters) or low assurance can be given to its success rate and effectiveness.	The control measure is reliable (for example, has been tried and tested in Australian waters) or high assurance can be given to its success rate and effectiveness.
Survivability	The control measure has a low operating timeframe and will need to be replaced regularly throughout its operation period in order to maintain its effectiveness.	The control has a high operating timeframe and will not need to be replaced regularly throughout its operation period in order to maintain its effectiveness.
Independence / Compatibility	The control relies on other control measures being in place or the control measure is incompatible with other control measures in place.	The control does not depend on other control measures being in place or the control measure can be implemented in unison with other control measures.

Each control was then evaluated, considering the environmental benefit gained from implementation compared with its practicability (in other words, control effectiveness, cost, response capacity and implementation time) to determine if the control was either:

- accept and implement, or
- reject.

This traffic light system is used in the ALARP demonstration tables where the 'do nothing' option is rejected, along with a scalable option that generally involves mobilising spill response resources and equipment to site and on standby. Accepted controls in all the ALARP demonstration tables indicate those that would be implemented as part of the response.

Applying principles similar to those presented within the *Guidance on Risk Related Decision Making* (Oil and Gas UK, 2014), as described in Section 6.1 of this EP, Woodside has adopted the following criteria for determining spill response strategy preparedness that present a lower-order risk compared to those that present a higher-order risk:

A spill response strategy is determined to present a lower-order risk where all controls have been ranked as 'high' according to the criteria for ranking spill response effectiveness (These criteria follow the definitions in the *Control Measures and Performance Standards Guidance Note* (NOPSEMA, 2020), with ranking provided in Table 6-6 and additional controls would unlikely reduce potential environmental impacts and risks further. As such, Woodside has considered 'Type A' spill response strategies to be managed to ALARP.

A spill response strategy is determined to present a higher-order risk where one or more controls have been ranked as 'low' according to the criteria for ranking spill response effectiveness and additional controls would

likely reduce potential environmental impacts and risks further. As such, alternate, additional, or improved controls should be proposed in an attempt to increase their effectiveness ranking to 'high'. Where improved controls have been identified but are not readily available, an improvement plan has been developed to meet the oil spill response need before performing the activity.

Woodside's ALARP assessment for resourcing for each spill response strategy is presented within Appendix E.

6.3. Demonstration of Acceptability

Regulation 21(5)(c) of the Environment Regulations requires demonstration that the environmental impacts and risks of the activity will be of an acceptable (tolerable) level.

The demonstration of acceptability is completed independently of the ALARP evaluation described above. However, as with the demonstration of ALARP, the demonstration of acceptability detailed below applies the decision-making principles described in Section 6.1.1, ensuring consistency with the precautionary principle when considering the acceptable levels of impact and risk caused by the activity.

Demonstrating acceptability for lower-order ('Type A') and higher-order ('Type B') impacts or risks

When an impact or risk has been evaluated as 'lower-order' or 'higher-order' based upon the Decision Context detailed in Section 6.1.1, acceptability of the impact or risk is evaluated based upon the following criteria:

- Relevant regulatory, corporate and industry good practice controls have been identified and implemented, including consideration of relevant actions prescribed in recovery plans and approved conservation.
- The activity does not contravene any relevant Plan of Management for a World Heritage place, National Heritage place or Ramsar wetland identified within the EMBA.
- Any alternate, additional or improved controls adopted via the detailed engineering risk assessment have been or will be implemented to manage potential impacts and risks to ALARP.
- There are either no objections or claims made by relevant stakeholders for the aspect of the activity being assessed, or any objections or claims received from relevant stakeholders are assessed for merit and controls adopted to address the objections or claims where merited.
- Where industry good practice cannot be adopted, professional judgement made by subject matter experts have been used to evaluate the acceptability of potential environmental impact or risk based upon adoption of alternate, additional or improved controls identified during detailed engineering risk assessment.
- Consideration of relevant actions prescribed in listed species recovery plans, conservation advice and threat abatement plans have informed the development of control measures.
- The application of adopted controls clearly indicates the aspect-specific EPOs can be achieved.
- The proposed impact is consistent with the principles of ESD defined in Section 3A of the EPBC Act (Section 2.1.3), including:
 - Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations (the *'integration principle'*)
 - If there are threat of serious or irreversible damage lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (the *'precautionary principle'*)
 - The principle of intergenerational equity- that the present generation should ensure the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations (the *'intergenerational principle'*)
 - The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making (the *'biodiversity principle'*).

Demonstrating acceptability for highest-order ('Type C') impacts or risks

When an impact or risk has been evaluated as 'highest-order' based upon the Decision Context detailed in Section 6.1.1, the potential environmental impact or risk can only be deemed acceptable once the criteria for

'Type B' demonstration of acceptability detailed above has been met and any alternate, additional or improved controls adopted via implementing a precautionary approach (consistent with the 'Precautionary Principle' as defined within Section 3A of the EPBC Act) can demonstrate residual impacts have been lowered, such that a severity level of '4' becomes 'unlikely' or the severity level of '5' becomes 'highly unlikely' based upon the Woodside (PetDW) Risk Matrix (Table 6-2).

6.4. Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria

Regulation 21(7) of the Environment Regulations requires the EP provides appropriate environmental performance outcomes (EPOs), environmental performance standards (EPSs) and measurement criteria.

An objective of the EP is to confirm that all activities are carried out in accordance with appropriate EPSs thus ensuring EPOs are achieved. This requires (among other things) that appropriate measurement criteria for demonstrating that the EPSs have been met as defined within the EP.

Establishing outcomes and standards is a process that considers legal requirements, environmental risks (described in risk assessment presented Sections 7 and 8) control measures (Sections 7 and 8), and the views of interested parties (Section 5). The resulting outcomes and standards must be measurable where practicable and consistent with Woodside's Our Values.

6.4.1. Environmental Performance Outcomes

EPOs are developed to protect the environment from the impact or risk and to enable ongoing performance and measurability of the controls. These were developed using the below criteria:

- Be specific to the source of the hazard.
- Indicate how the environmental impact will be managed (for example, minimise or prevent).
- Contain a statement of measurable performance (where applicable).
- Contain a timeframe for action (where applicable).
- Be consistent with legislative and HSE requirements.

6.4.2. Environmental Performance Standards

An EPS is a statement of performance required of a control measure (a system, an item of equipment, a procedure or functional responsibility (person)), which is used as a basis for managing environmental impact and risk, for the duration of the activity.

There is a specific link between the EPOs, the EPSs and control measures; each EPO has one or more standards defining the performance requirement that needs to be met by a control measure to meet the EPO. EPSs detailed within this EP are specific, measurable, and achievable.

6.4.3. Environmental Measurement Criteria

MCs have been assigned for each EPS as a means of validating that each EPO and EPS will be or has been met throughout the duration of the petroleum activity, thus continually reducing environmental impacts and risks to ALARP and acceptable levels.

All MCs are designed to be inspected or audited via compliance assurance activities and enable a traceable record of performance to be maintained.

EPOs, EPSs, and MCs, both in relation to planned activities and unplanned events, have been detailed throughout Sections 7 and 8.

EPOs, EPSs, and MCs relating to oil spill response preparedness and the effectiveness of the response strategy implementation are provided in Section 9.

EPOs, EPSs, and MCs relating to Incident Management Team (IMT) capability and competency are detailed within Appendix E.

7. Environmental Impact Assessment: Planned Activities

The purpose of this Section is to address the requirements of regulations 21(5) and 21(6) by providing an assessment and evaluation of all the identified impacts associated with the petroleum activity and associated control measures that will be applied to reduce the impacts to ALARP and an acceptable level.

Table 7-1 summarises the impact analysis for the aspects associated with the planned activities. A comprehensive risk and impact assessment for each of the planned activities, and subsequent control measures proposed by Woodside to reduce the impacts and risks to ALARP and acceptable levels, are detailed in the subsections.

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Table 7-1: Summary of the environmental impact analysis for planned activities

Aspect	Value Potentially at Risk / Impact														Risk Assessment & Evaluation			
	Environmental								Socio-Economic									
	Marine Mammals	Marine Reptiles	Fish	Seabirds / Shorebirds	Seabed / Benthic Habitat	Water Quality	Air Quality	Marine Protected Areas	Key Ecological Features	Commercial Fisheries	Shipping Activities	Cultural Features and Heritage Values	Tourism / Recreation	Onshore (Indirect Impacts)	Severity Factor	Likelihood Factor	Residual Risk	Acceptability
Physical Presence (Section 7.1)																		
Presence of project vessels									x	x	x			30	N/A	-	Tolerable	
Presence of subsea infrastructure									x	x	x			10	N/A	-	Tolerable	
Seabed Disturbance (Section 7.2)																		
Subsea infrastructure recovery				x				x			x			10	N/A	-	Tolerable	
ROV operations				x				x						10	N/A	-	Tolerable	
Decommissioning surveys				x				x						10	N/A	-	Tolerable	
Light Emissions (Section 7.3)																		
Routine light emissions from project vessel operations	x	x		x							x			10	N/A	-	Tolerable	
Noise Emissions (Section 7.4)																		
Routine noise emissions from project vessels and infrastructure recovery operations	x	x	x								x			30	N/A	-	Tolerable	
Routine noise emissions from helicopters	x	x	x	x										10	N/A	-	Tolerable	
Routine noise emissions from acoustic survey equipment	x	x	x								x			10	N/A	-	Tolerable	

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Aspect	Value Potentially at Risk / Impact														Risk Assessment & Evaluation			
	Environmental									Socio-Economic					Severity Factor	Likelihood Factor	Residual Risk	Acceptability
	Marine Mammals	Marine Reptiles	Fish	Seabirds / Shorebirds	Seabed / Benthic Habitat	Water Quality	Air Quality	Marine Protected Areas	Key Ecological Features	Commercial Fisheries	Shipping Activities	Cultural Features and Heritage Values	Tourism / Recreation	Onshore (Indirect Impacts)				
Atmospheric Emissions (Section 7.5)																		
Exhaust emissions from internal combustion engines and incinerators on project vessels and helicopters							x								10	N/A	-	Tolerable
Vessel and Subsea Discharges (Section 7.6)																		
Routine discharges from project vessels						x									10	N/A	-	Tolerable
Operational discharges during subsea infrastructure recovery				x	x										10	N/A	-	Tolerable
Waste Management (Section 7.7)																		
Waste generated by project vessel operations														x	10	N/A	-	Tolerable
Recovered subsea infrastructure														x	10	N/A	-	Tolerable

7.1. Physical Presence

7.1.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Physical Presence	Presence of project vessels during the petroleum activity.	Interference with or displacement of other marine users (e.g., commercial shipping, commercial fishing and/ or other third-party vessels).	30	N/A	-	Type A Low Order Impact	Tolerable
	Presence of subsea infrastructure		10	N/A	-	Type A Low Order Impact	Tolerable

7.1.2. Source of Risk

7.1.2.1. Project Vessels

Project vessels will be present within the operational area during removal activities and during any field management activities (if required). The subsea infrastructure removal activities will be undertaken using a MCV, with no support vessels required. The subsea infrastructure removal activities are expected to require the MCV to be in the operational area for 30–60 days, contingent on weather conditions or unforeseen circumstances. Field management activities are expected to be undertaken by a single vessel (if required). Field management activities are not expected to be required; however, such activities are typically of short duration (< 7 days in the operational area).

The MCV will be continually operating 24-hours a day, seven days a week for the duration of the subsea infrastructure removal activities. The MCV will leave the operational area as required to return to port to offload recovered subsea infrastructure, receive provisions, and change out crew.

The physical presence of the vessels in the operational area has the potential to cause interference with or displacement of other marine users, including commercial shipping and commercial fishing.

The operational area consists of a 1 km wide corridor extending around the Minerva subsea infrastructure to the Commonwealth-State waters boundary (refer to Figure 3-5). A 500 m cautionary zone will also exist around the MCV for the duration of the activity.

7.1.2.2. Minerva Subsea Infrastructure

The presence of the Minerva subsea infrastructure on the seabed may interfere with, or displace, the activities of trawl fishers. There are gazetted 500 m radius PSZs around the Minerva-3 and Minerva-4 wellheads, which prohibit unauthorised entry into the PSZs. Woodside intends to apply for the PSZs to be extinguished following the conclusion of the activities described in the Minerva Plug and Abandonment EP and this EP.

The Minerva subsea infrastructure has been in place for over 20 years and is shown on current nautical charts issued by the AHO. The Minerva pipeline bundle is largely buried.

7.1.3. Environmental Impact Assessment

7.1.3.1. Commercial Shipping

The main shipping channel for vessels (e.g., cargo tankers) travelling between major Australian and foreign

ports is located south of the operational area, about 75 km south of Warrnambool. This shipping channel is used by over 1,000 vessels per year, or about 3-4 vessels per day.

The subsea infrastructure removal activities and field management activities (if required) are short in duration and the potential for disruption to commercial shipping is negligible given most commercial vessel traffic is beyond the operational area (Figure 4-23). If a commercial vessel did travel through the operational area, impacts to the vessel would be limited to a short-term displacement (i.e., deviating around the vessel undertaking the petroleum activity) when subsea infrastructure removal activities or field management activities are being undertaken.

The physical presence of the subsea infrastructure on the seabed will not impact upon commercial shipping. Given the very low levels of commercial shipping in the operational area, the relatively short-term presence of vessels undertaking the petroleum activity, and the negligible consequence to commercial shipping, the impact of the presence of vessels undertaking the petroleum activity on commercial shipping is minor (severity level 1).

7.1.3.2. Commercial Fishing

Several Commonwealth- and Victorian-managed fishery boundaries overlap the operational area (Table 4-11); however, only a few have historically been active in the operational area and hence may be impacted by the physical presence of vessels and subsea infrastructure. An analysis of the current fishery spatial and temporal, depth range of activity, historical fishing effort data, fishing methods (Table 4-11) and consultation feedback (Section 4) indicated that there is a low potential for active commercial fisheries in waters where the operational area is located.

The physical presence of vessels undertaking subsea infrastructure removal or field management activities is relatively short duration. Commercial fishing vessels may be displaced from part the operational area when vessels undertaking the petroleum activity are present, however this would credibly affect a very small number of commercial fishers (if any). Such a displacement is not expected to cause any impacts to commercial fishers.

The presence of the Minerva subsea infrastructure on the seabed may result in impacts to commercial fishers. Gazetted petroleum safety zones (PSZs) extend 500 m around the Minerva-3 and Minerva-4 wellheads since 2003, within which commercial fishing is prohibited. Trawl fishing may avoid the subsea infrastructure to avoid gear becoming snagged on the infrastructure, however there are no active demersal trawl fisheries within the operational area. Scallop dredges may interact with the Minerva subsea infrastructure; however, no scallop fishing has occurred in recent years in the vicinity of the operational area, with effort occurring east of the operational area around Lakes Entrance and Welshpool (Seafood Industries Victoria, n.d.).

Fish may aggregate around the Minerva subsea infrastructure, which provides relatively complex vertical relief in an area characterised by unconsolidated sandy sediments. However, examination of fishing activity (Section 4.6.2) and consultation with commercial fishers (Section 5 and Appendix F) indicated that commercial fishers were not targeting fish assemblages associated with the Minerva subsea infrastructure. Removal of the Minerva subsea infrastructure may provide additional opportunities for demersal trawling and scallop dredging; however, this is expected to yield negligible benefit as these gear types have not historically been used in the vicinity of the operational area. Hence, the removal of the Minerva subsea infrastructure is not expected to result in any impacts to commercial fishers.

7.1.3.3. Oil and Gas

Beach Energy (Operations) Limited (Beach) plans to undertake the Offshore Gas Victoria Geophysical and Geotechnical Seabed Survey, which partially overlaps the operational area. The access agreement between Woodside and Beach prevents Beach from undertaking the geophysical and geotechnical survey in the operational area when Woodside is undertaking removal of the Minerva subsea infrastructure or field management activities. Woodside and Beach will liaise to ensure Minerva subsea infrastructure removal and field management activities do not result in impacts to Beach's planned survey.

Woodside is not aware of any other petroleum activities that would credibly be impacted by the physical presence of vessels and subsea infrastructure.

7.1.3.4. Tourism

Consultation indicated no tourism activities (e.g., charter fishing, whale-watching etc.) occur in the operational area, hence there is negligible potential for such activities to be displaced from the operational area. Vessels undertaking the petroleum activity may be observable from shore, however the distance of the operational area from shore (4.9 km) means that the vessel will not be conspicuous and would only be present for relatively short durations. As such, no impacts to tourism are expected to occur.

7.1.3.5. Cultural Features and Heritage Values

The physical presence and movement of project vessels within the operational area has the potential to displace other marine users. Vessels undertaking the petroleum activity may be observable from shore, however the distance of the operational area from shore (4.9 km) means that the vessel will not be conspicuous and would only be present for relatively short durations. Consultation and literature review indicated the importance of connection to coastal and marine areas. The physical presence of project vessels and associated potential for displacement of marine users has the potential to impact cultural features and heritage values through the following ways:

- Cultural obligations to care for Country: Environmental impacts may be assumed to impact rights and obligations to care for Sea Country. Exclusion of Traditional Custodians from Sea Country (e.g., by restricting access) or decision-making processes (e.g., by not conducting ongoing consultation) are other potential sources of impact. Access to areas within the Operational Area may be limited where exclusion zones are established around vessels for safety purposes.
- Knowledge of Country/customary law and transfer of knowledge: Direct impact to communities practicing these skills will inherently occur when relevant aspects of the environment disappear, are displaced or suffer a reduction in population. Therefore, the transmission of these skills is expected to be impacted where there are impacts at the species/population level. Limitations on access to sites or disruption/relocation of First Nations communities may have implications for the preservation of First Nations knowledge. Access to areas within the Operational Area may be limited where exclusion zones are established around vessels for safety purposes.
- Connection to Country: Where people are displaced or disrupted (e.g., during colonisation) or where there is a loss of technical skills or environmental knowledge this may damage connection to Country (McDonald and Phillips, 2021). No impacts of this type are anticipated.
- Access to Country: Impacts to access to Country may be classified as temporary (e.g. where exclusion zones exist around activities for safety reasons) or permanent (e.g. where infrastructure obstructs access or navigation). Impacts to access to Country can only occur in areas that were traditionally accessed by Traditional Custodians. As described in Section 4.6.1.5, this is anticipated to be focussed on areas adjacent to the coast. Access to areas within the Operational Area may be limited where exclusion zones are established around vessels for safety purposes.

7.1.4. Demonstration of As Low As Reasonably Practicable

The physical presence of vessels and the Minerva subsea infrastructure for the duration of the petroleum activity is considered a 'Type A' (lower order) impact based upon the decision context described in Section 6.1.1.

The ALARP process performed for the environmental aspect is summarised in Table 7-2. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable.

Table 7-2: Physical Presence – ALARP Assessment Summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Separate			
Establishment of a safety exclusion zone around MCV vessel and communicated to marine users.	Accept	Establishment of a 500 m cautionary zone around MCV reduces the likelihood of interaction with other marine users. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.2
Administrate			
Project vessel compliant with relevant navigation safety requirements under the <i>Navigation Act 2012</i> and subsidiary Marine Orders.	Accept	Legislative requirements to be followed which reduces the risk of third-party vessel interactions due to ensuring safety requirements are fulfilled and other marine users are aware of the presence of the project vessels. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.1
Eliminate or reduce the exclusion zone around the vessels.	Reject	Reduces the area of displacement of other marine users; however, the size and implementation of the exclusion zone is a requirement for safe operations and cannot be reduced, therefore the control is not feasible.	-
Manage the timing of the petroleum activity to avoid sensitive / peak marine user periods.	Reject	Activities by other users that may be impacts by the physical presence of vessel do not have seasonal peaks in activity. Consultation with relevant persons did not identify any seasonal peaks, nor did any relevant persons request Woodside alter the timing of the petroleum activity to mitigate impacts from the physical presence of vessels. Constraining the timing of the vessel activities would pose a risk to complying with the requirements of General Direction 831. There is no apparent reduction in the impact of the physical presence aspect from	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
		constraining the timing of the petroleum activity. Hence, the control has no benefit and is rejected.	
Notify AHO prior to commencing equipment removal or field management activities.	Accept	Notification to the AHO will enable them to issue a notice to mariners (if required), thereby reducing the likelihood of interaction with other marine users. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.3
Notify AMSA JRCC prior to commencing equipment removal or field management activities.	Accept	AMSA JRCC requested that Woodside notify them of vessels commencing petroleum activities prior to commencement. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.4
Notify relevant fishing industry government departments, representative bodies, and licence holders, of activities prior to commencement and upon completion of equipment removal or field management activities.	Accept	Communicating the activities to fishing industry stakeholders makes them informed and aware, thereby reducing the likelihood of displacing other marine users. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.5
Provide updates on the petroleum activity to relevant persons as requested during consultation for the preparation of the EP (refer to Sections 5 and 9.10.1).	Accept	Communicating the petroleum activities to relevant persons makes them informed and aware, thereby reducing the likelihood of their functions, interests, and activities being impacted by the petroleum activity. Benefits outweigh cost/sacrifice. Control is also Standard Practice.	PS 1.6
Notify DoD prior to commencing equipment removal or field management activities.	Accept	Notification was requested by DoD during consultation. Communicating the activities to other marine users makes them informed and aware, thereby reducing the likelihood of interfering with other marine users. Control is feasible, standard practice with minimal cost.	PS 1.7

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		Benefits outweigh any cost sacrifice.	
Establish and maintain a publicly available interactive map which provides relevant persons with updated information on activities being conducted as part of the petroleum activity.	Accept	Interactive map provides additional alternative method for marine users to obtain information on the timing of activities, thereby reducing the likelihood. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.8

7.1.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 7-2) that, when implemented, are considered to manage the impacts of the physical presence of the project vessels and subsea infrastructure on other marine users to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential for interaction with other marine users associated with the physical presence of the project vessels and subsea infrastructure. Additional control measures were identified in Table 7-2 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

7.1.5. Demonstration of Acceptability

Given the adopted controls, the physical presence of the project vessels and subsea infrastructure will not result in potential impacts greater than temporary and minor displacement of other marine users, such as commercial shipping and fisheries. Further opportunities to reduce the impacts have been investigated in Table 7-2.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the physical presence of the project vessels and subsea infrastructure within the scope of this EP have been raised by relevant stakeholders. The environmental impacts meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside’s deliberations. Woodside’s decommissioning strategy integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The physical presence aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The physical presence aspect will not impact upon the environment such that future generations cannot meet their needs. All Minerva subsea infrastructure will be removed, and reasonably foreseeable future uses of the environment will be precluded.
- Biodiversity principle: The physical presence aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.1.6. Environmental Performance Outcomes, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 1</p> <p>No unplanned interactions between the project vessels and other marine users.</p>	<p>C 1.1</p> <p>Project vessel compliant with relevant navigation safety requirements under the <i>Navigation Act 2012</i> and subsidiary Marine Orders.</p>	<p>PS 1.1</p> <p>Project vessel compliant to the navigation safety requirements, including:</p> <ul style="list-style-type: none"> ▪ Marine Order 27 – Safety of navigation and radio equipment, which gives effect to parts of the International Convention for the Safety of Life at Sea, 1974 (SOLAS Convention) ▪ Marine Order 30 – Prevention of collisions, which gives effect to parts of the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGS) ▪ Marine Order 31 – SOLAS and non-SOLAS certification, which gives effect to parts of the SOLAS Convention ▪ Marine Order 63 – Vessel reporting systems, which gives effects to parts of the SOLAS Convention ▪ Marine Order 70 – Seafarer certification, which gives effect to parts of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Convention) 	<p>MC 1.1.1</p> <p>Marine assurance inspection records demonstrate compliance with relevant navigation safety requirements under the <i>Navigation Act 2012</i> and subsidiary Marine Orders.</p>
	<p>C 1.2</p> <p>Establishment of a safety exclusion zone around project vessels and communicated to marine users.</p>	<p>PS 1.2</p> <p>A 500 radius safety exclusion zone established around vessels undertaking the petroleum activity, to be enforced by vessels undertaking the petroleum activity.</p>	<p>MC 1.2.1</p> <p>Records demonstrate breaches by unauthorised vessels within the petroleum safety zone are recorded.</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<p>C 1.3</p> <p>Notify AHO prior to commencing equipment removal or field management activities.</p>	<p>PS 1.3</p> <p>AHO notified at least four weeks prior to undertaking equipment removal or field management activities.</p>	<p>MC 1.3.1</p> <p>Consultation records demonstrate that AHO has been notified at least four weeks prior to commencement of equipment removal or field management activities.</p>
	<p>C 1.4</p> <p>Notify AMSA JRCC prior to commencing equipment removal or field management activities.</p>	<p>PS 1.4</p> <p>AMSA JRCC notified at least 24-48 hrs prior to undertaking equipment removal or field management activities.</p>	<p>MC 1.4.1</p> <p>Consultation records demonstrate that AMSA JRCC has been notified at least 24-48 hrs prior to commencement of equipment removal or field management activities.</p>
	<p>C 1.5</p> <p>Notify relevant fishing industry government departments, representative bodies, and licence holders, of activities prior to commencement and upon completion of activities.</p>	<p>PS 1.5</p> <p>The following fishery-related government departments, industry bodies, and licenced fishers notified prior to commencement and upon completion of activities:</p> <ul style="list-style-type: none"> ▪ government departments: AFMA, DAFF, and VFA ▪ industry representative bodies: CFA and SIV ▪ Commonwealth licenced fishers in the Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery <p>Victorian licenced fishers that have requested notifications during consultation facilitated by SIV</p>	<p>MC 1.5.1</p> <p>Consultation records demonstrate that the following government departments and industry representative bodies have been notified prior to commencement and upon completion of activities:</p> <ul style="list-style-type: none"> ▪ government departments: AFMA, DAFF, and VFA ▪ industry representative bodies: CFA and SIV ▪ Commonwealth licenced fishers in the Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery <p>Victorian licenced fishers that have requested notifications during consultation facilitated by SIV</p>
	<p>C 1.6</p> <p>Provide updates on the petroleum activity to relevant persons as requested during</p>	<p>PS 1.6</p> <p>Relevant persons provided updates on the petroleum activity as requested during</p>	<p>MC 1.6.1</p> <p>Consultation records confirm relevant persons provided updates on the petroleum activity as requested.</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	consultation for the preparation of the EP (refer to Sections 5 and 9.10.1).	consultation for the preparation of the EP (refer to Sections 5 and 9.10.1)..	
	<p>C 1.7</p> <p>Notify DoD prior to commencing equipment removal or field management activities.</p>	<p>PS 1.7</p> <p>The DoD is notified at least five weeks prior to commencing equipment removal or field management activities.</p>	<p>MC 1.7.1</p> <p>Records demonstrate DoD were notified at least five weeks prior to commencing equipment removal or field management activities.</p>
	<p>C 1.8</p> <p>Establish and maintain a publicly available interactive map which provides relevant persons with updated information on activities being conducted as part of the petroleum activity.</p>	<p>PS 1.8</p> <p>Activity interactive map established and maintained throughout activities.</p>	<p>MC 1.8.1</p> <p>Records demonstrate interactive map was provided and available to relevant persons throughout activities.</p>

7.2. Seabed Disturbance

7.2.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Seabed disturbance	Subsea infrastructure removal and field management activities.	Disturbance of benthic habitats. Reduction in water quality from sediment resuspension.	10	N/A	-	Type A Low Order Impact	Tolerable
	ROV operations		10	N/A	-	Type A Low Order Impact	Tolerable
	Decommissioning environmental surveys		10	N/A	-	Type A Low Order Impact	Tolerable

7.2.2. Source of Risk

7.2.2.1. Subsea Infrastructure Removal and Field Management Activities

Minerva subsea infrastructure removal and field management activities may disturb the seabed. Activities that may result in seabed disturbance include:

- deburial of the pipeline bundle, spools, flying leads, and subsea structures
- removal of the Minerva subsea infrastructure from the seabed
- placing temporary equipment on the seabed during infrastructure removal and field management activities, such as recovery baskets and clump weights (all of which will be recovered)
- marine growth removal from the Minerva subsea infrastructure.

The estimated seabed disturbance footprint from subsea infrastructure removal activities is provided in Table 7-3. The Minerva subsea infrastructure is not deeply buried. ROV surveys of the Minerva subsea infrastructure show that it is not deeply buried, hence the depth of deburial not expected to be substantial (typically < 1 m).

Deburial of subsea infrastructure will be done using a mass flow excavator, which will direct a jet (or jets) of water on the area requiring deburial. This mobilises the sediments, which become entrained in the water jet and displaced. For sandy sediments typical of the Minerva field, sediments displaced by a mass flow excavator are expected to be deposited within 10's of metres of the mass flow excavator. Finer sediments may be transported further due to their lower settling velocities, however sediments in the Minerva field are typically > 98% sand-sized or larger particles (Figure 4-4).

Infrastructure may be temporarily wet parked on the seabed (within the timeframe of the activity campaign), resulting in an additional seabed disturbance. The disturbance footprint from wet-parked equipment will depend on the size of the equipment; refer to Table 3-8 for details on equipment sizes.

Table 7-3: Descriptions of subsea infrastructure recovery activities

Recovery Activity	Approximate Disturbance Footprint
Pipeline Bundle	9,800 m ²
Rigid spools	1,050 m ²
Subsea structures	710 m ²
Secondary stability structures	260 m ²
Total disturbance footprint	11,820 m ²

7.2.2.2. ROV Operations

A work class ROV will be used during subsea infrastructure removal activities and may be required for field management activities (e.g., general visual inspection (GVI)). ROV operations may result in seabed disturbance due to sediment resuspension from thruster use and temporary contact between the ROV and the seabed. ROV operations will primarily occur within the disturbance footprint of subsea infrastructure removal, hence there is not expected to be any net increase in disturbance footprint from ROV operations.

7.2.2.3. Decommissioning Environmental Survey Activities

An as-left survey will be undertaken as part of decommissioning activities. The survey is intended to confirm that all infrastructure has been removed, identify any debris / dropped objects for retrieval, and assess seabed condition. The proposed as-left survey will include a GVI and sediment sampling. The total area of seabed disturbance for this activity is expected to be less than 10 m².

7.2.3. Environmental Impact Assessment

7.2.3.1. Benthic Habitat

Benthic habitat throughout the operational area is largely unconsolidated sandy sediment with sparse epibenthic biota and infauna. The water depth in the operational area is typically > 50 m. There is no evidence of benthic primary producer habitat, such as seagrass, macroalgae, or zooxanthellate corals, in the operational area. Benthic habitats along the pipeline bundle route are characterised by unconsolidated sandy sediments, which are mobile (e.g., burial of the pipeline bundle over time, changes in the burial state of the pipeline bundle between surveys etc.). Such habitat is widely represented in the region and is not particularly unique or sensitive to disturbance.

Approximately 11,820 m² of benthic habitat will be directly disturbed within the footprint of the Minerva subsea infrastructure. Benthic habitat within the footprint was previously disturbed during the installation of the Minerva subsea infrastructure in 2003. Unconsolidated sandy sediment habitat above and adjacent to the equipment requiring deburial prior to removal (e.g., pipeline bundle and spools) will be substantially disturbed, with all sessile biota in this disturbance footprint likely to be lost. Given the widespread nature of similar habitat in the region, ecosystem function will not be substantially altered by this impact to benthic habitat.

Recovery of disturbed unconsolidated sandy sediment habitat within the disturbance footprint will occur naturally over time. There is evidence of natural bedload sediment transport (e.g., burial of the pipeline bundle following installation and very low portion of fine sediments), which will infill any depressions in the seabed over time. Recovery of ecological communities in sandy benthic habitats is expected to occur within one year (e.g., Dernie et al., 2003a, 2003b).

7.2.3.2. Water Quality

Seabed disturbance may result in the resuspension of sediments, resulting in an increase in turbidity. Sediments in the Minerva field consist almost entirely of sand-sized or larger particles, which have relatively high settling velocities compared to silt- and clay-sized particles. Most resuspended sediments will settle within seconds to minutes of being resuspended and within 10's of metres of the resuspension location.

Sediment sampling for potential contaminants found no evidence of sediment contamination in the Minerva field (Section 4.3.2), hence seabed disturbance will not remobilise contaminated sediments.

Benthic communities associated with the unconsolidated sandy habitat in the Minerva field are characterised by filter- and deposit-feeding epifauna and infauna assemblages. Increased turbidity may impact upon these communities by reducing feeding efficiency. These communities are likely to be adapted to natural increases in turbidity, such as those shown near the seabed in Figure 4-8. The widespread nature of similar habitat in the region means such communities are likely to be well-represented. Hence, the impacts to water quality from seabed disturbance will be temporary and localised.

7.2.3.3. Marine Fauna

Highly mobile demersal fauna, such as fishes, can move away from areas of disturbance and may be attracted to deburial and marine growth removal activities as prey (e.g., infauna) may be more readily available. Fauna that are not readily mobile, such as sessile benthic epifauna and infauna, will be lost within the disturbance footprint. Most of the disturbance footprint is associated with the pipeline bundle. There are no active fisheries in the operational area that target sessile benthic fauna (e.g., scallops); hence no indirect impacts to fisheries will occur due to any loss of sessile benthic fauna.

Marine fauna assemblages associated with disturbed habitat are expected to recover through natural processes over time. Based on the changes in benthic habitat and burial status of the pipeline bundle between inspections in 2014 and 2021, the timeframe for recovery of fauna from benthic habitat disturbance is expected to be less than seven years.

The removal of structures providing relatively complex relief habitat may displace site-attached fauna, such as fishes and crustaceans. Complex hard substrate habitat, such as that provided by the Minerva subsea infrastructure, is uncommon in the operational area. There will be a reduction in biodiversity because of the removal of the Minerva subsea infrastructure, with the footprint returning to a natural, pre-construction state over time.

7.2.3.4. Cultural Features and Heritage Values

Archaeological Sites

As described in Section 4.6.1.5, there is overlap between the operational area and the ancient landscape between the mainland and ~130 m water depth and thus there is the potential that Indigenous cultural features may exist on the seabed. These may potentially be disturbed by removal of infrastructure and placement of supporting equipment on the seabed. While no cultural features have been identified in the operational area, further archaeological studies will be undertaken prior to the activity commencing to understand any potential cultural features. There are no Aboriginal cultural heritage places within the operational area (Section 4.6.1.5).

Benthic Habitats and Marine Fauna

Through consultation and review of available literature (Section 4.6.1.5), Woodside understands that benthic habitats (e.g., seagrass) and marine fauna (e.g. whales, eels) that may be affected by seabed disturbance, are culturally important to Traditional Custodians. Traditional Custodians value these habitats and species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact dugong or turtle populations and their marine environment may have an indirect impact on some Indigenous communities if they deplete hunting areas and threaten local food security (Delisle et al., 2018). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes results in reduced sightings (e.g., through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO, 2003).

As described in the environmental impact assessment (Section 7.2.3.3), potential impacts to marine fauna are predicted to be at an individual level, which are not considered to be ecologically significant at a population level. Impacts are not expected to occur to significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

Whilst seagrass was identified as culturally important during consultation, there is no evidence of benthic primary producer habitat, such as seagrass, in the operational area (Section 7.2.3.1).

Intangible Cultural Heritage

- Songlines: Songlines can become lost, fragmented, or broken when there is a loss of Country or forced removal from Country (Neale and Kelly, 2020). Physical sites that have been identified as comprising a component of a songline are important to protect to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. It is noted that oil and gas infrastructure exists in many areas of the Otway Basin, and that songlines are still acknowledged and recognised. It is inferred that if there were to be any impacts to surviving songlines these would be significantly more likely to be described as qualitative (i.e., “weaken” a songline) rather than binary or absolute (i.e., destroy a songline).
- Management of intangible cultural heritage can include reducing impacts and risks to environmental features that are associated with intangible cultural heritage (UNESCO 2003; ICOMOS 2013). Impacts to marine plants, animals and other cultural features associated with songlines might impact the intergenerational transmission of knowledge of songlines when individuals can no longer witness or interact with the cultural features tied to songlines on Country. Therefore, managing songlines may require environmental controls protecting species at a population level, including migratory routes. Refer to species specific assessment in Section 7.2.3.3.
- Physical features comprising a component of a songline are important to protect to prevent the fragmenting or breaking apart of songlines and loss of sacred cultural knowledge. Songlines can become lost, fragmented, or broken when there is a loss of Country or impact to culturally important physical features (Neale and Kelly 2020:30). No specific details of songlines within the EMBA have been provided by relevant persons during consultation for this Activity, and no landforms typical of songlines (e.g., mountains, rivers, caves, and hills (Higgins 2021)) are anticipated to be impacted by the seabed disturbance associated with the petroleum activity.
- Creation/dreaming sites; sacred sites; ancestral beings: Activities that physically alter landscape features may be assumed to potentially impact values of creation/dreaming sites, sacred sites or ancestral beings. A review of relevant literature has been undertaken (Section 4.6.1.5) which has identified creation, dreaming and ancestral narratives related to the sea more broadly without confirming where (if anywhere) these overlap the EMBA. These references are of a general nature, and do not identify any features or values requiring specific protection or management from seabed disturbance.
- Ceremonial sites: Activities that prevent the performance of ceremony at these sites will directly impact its values. No direct impacts to ceremonial sites are anticipated from seabed disturbance. However, indirect impacts may occur where ceremonies cannot be performed due to limitations on access, loss of knowledge or impacts to the environment, which are further described below.
- Kinship systems and totemic species: It is assumed that marine species may have kinship/totemic relationships to Traditional Custodians, but it is understood that these relationships do not prohibit people outside of that “skin group” from hunting or eating that same species (Juluwarlu 2004). It is therefore inferred that the management of totemic or kinship species applies at the species/population level and not to individual plants and animals. Individuals may have kinship to specific species (Smyth 2008, Juluwarlu 2004) and/or a responsibility to care for species (Muller 2008). These relationships are understood to impose obligations on Traditional Custodians. It is understood that these obligations do not impose restrictions on other people generally, but it is considered that impacts to species at a population level may inhibit Traditional Custodians with kinship relationships’ ability to perform their obligations where this results in reduced or displaced populations. It is therefore considered that the management of totemic or kinship species applies at the species/population level and not to individual plants and animals. Impacts from seabed disturbance on marine fauna are described in Section 7.2.3.3. Impacts to individual marine fauna is not expected to impact on the totemic or kinship cultural connection.
- Resource collection: A suite of marine species have been identified through consultation and literature as important resources, particularly as food sources. In addition to their immediate value as sustenance, the

gathering and preparation of these resources are informed by cultural knowledge, and an inability to use these resources may result in a loss of ability to transfer that knowledge to future generations. Direct impact to communities using these resources will inherently occur when the resource disappears, is displaced, or suffers a reduction in population. Therefore, these communities may be impacted where there is an impact at the species/population level. Impacts from seabed disturbance on marine resources are described in Section 7.2.3.1 and 7.2.3.3. Impacts that result in population effects (e.g., population decline, changes in migration routes, etc) are not expected.

7.2.4. Demonstration of As Low As Reasonably Practicable

The benthic habitat disturbance created by the retrieval of subsea infrastructure within the operational area during the petroleum activity is considered a ‘Type A’ (lower order) impact based upon the decision context described in Section 6.1.1.

The ALARP process performed for the environmental aspect is summarised in Table 7-4. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable. The result of this ALARP assessment contributes to the overall acceptability of the impact or risk.

Table 7-4: Seabed Disturbance – ALARP Assessment

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Eliminate</i>			
No planned anchoring.	Accept	Anchoring the MCV in water depths of the operational area would require substantial anchor chain to be deployed, resulting in disturbance to benthic habitats. While anchoring would reduce combustion emissions associated with use of the DP system, the additional time required to deploy and recover anchors would substantially extend the duration of the activity. Reliable vessel station-keeping provided by DP is critical for the safety of subsea infrastructure removal and field management activities. The control delivers an environmental benefit	PS 2.1
No sediment relocation prior to subsea infrastructure retrieval.	Reject	Although this would result in slightly less seabed disturbance, it would also result in a lack of visual identification of infrastructure including cut points and lifting points for safe retrieval. Additional materials might also be missed if covered in sediment. Cost is grossly disproportionate to the environmental benefit.	-
Do not undertake sediment sampling as part of environmental survey.	Reject	The area of seabed disturbed by sediment sampling is very small relative to the removal activities. Woodside may require analysis of sediments to demonstrate the requirements of section 270 of the OPGGS Act have been met. Cost is grossly disproportionate to the environmental benefit.	-
No wet parking of infrastructure	Reject	The disturbance footprint of wet parking is relatively small. Wet-parked items will be placed close to their original position, and hence will be parked on benthic habitat that has been disturbed during removal. Wet parking can result in more efficient removal, shortening the overall duration of the Minerva subsea infrastructure removal activities, which	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>may reduce environmental impacts such as displacement of other users.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	
Abandon equipment in situ.	Reject	<p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ would preserve benthic habitats associated with the Minerva subsea infrastructure, which some stakeholders may perceive as beneficial due to the increase in biodiversity and abundance.</p> <p>Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-
Engineering			
Use alternative deburial method (e.g., ploughing) to reduce seabed disturbance footprint.	Reject	<p>Alternative deburial tools to the mass flow excavator, such as and ploughing, result in similar impacts to benthic habitats, hence there is no difference in benthic habitat disturbance. The mass flow excavator is better suited to working in proximity to infrastructure than ploughs, and ploughing may result in pipeline damage that prevents recovery, increased debris, or detachment of the piggyback clamps.</p> <p>Control does not result in any environmental benefit.</p>	-
Level seabed disturbed by decommissioning activities	Reject	<p>The seabed could be levelled to reduce or eliminate changes in height of the seabed. This is typically done by a vessel dragging a bar or chain along the seabed to redistribute and level sediments.</p> <p>Levelling of the seabed would result in resuspension of sediments and would likely damage benthic habitats beyond the disturbance footprint.</p> <p>The unconsolidated sandy sediments in the disturbance footprint are mobile, and hence sediments will naturally be redistributed to fill any depressions and level any mounds created during subsea infrastructure removal or field management activities.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-
Administrate			
Additional environmental monitoring of the	Reject	<p>An environmental survey has been completed in 2021, with results summarised in Sections 4.3 and 4.4.</p> <p>Concentrations of potential contaminants in the Minerva</p>	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
seabed before the petroleum activity to assess any impacts to the seabed.		<p>field were low and consistent with reference sites. Further environmental monitoring prior to removal of subsea infrastructure is unlikely to identify significant difference from the Advisian (2021) results.</p> <p>Monitoring will not reduce the consequence of any impacts to the seabed, and the costs associated with the level of monitoring required to accurately assess any impacts greatly outweighs the benefits.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	
Wet parked items will be tracked and removed from the seabed	Accept	Enables inventory of equipment to be maintained and no wet parked items are unintentionally left in situ.	PS 2.2
As-left survey to confirm no subsea infrastructure has been left in situ.	Accept	An as-left survey following removal of the Minerva subsea infrastructure will confirm that the Minerva subsea infrastructure has been removed.	PS 2.3
Review of existing survey data by a suitably qualified marine archaeologist to inform areas for laydown of supporting equipment to avoid or where not possible, minimise physical impacts to cultural features and prospective areas.	Accept	<p>Review of data by suitably qualified marine archaeologist will inform potential exclusion or avoidance areas for seabed disturbance.</p> <p>Implementing this process will protect and minimise any physical impacts to underwater cultural heritage. Additionally, this process is not inconsistent with the draft guidelines for working in the near and offshore environment to protect Underwater Cultural Heritage (DCCEEW, 2023)</p>	PS 3.1
Reporting of any new suspected underwater cultural heritage sites identified through the archaeological review to the Australasian Underwater Cultural Heritage Database (AUCHD) within 21 days of the discovery.	Accept	Meets legislative requirements and community expectations.	PS 3.2
Unexpected finds of potential Underwater Cultural Heritage ¹⁹ sites/ features, including First Nations UCH, are managed in accordance with the Unexpected Finds	Accept	Allows management of new finds in accordance with legislative requirements, expert advice, and community expectations.	PS 3.3

¹⁹ Underwater Cultural Heritage is defined as any trace of human existence that has a cultural, historical, or archaeological character and is located under water, in accordance with the UCH Act.

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Procedure set out in Section 9.3.			
Monitoring			
Environmental monitoring program to confirm no unacceptable contamination or damage to the seabed or subsoil caused by titleholder activities, exists within the title.	Accept	Survey results will be used to demonstrate that General Direction 831 and Section 270 requirements have been met (Sections 2.1.2).	PS 2.4.1, PS 2.4.2

7.2.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 7-4) that, when implemented, are considered to manage the impacts of seabed disturbance to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential impacts of seabed disturbance on benthic habitats, water quality, marine fauna, and cultural heritage. Additional control measures were identified in Table 7-4 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

7.2.5. Demonstration of Acceptability

Given the adopted controls, the seabed disturbance aspect of the petroleum activity will not result in potential impacts greater than minor, temporary impact to the environment that will recovery naturally without intervention. Further opportunities to reduce the impacts have been investigated in Table 7-4.

The adopted controls are considered good oil-field practice/industry best practice. During consultation, EMAC raised concerns regarding seabed disturbance, in particular the lack of consultation with EMAC prior to issuing of the General Direction by NOPSEMA (refer Appendix F). During consultation, GMTOAC expressed concern regarding “trauma to the seabed” from the Minerva decommissioning activities (refer Appendix F). No other concerns or objections regarding the seabed disturbance aspect of the petroleum activity have been raised by relevant stakeholders. The environmental impacts meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental impacts are consistent with the relevant principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside’s deliberations. Woodside’s decommissioning strategy integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The seabed disturbance aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The seabed disturbance aspect will not impact upon the environment such that future generations cannot meet their needs. All Minerva subsea infrastructure will be removed, and reasonably foreseeable future uses of the environment will be precluded.
- Biodiversity principle: The seabed disturbance aspect will not impact upon biodiversity or ecological integrity such that ecosystem functions are substantially affected.

Woodside considers the impact to be managed to an acceptable level.

7.2.6. Environmental Performance Outcome, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 2</p> <p>No impacts to benthic habitats greater than a severity level of 2¹ within the operational area during the petroleum activity.</p>	<p>C 2.1</p> <p>No planned anchoring.</p>	<p>PS 2.2</p> <p>No planned anchoring by vessels undertaking the petroleum activity within the operational area.</p>	<p>MC 2.1.1</p> <p>Any planned anchoring within the operational area is recorded as an environmental incident.</p>
	<p>C 2.2</p> <p>Wet parked items will be tracked and removed from the seabed</p>	<p>PS 2.2</p> <p>Wet parked equipment inventory maintained, with equipment removed from the seabed.</p>	<p>MC 2.2.1</p> <p>Records demonstrate wet parked equipment is recorded and removed.</p>
	<p>C 2.3</p> <p>Check that all equipment has been removed.</p>	<p>PS 2.3</p> <p>As-left survey undertaken to confirm no subsea infrastructure has been left in situ.</p>	<p>MC 2.3</p> <p>Reporting in relation to General Direction 831 provides evidence that as left survey was completed and that all items have been removed.</p>
	<p>C 2.4</p> <p>Environmental monitoring program to confirm no unacceptable contamination or damage to the seabed or subsoil, caused by titleholder activities exists within the title area.</p>	<p>PS 2.4.</p> <p>Environmental monitoring program assessing chemical contamination of sediment and physical modification of seabed and subsoil from titleholder activities will be conducted within 12 months following removal activities, as per Section 3.8.2. Results of monitoring will be used to assess any impacts caused by titleholder activities on:</p> <ul style="list-style-type: none"> ▪ ecosystem function ▪ target species for any currently known fisheries ▪ hydrocarbons and other mineral resources of the seabed and subsoil. 	<p>MC 2.4.1</p> <p>The Environmental monitoring program will include a decommissioning sediment sampling survey designed by a suitably qualified professional, to confirm chemical contamination is below relevant sediment quality threshold and background levels.</p> <p>Results of Environmental monitoring program demonstrates that any identified contamination or damage to the seabed is acceptable and ALARP (see Section 3.8.2).</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
		<p>PS 2.4.2</p> <p>Where environmental monitoring identifies unacceptable contamination or damage to the seabed or subsoil caused by titleholder activities within the title, Woodside will conduct remediation and/or ongoing monitoring, if required.</p>	
<p>EPO 3</p> <p>Avoid, or where not possible, minimise impacts to cultural features.</p>	<p>C 3.1</p> <p>Review of existing survey data by a suitably qualified maritime archaeologist to inform areas for laydown of supporting equipment to avoid or where not possible, minimise physical impacts to cultural features and prospective areas.</p>	<p>PS 3.1</p> <p>Existing survey data reviewed by a suitably qualified marine archaeologist to identify cultural features and prospective areas.</p>	<p>MC 3.1.1</p> <p>Records demonstrate review undertaken by a suitably qualified marine archaeologist.</p>
	<p>C 3.2</p> <p>Reporting of any new suspected underwater cultural heritage sites identified through the archaeological review to the Australasian Underwater Cultural Heritage Database (AUCHD) within 21 days of the discovery.</p>	<p>PS 3.2</p> <p>New suspected underwater cultural heritage sites identified through the archaeological review reported to the AUCHD within 21 days of the discovery</p>	<p>MC 3.2.1</p> <p>Records demonstrate any new suspected underwater cultural heritage sites identified through the archaeological review reported to the AUCHD within 21 days of the discovery.</p>
	<p>C 3.3</p> <p>Unexpected finds of potential Underwater Cultural Heritage¹⁹ sites/ features, including First Nations UCH, are managed in accordance with the Unexpected Finds Procedure set out in Section 9.3.</p>	<p>PS 3.3</p> <p>In the event that an Underwater Cultural Heritage¹⁹ site/ feature is identified, implement the Unexpected Finds Procedure set out in Section 9.3.</p>	<p>MC 3.3.1</p> <p>No non-compliance with the Unexpected Finds Procedure.</p>

¹ Defined as 'Measurable but limited impact (< 1 year) on marine environment, limited community impact (< 1 month)'

7.3. Light Emissions

7.3.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Light emissions	Artificial light from project vessels and ROV	Light emissions (light spill and glow) from external lighting on the project vessels causing alterations to normal marine fauna behaviour.	10	N/A	-	Type A Low Order Impact	Tolerable

7.3.2. Source of Risk

Artificial lighting on the vessels could be required on a 24-hour basis over the duration of the activity for safety and navigational purposes. This safety and navigational lighting will generate light glow and direct illumination of surrounding surface waters. Most external lighting aboard the vessels is directed towards working areas such as the main decks, although spot lighting into the marine environment may also be used on an as-needed basis. The ROV will also have lights, however light emissions around the ROV are localised due to absorption in the water column.

Vessels and ROVs that may be required for the petroleum activity are described in Section 3.9. The main external lighting on vessels is around the working areas on the main deck of a vessel which are typically < 10 m above sea level for vessels. External lighting for deck operations typically consists of bright white (metal halide, halogen, fluorescent) lights. Lighting is designed to adequately illuminate the relevant area for safe working conditions. Typical light intensity values are 5 to 10 lux for walkways, 50 lux for working areas and approximately 100 lux for high intensity light areas.

Light intensity diminishes with inverse of distance squared ($I_{received} = I/r^2$). Figure 7-1 presents a simple calculation of diminishment of received light with distance assuming 100 lamps on the MCV and support vessel of low, medium, and high intensity each acting additively. Light received is diminished to about the equivalent of light that would be received from a full moon within about 200 m from the light source and to that of a moonless clear night within about 1,500 m for low intensity lights and 3,000 m for high intensity lights.

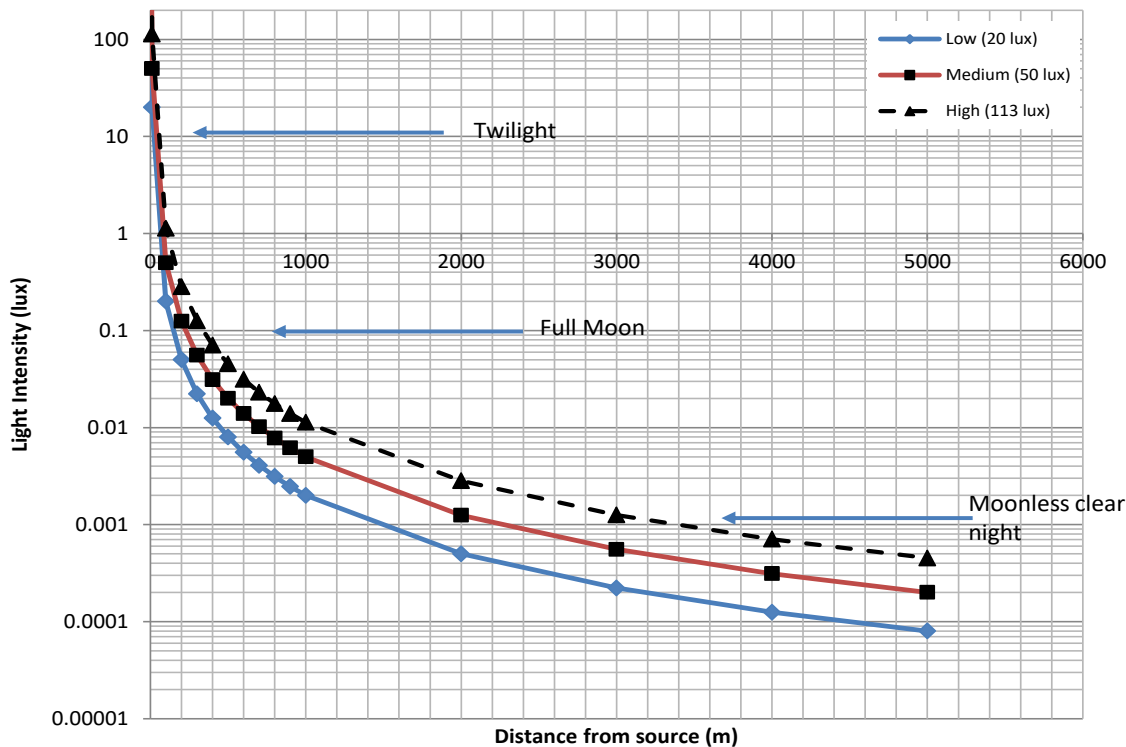


Figure 7-1: Diminishment of light with distance from source assuming 100 lamps of low, medium, and high intensity

7.3.3. Environmental Impact Assessment

Artificial lighting has the potential to affect marine fauna that use visual cues for orientation, navigation, or other purposes, resulting in behavioural responses that can alter foraging and breeding activity. The species with greatest sensitivity to light are marine turtles, seabirds, and fish.

Potential impacts to marine fauna from artificial lighting may include:

- disorientation, or attraction or repulsion to the light
- disruption to natural behaviour patterns and cycles
- indirect impacts such as increased predation risks through attraction of predators.

These potential impacts are dependent on:

- wavelength and intensity of the lighting, and the extent to which the light spills into important wildlife habitat (e.g., foraging, breeding and nesting)
- the timing of light spill relative to the timing of habitat use by marine fauna sensitive to lighting effects
- the physiological sensitivity and resilience of the fauna populations that are at risk of potential effects.

The fauna within the area that may be impacted by artificial light emissions are predominantly pelagic fish, zooplankton, and seabirds. There is no known critical habitat or threatened ecological communities that may be impacted by artificial light emissions from the petroleum activity. Artificial light emissions overlap several BIAs for cetaceans, seabirds, and the white shark (Section 4.4.3).

7.3.3.1. Cetaceans

Southern right whales and pygmy blue whales may occur in proximity to the operational area. Both are seasonally present (Section 4.4.2) and may undertake biologically important behaviours. Cetaceans in general are not recognised as being impacted by artificial light emissions, and artificial light emissions are not recognised as a threat for either pygmy blue whales or southern right whales. As such, impacts from artificial light emissions from the petroleum activity are not expected to result in impacts to these species.

7.3.3.2. Fish and Zooplankton

Fish and zooplankton may be directly or indirectly attracted to light. Experiments using light traps have found that some fish and zooplankton species are attracted to light sources (Meekan et al., 2001), with traps drawing catches from up to 90 m (Milicich, 1992). Lindquist et al. (2005) concluded from a study that light fields around oil and gas activities resulted in an enhanced abundance of clupeids (herring and sardines) and engraulids (anchovies), both of which are known to be highly photopositive.

The concentration of organisms attracted to light results in an increase in food source for predatory species and marine predators are known to aggregate at the edges of artificial light halos. Shaw et al. (2002), in a similar light study, noted that juvenile tunas (Scombridae) and jacks (Carangidae), which are highly predatory, may have been preying upon concentrations of zooplankton attracted to the light fields around oil and gas activities. This could potentially lead to increased predation rates compared to unlit areas.

Short-finned eels are an important cultural value of Traditional Owners, with both GMTOAC and EMAC describing their importance during consultation. Short-finned eels may migrate through the operational area when moving between freshwater environments where they feed and mature and oceanic environments (e.g., Coral Sea) where they spawn (Koster et al., 2021).

Short-finned eels undertake diel migrations in the water column, spending daylight hours in deep water, and night hours near the sea surface. Short-finned eels do not feed during migration, so the diel migration is not in response to movements of prey. Koster et al. (2021) suggested such movements may be predator avoidance. Predatory fishes may be attracted to artificial lighting at night due to the increase in prey abundance (due to light attraction of prey species); given short-finned eels do not feed during migration, the increased prey abundance around artificial light from vessels and night should not attract them. Studies of behavioural responses to artificial light in another species of anguillid eel showed eels avoided artificial light when foraging (Matsushige and Hibino, 2023). This suggests that short-finned eels may also avoid artificial light, however the work by Matsushige and Hibino (2023) related to foraging in freshwater environments, which is a different life history phase than migration in the sea.

Short-finned eels occur throughout south-eastern Australia, hence only a small portion of the total population would credibly occur within the operational area. Tagging by Koster et al. (2021) observed eel migration during April, which is outside the planned execution period for Minerva subsea infrastructure removal. On this basis, negligible impacts to short-finned eels from artificial light emissions from the petroleum activity are expected to occur.

Light spill from the project vessels onto the surrounding surface waters, particularly during night-time activities, is likely to result in aggregations of fish around the project vessels as they are attracted to the light and increased food availability. However, the operational area does not contain any significant feeding, breeding, or aggregation areas for important fish species and the light emissions will only occur while vessels are undertaking the petroleum activity. No impacts to white sharks are expected to occur from light emissions. The potential for increased predation activity and impact to fish and zooplankton is anticipated to be temporary and minor.

7.3.3.3. Seabirds and Migratory Shorebirds

Negative potential impacts to seabirds and migratory shorebirds attracted by artificial lighting can include disorientation causing collision, entrapment, stranding, grounding, and interference with navigation (being drawn off course from usual migration routes). Migratory shorebirds may use less preferable roosting sites to avoid lights and may be exposed to increased predation where lighting makes them visible at night (DoEE, 2020). These behavioural responses may cause injury and/or death. Seabird mortalities from collisions have been found to be correlated to conditions of poor visibility (cloud, fog, or rain) and proximity to nearby seabird colonies (Black, 2005).

Seabirds may either be attracted by the light source itself or indirectly as structures in deep water environments tend to attract marine life at all trophic levels, creating food sources and shelter for seabirds (Surman, 2002; Wiese *et al.*, 2001). Availability of roosting refuge at sea and increased food availability may be the most important reasons why seabirds are attracted to offshore oil and gas infrastructure (Wiese *et al.*, 2001).

Foraging BIAs for several species of seabirds overlap the operational area, however there are no nesting BIAs overlapping the operational area or EMBA. During the petroleum activities, a small number of seabirds and migratory shorebirds may be attracted to the project vessel within the operational area. However, as this is not expected to result in impacts to birds beyond a temporary change in behaviour, any impact is anticipated to be temporary and minor. Any collision between the birds and project vessels because of the attraction are highly unlikely due to the lack of aggregation areas for birds over the operational area.

Seabirds typically nest on isolated islands, and there are no known nesting locations for threatened or migratory seabirds within 20 km of the operational area. Hence impacts to fledgling seabirds listed as threatened or migratory under the EPBC Act will not occur.

A migratory BIA for the critically endangered orange-bellied parrot (*Neophema chrysogaster*) overlaps the operational area. This species migrates during winter months, which is outside the planned execution of the Minerva subsea infrastructure removal activities. However, field management activities may occur at any time and hence vessels may be present in the operational area during the orange-bellied parrot migration period. Artificial light is not identified as a threat to the orange-bellied parrot, with habitat loss and predation identified as the major threats. The orange-bellied parrot is diurnal; hence, it will not credibly be impacted by artificial light emissions during the petroleum activity.

7.3.3.4. Marine Turtles

The impacts of light on nesting and hatchling marine turtles has been well documented. Adult marine turtles may avoid nesting on beaches that are brightly light (Witherington, 1992; Price *et al.*, 2018) and adult and hatchling turtles can be disorientated and unable to find the ocean in the presence of direct light or sky glow (Witherington, 1992; Lorne & Salmon, 2007; Thums *et al.*, 2016; Price *et al.*, 2018).

The PMST search identified three EPBC Act listed marine reptile species with potential to occur or have habitat within the light assessment area (the loggerhead, leatherback, and green turtle). However, neither the green nor loggerhead turtle are expected to occur within the EMBA with both species rarely seen off the Victorian coast, preferring warmer climates in northern and eastern Australia. Whilst breeding behaviour for the leatherback turtle was identified as likely to occur within the light assessment area, these waters do not represent critical habitat for the species and breeding for the leatherback turtle has not been recorded in Victoria (Limpus, 2009).

It is possible that individual turtles may be encountered traversing the light assessment area during the proposed activity. However, only very low numbers of marine turtles would be encountered given the habitat preferences for marine turtles. Impacts of artificial light emissions on marine turtles will be limited to temporary behavioural impacts (e.g., attraction) of individual animals. Localised behavioural impacts to individual marine turtles from light emissions are considered negligible, with no impact predicted at a community or population level.

7.3.3.5. Cultural Features and Heritage Values

Through consultation and review of available literature (Section 4.6.1.5), Woodside understands that marine fauna that may be affected by light emissions, such as turtles, fish, and cetaceans, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact turtle populations and their marine environment may have an indirect impact on some Indigenous communities if they deplete hunting areas and threaten local food security (Delisle *et al.*, 2018). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes results in reduced sightings (e.g., through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO, 2003).

As described in the environmental impact assessment (Section 7.3.3), potential impacts to marine fauna are predicted to be at an individual level, which are not considered to be ecologically significant at a population

level. Impacts are not expected to occur to significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

7.3.4. Demonstration of As Low As Reasonably Practicable

Light emissions generated during the petroleum activity are considered a 'Type A' (lower order) impact based upon the decision context described in Section 6.1.1.

The ALARP process performed for the environmental aspect is summarised in Table 7-5. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable. The result of this ALARP assessment contributes to the overall acceptability of the impact or risk.

Table 7-5: Light Emissions – ALARP Assessment Summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Restrict the petroleum activity to daylight hours, eliminating the need for external work lights	Reject	Components of the petroleum activity cannot safely be completed within a 12-hour day shift. As such, the need for external lighting cannot safely be eliminated. Control is not considered feasible.	-
Eliminate potential for cumulative impacts by separating equipment removal and plug and abandonment activities in time or restricting the number of vessels in the operational area.	Reject	SIMOPS may be required to comply with General Direction 831. Potential cumulative impacts of light emissions are minor. The cost of the control is grossly disproportionate to the environmental benefit.	-
Substitution			
Substitute external lighting with light sources designed to minimise impacts to fauna by: <ul style="list-style-type: none"> ▪ using flashing / intermittent lights instead of fixed beam ▪ using motion sensors to turn lights on only when needed ▪ using luminaires with spectral content appropriate for the species present ▪ avoiding high intensity light of any colour. 	Reject	The retrofitting of all external lighting on vessels is significant in cost. Given the nature and scale of environmental impacts from artificial light emissions, the cost of the control is grossly disproportionate to the environmental benefit.	-
Manage timing of the petroleum activity to avoid sensitive life cycles for light sensitive marine fauna.	Reject	Limitation on timing of the activity imposes substantial schedule constraints and risks not complying with the timeframes specified by General Direction 831. Given the nature and scale of impacts from artificial light emissions, the control cost outweighs the environmental benefit.	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
Engineering			
Retrofit vessel lighting in accordance with design principles outlined in <i>National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds</i> (Commonwealth of Australia, 2020)	Reject	<p>Retrofitting of existing lighting may reduce impacts of artificial light emissions. Retrofitting considerations include:</p> <ul style="list-style-type: none"> ▪ using adaptive light controls to manage light timing, intensity, and colour ▪ lighting only the object or area intended – keep lights close to the ground, directed, and shielded to avoid light spill ▪ using lowest intensity lighting appropriate for the task ▪ using non-reflective, dark-coloured surfaces ▪ using lights with reduced or filtered blue, violet, and ultraviolet wavelengths. <p>External lighting on vessels is often designed to meet specific occupational and navigation safety requirements, and hence may not readily be retrofitted without compromising on these requirements (i.e., the safety cost may be substantial).</p> <p>Retrofitting imposes substantial time and cost to implement.</p> <p>Lighting will be limited to that required for navigational and safety requirements (C 5.1), which meets in part the intent of the best practice light design guidelines. The cost of this control is grossly disproportionate to the environmental benefit.</p>	-
Separate			
Vary the timing of the petroleum activity to avoid peak breeding and migration periods for seabirds and migratory shorebirds	Reject	<p>The operational area overlaps several foraging BIAs for seabirds, but there are no breeding BIAs within the operational area or EMBA (Section 4.4.3).</p> <p>Seabird foraging may be associated with the Bonney Upwelling during summer months, with the upwelling feature typically occurring between Kangaroo Island and Portland (i.e., west of the operational area).</p> <p>Species of albatross are assumed to more likely be present outside their breeding season, as breeding occurs on islands far from the operational area. Breeding typically occurs during spring and summer months.</p> <p>Wedge-tailed and short-tailed shearwaters forage in the region from August-May, which overlaps the planned period for the petroleum activity. Varying the timing of the petroleum activity to avoid shearwater foraging periods would eliminate a substantial portion of the year, including the periods of best metocean conditions. This would result in Woodside being unable to meet the requirements of General Direction 831, which is not tolerable to Woodside.</p>	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
		Hence the cost of implementing this control (i.e., greater risk of non-compliance with General Direction 831) is grossly disproportionate to the environmental benefit.	
Administrate			
Limit external lighting to that required for navigational and safety requirements, except for emergencies.	Accept	Limiting artificial lighting during the petroleum activity reduces the potential for impacts to marine fauna. Minimum lighting requirements for safe navigation and operations will be maintained.	PS 4.1
Implementation of the Frontline Offshore Seabird Management Plan to minimise potential for light attraction.	Accept	Adaptive management framework outlined in the Offshore Seabird Management Plan will prevent population level impacts from occurring, and the care and release protocol will reduce impacts at the individual level. Control is feasible but a minimum level of lighting is required on project vessels for safety. Benefit outweighs cost, given the low costs in implementation and potential benefits in providing certainty that population level impacts to nocturnal seabirds will not occur.	PS 4.2

7.3.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 7-5) that, when implemented, are considered to manage the impacts of artificial light emissions from the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential impacts of artificial light emissions on marine fauna. Additional control measures were identified in Table 7-5 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

7.3.5. Demonstration of Acceptability

Artificial lighting is required to provide a safe working environment and comply with Marine Order Part 30: Prevention of Collisions, which gives effect to COLREGS. Given the adopted controls, light emissions will not result in potential impacts greater than temporary and minor behavioural disturbance to marine fauna. Further opportunities to reduce the impacts have been investigated in Table 7-2.

The assessment of impacts and selected controls are consistent with relevant requirements, including:

- *National Light Pollution Guidelines for Wildlife* (Commonwealth of Australia, 2020)
- *Recovery Plan for Marine Turtles in Australia 2017-2027* (Commonwealth of Australia, 2017)
- *Wildlife Conservation Plan for Seabirds* (Commonwealth of Australia, 2020)
- *Wildlife Conservation Plan for Migratory Shorebirds* (Commonwealth of Australia, 2015)
- Conservation advice and recovery plans for threatened fauna

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding artificial light emissions have been raised by relevant stakeholders. The environmental impacts meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside's deliberations. Woodside's

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decommissioning strategy integrates long-term and short-term economic, environmental, social, and equitable considerations.

- Precautionary principle: The artificial light emissions aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The artificial light aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The artificial light emissions aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.3.6. Environmental Performance Outcomes, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 4</p> <p>Light emissions managed to limit impacts to marine fauna to short-term behavioural impacts only (severity level ≤ 2)¹.</p>	<p>C 4.1</p> <p>Limit external lighting to that required for navigational and safety requirements, except for emergencies.</p>	<p>PS 4.1</p> <p>Lighting will be limited to the minimum required for navigation and safety requirements in accordance with the <i>Navigation Act 2012</i> and associated Marine Orders 30 and 21.</p>	<p>MC 4.1.1</p> <p>Inspection verifies no excessive light being used beyond that required for safe work/navigation</p>
	<p>C 4.2</p> <p>Implementation of the Frontline Offshore Seabird Management Plan to minimise potential for light attraction.</p>	<p>PS 4.2</p> <p>Implement a Frontline Offshore Seabird Management Plan that includes:</p> <ul style="list-style-type: none"> ▪ Standardisation and maintenance of record keeping and reporting of seabird interactions. ▪ Procedures on seabird intervention, care, and management. ▪ Regular reporting requirement for seabirds (unintentional death of, or injury to, seabirds that constitute MNES. 	<p>MC 4.2.1</p> <p>Records demonstrate Frontline Offshore Seabird Management Plan implemented</p>

¹ Defined as 'Measurable but limited impact (< 1 year) on marine environment, limited community impact (< 1 month)

7.4. Noise Emissions

7.4.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Noise emissions	Generation of underwater noise from project vessel, ROV, subsea cutting and infrastructure deburial activities.	Noise emission may impact upon fauna by: <ul style="list-style-type: none"> reducing ability to perceive noise behavioural impacts masking of biologically important sounds. 	10	N/A	-	Type A Low Order Impact	Tolerable
	Generation of atmospheric noise from helicopter operations.		10	N/A	-	Type A Low Order Impact	Tolerable
	Generation of underwater noise from acoustic survey equipment within operational area.		10	N/A	-	Type A Low Order Impact	Tolerable

7.4.2. Source of Risk

Noise emissions to the environment may occur during the petroleum activity from:

- the operation of a vessel during equipment removal and field management activities
- subsea equipment removal activities
- the operation of survey and positioning equipment
- non-routine helicopter operations.

A summary of noise source characteristics for noise sources associated with the petroleum activity are provided in Table 7-6. Further descriptions of noise sources are provided in the sections below.

Table 7-6: Summary of noise sources generated during the petroleum activity

Activity	Estimated SPL (dB re 1 µPa rms)	Frequency	Type
Project Vessels	< 181 dB re 1 µPa at 1 m	1 to 1,000 Hz	Continuous
Infrastructure Cutting	136–141 dB re 1 µPa at 10 m	Around 5 kHz	Continuous
MBES	210–247 dB re 1 µPa at 1 m	400 kHz	Impulsive

7.4.2.1. Vessel Noise

Vessels will generate underwater noise from vessel engines and machinery and propeller cavitation within the operational area. The nature of noise emissions depends on the activities being undertaken by the vessel. Only one vessel will be active in the operational area when undertaking the petroleum activity; however, there

is the potential for simultaneous operations with plug and abandonment activities described by the Minerva Plug and Abandonment EP. Cumulative impacts from simultaneous operations are considered in Section 7.4.3.3.

Vessel movements using main engines within the operational area will be 6 knots or less. Noise emissions of from project vessels using main engines at speeds slower than 6 knots are characterised by continuous engine noise transmitted through the hull, with negligible noise from propeller cavitation.

Vessels will use DP to maintain position when undertaking equipment removal activities and IMR activities. The DP system will use the thrusters to maintain vessel position. Noise generated by vessels using DP includes machinery noise from thruster motors and potentially noise generated by cavitation by thruster propellers. Cavitation is undesirable due to the resulting propeller damage and inefficiency, and thrusters are designed to avoid cavitation. The noise generated by DP thrusters depends on the energy required to hold position. DP thruster noise during calm conditions and low current speeds are substantially lower than thruster noise during relatively high energy metocean conditions or strong currents. Noise energy from DP thrusters is concentrated between 100 and 1,000 Hz, with the source sound pressure level (SPL) up to 181 db re 1 μ Pa at 1 m.

7.4.2.2. Subsea Equipment Removal Noise

An ROV deployed from the MCV will be used during the removal of the Minerva subsea infrastructure and may be used during field management activities. The ROV will generate underwater noise through the operation of machinery on the ROV (e.g., thrusters, hydraulics etc.). Noise levels from the ROV are substantially lower than those generated by the MCV. Given the noise generated from the ROV operation will not be the primary source of noise emissions during their deployment, the overall contribution of ROV noise is considered negligible.

Subsea cutting tools, such as shears, chop saws, and diamond wire saws, will generate underwater noise. Noise emissions from cuttings tools will be intermittent and relatively brief (e.g., approximately 2 minutes per cut for shear cutting tool, with approximately 20 minutes between cuts to reposition the cutting tool). Woodside's experience using shears to cut the Griffin gas export pipeline indicated that a shear cut was completed in less than 5 seconds, with typically 6 to 8 minutes required to set up the tooling between each cut. While shear cutting noise is short duration, it is not an impulsive noise source; rather, it is a continuous noise source with a short duration. Cuts with diamond wire or shop saws are expected to take longer, with diamond wire cutting of the duplex steel spools potentially taking up to 30 minutes to complete.

Pangerc et al. (2016) described the underwater sound measurement data during an underwater diamond wire cutting of a 32-inch conductor (10 m above seabed in around 80 m depth) and found the sound radiated from the diamond wire cutting of the conductor was not easily discernible above the background noise at the closest recorder located 100 m from the source.

Deburial will be carried out with appropriate tooling such as a mass flow excavator. Xodus (2017) detailed that a mass flow excavator produced broadband sound with a source level of up to 162 dB re 1 μ Pa.

7.4.2.3. Survey and Positioning Equipment Noise

During the as-left survey, MBES may be deployed on the ROV. MBES operate at frequencies like those of 'fish finders' by commercial fishers. The noise generated is highly directional and at high frequencies (75 to 900 kHz) (Jiménez-Arranz et al., 2020) and hence attenuates rapidly in the water column. Peak source levels of MBESs may be up to 210 dB re 1 μ Pa at 1 m ($L_{p,rms}$).

7.4.2.4. Helicopter Noise

Helicopter transfers are not planned during the petroleum activity but may be required in non-routine circumstances (e.g., medical evacuation of crew). Vessel crew transfers will occur when vessels are in port. Non-routine helicopter activities may occur in the operational area, including the landing and take-off of helicopters on vessel helidecks. Sound emitted from helicopter operations is typically below 500 Hz (Richardson et al., 1995). The peak received level diminishes with increasing helicopter altitude, but the duration of audibility often increases with increasing altitude. Richardson et al. (1995) reports that helicopter sound is audible in air for four minutes before it passed over underwater hydrophones, but detectable underwater for only 38 seconds at 3 m depth and 11 seconds at 18 m depth. Noise levels reported for a Bell

212 helicopter during fly-over was reported at 162 dB re 1 µPa and for Sikorsky-61 is 108 dB re 1 µPa at 305 m (Simmonds et al., 2004).

7.4.2.5. Underwater Sound Transmission Loss Modelling

Woodside commissioned Jasco to undertake underwater noise sound transmission loss modelling for the Minerva decommissioning activities (Connell et al., 2024). The modelling study considered several sound sources in the Minerva field, including simultaneous noise from multiple sources to inform cumulative impact assessment. The following sound-producing activities were considered by Connell et al. (2024):

- Drilling noise from an anchored Mobile Offshore Drilling Unit (MODU),
- Vessel noise from two Anchor Handling Tug Supply (AHTS) vessels on slow transit on mooring operations, modelled as following a random track in a 4x4 km box centred around Minerva-3,
- Vessel noise from an AHTS on slow transit in standby operation, modelled as following a random track in a 2x4 km box approximately 2 km east of Minerva Well 3,
- Vessel noise from an AHTS conducting resupply operations under dynamic positioning (DP),
- Vessel noise from a multi-purpose support vessel (MPSV) removing subsea infrastructure, including pipelines, following a track and making headway at a rate 240 m/day.

The five noise scenarios modelled by JASCO (Connell et al., 2024) are summarised in Table 7-7. Noise source spectra for these noise sources are shown in Figure 7-2

Table 7-7: Description of modelled scenarios

Scenario	Site(s)	Location	Operation Name	Operation Description	Operation Time
1	2,3,4	Minerva Well-3	Mooring	<ul style="list-style-type: none"> ▪ Moored MODU idle (no noise) ▪ 1x Anchor Handler on bridle ▪ 2x Anchor Handler within 2 km of location (hooking up anchors) 	24 hr
2	1,5	Minerva Well-3	MODU Drilling with AHTS on Standby	<ul style="list-style-type: none"> ▪ Anchored MODU Drilling ▪ 1x Anchor Handler on standby 2 km east (under minimal thrust) 	24 hr
3	1,5,6	Minerva Well-3	MODU Drilling with AHTS on standby and resupply	<ul style="list-style-type: none"> ▪ Anchored MODU Drilling ▪ 1x Anchor Handler on standby within 2km (under minimal thrust) ▪ 1x Anchor Handler at MODU doing resupply (under DP) 	MODU: 24 hr OSV Standby: 24 hr OSV Resupply: 8 hr
4	7	500 m from Minerva Well-3	MPSV Subsea infrastructure removal	<ul style="list-style-type: none"> ▪ MPSV removing subsea infrastructure and pipeline – 240 m/day 	24 hr
5 [†]	1,5,6,7	Minerva Well-3	MODU Drilling with Standby AHTS, resupply and MPSV Subsea infrastructure removal [†]	<ul style="list-style-type: none"> ▪ Anchored MODU Drilling ▪ 1x Anchor Handler on standby within 2km (under minimal thrust) ▪ 1x Anchor Handler at MODU doing resupply (under DP) ▪ MPSV removing subsea infrastructure and pipeline – 240 m/day 	MODU: 24 hr AHTS Standby: 24 hr AHTS Resupply: 8 hr MPSV Removal: 24 hr

[†] This scenario is a combination of Scenario 3 and 4 to represent concurrent operations.

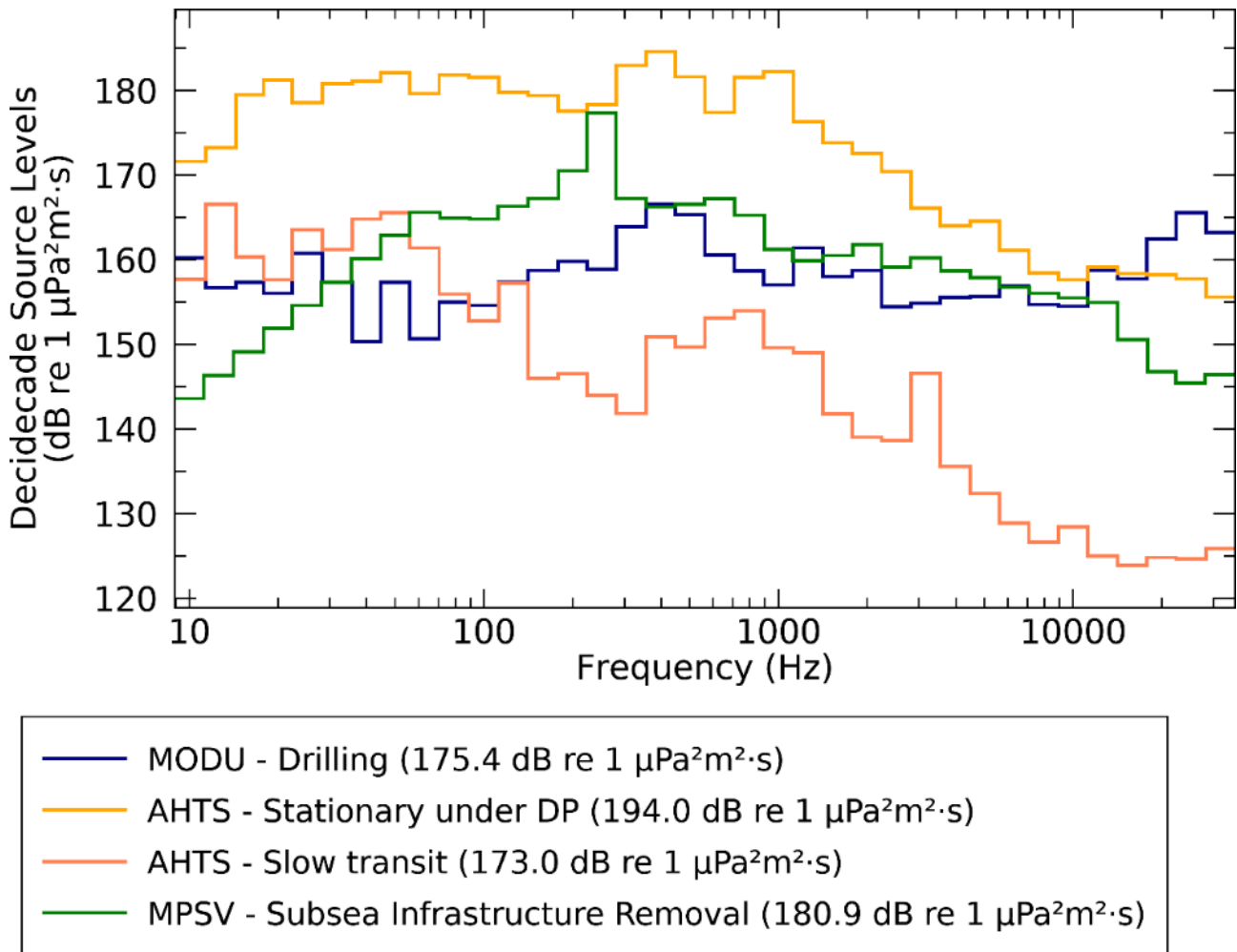


Figure 7-2: Energy source level spectra (in decidecade frequency-band) for all sound sources (from Jasco, 2024)

The JASCO study (Connell et al., 2024) assessed distances from operations where underwater sound levels reached thresholds corresponding to various levels of potential impact to marine fauna. The animals considered included marine mammals, turtles, and fish. Due to the variety of species considered, several different thresholds were used for evaluating effects, including mortality, injury, temporary reduction in hearing sensitivity, and behavioural disturbance.

The modelling methodology considered scenario-specific source levels and range-dependent environmental properties. Estimated underwater acoustic levels for non-impulsive (continuous) noise sources presented as peak sound pressure levels (SPL, L_p), and as accumulated sound exposure levels (SEL, L_E) as appropriate for different noise effect criteria. The duration of the SEL accumulation is defined as integrated over a 24-hour period.

The SEL_{24h} is a cumulative metric that reflects the dosimetric impact of noise levels over 24 hours based on the assumption that an animal is consistently exposed to such noise levels at a fixed position. The corresponding SEL_{24h} radii represent an unlikely worst-case scenario. More realistically, mobile fauna (e.g., marine mammals) would not stay in the same location for 24 hours. Therefore, a reported radius for SEL_{24h} criteria does not mean that marine fauna travelling within this radius of the source will be injured, but rather that an animal could be exposed to the sound level associated with impairment if it remained in that location for 24 hours.

7.4.3. Environmental Impact Assessment

Several fauna within the operational area may be impacted by noise from the petroleum activity, including:

- marine mammals
- fishes
- turtles

Anthropogenic noise has been identified as a threat to these taxa. Relevant actions included in recovery plans for these species are outlined in Section 4.4.4.

7.4.3.1. Marine Fauna

Marine Mammals

Marine mammals that may occur within the operational area are listed in Table 4-3, which predominantly include migratory and threatened cetaceans and the Australian sea-lion (an otariid, or eared, seal). Anthropogenic noise has been identified as a threat to several cetaceans that may occur within the operational area, including the pygmy blue whales and southern right whales – both of which have BIAs overlapping and in proximity to the operational area (Section 4.4.3 and Table 4-5).

Marine mammals rely on sound for critical life functions such as detecting predators, navigation and identifying prey (Erbe, 2012; Erbe et al., 2016; Weilgart, 2007). Underwater noise can affect these life functions, cause behaviour changes and/or cause injury through TTS and PTS. The continuous noise impact threshold levels shown in Table 7-8 are derived from relevant literature and have been used to determine the likelihood of marine mammals experiencing behaviour responses, TTS or PTS from the petroleum activity. Thresholds are defined by functional hearing groups.

Table 7-8: Continuous noise impact thresholds for acoustic effects on marine mammals

Hearing Group	Behavioural Change ¹ SPL (dB re 1 µPa)	TTS Onset ² Weighted SEL _{24h} (dB re 1 µPa ² .s)	PTS Onset ² Weighted SEL _{24h} (dB re 1 µPa ² .s)
Low-frequency cetaceans	120	179	199
High-frequency cetaceans	120	178	198
Very high-frequency cetaceans	120	153	173
Otariid seals	-	199	219

¹ ESA Section 7 Consultation Tools for Marine Mammals on the West Coast (National Oceanic and Atmospheric Administration, 2019)

² Southall et al. (2019)

The operational area overlaps part of the pygmy blue whale foraging BIA associated with the Bonney Upwelling (Table 4-5 and Figure 4-11). Migrating pygmy blue whales may be exposed to underwater noise generated by vessels and the MODU. While the Operational Area lies offshore off the humpback whale migration corridor, there is the potential for humpback whales to be exposed to underwater noise generated by the Petroleum Activity.

The *Conservation Management Plan for the Blue Whale* (Commonwealth of Australia, 2015b), a recovery plan made under the EPBC Act, defines BIAs for pygmy blue whales, with particular emphasis placed on foraging areas and migration corridors. As noted above, the operational area partially overlaps the foraging BIA associated with the Bonney Upwelling. The *Guidance on Key Terms within the Blue Whale Conservation Management Plan* (DAWE, 2021) elaborates on the recovery plan and makes a number of points that relate to the assessment of underwater noise impacts to pygmy blue whales in this EP (Table 7-9).

Table 7-9: Selected definitions from DAWE (2021) for elements of the Conservation Management Plan for the Blue Whale (Commonwealth of Australia, 2015a) relevant to the Petroleum Activity

Recovery Plan Element	Definition
<p>“Anthropogenic noise in biologically important areas will be managed such that any blue whale continues to utilise the area without injury, and is not displaced from a foraging area”</p>	<p>The intent of this requirement is to ensure that any blue whale can continue to forage with a high degree of certainty in a foraging area, and that any blue whale is not displaced from a foraging area. In instances where a threat of environmental harm exists and there is scientific uncertainty as to the outcome, a precautionary approach must be taken.</p> <p>A precautionary approach should be taken to the management of industry activities proposed to occur in or adjacent to designated BIAs (foraging areas) due to the increased likelihood of whales foraging in those locations at critically important times.</p> <p>Activities proposed to occur outside designated foraging areas must adopt best practice adaptive management approaches in the event that indicators of whale foraging (such as aggregating in a particular area) are evident to ensure that impacts to whales are not unacceptable e.g., injury or displacement.</p>
<p>Definition of ‘a foraging area’</p>	<p>Foraging – verb (i) to wander in search of supplies. (Macquarie Dictionary 8th ed. 2020)</p> <p>Feeding – verb (i) to take food; eat; graze. (Macquarie Dictionary 8th ed. 2020)</p> <p>Noting the potential for whale foraging and feeding to occur in areas of high primary productivity outside of designated Foraging Areas, consideration also needs to be given to management of industry activities and underwater anthropogenic noise where opportunistic foraging potential exists.</p> <p>In areas other than those identified in the CMP or NCVA (described in points (i) and (ii) above), where it can be reasonably predicted that blue whale foraging is probable, known or whale presence is detected, adaptive management should be used during industry activities to prevent unacceptable impacts (i.e., no injury or biologically significant behavioural disturbance) to blue whales from underwater anthropogenic noise. In-field observations of actual whale feeding are difficult to detect, so indicators of probable foraging should be used as a proxy.</p>
<p>Definition of ‘displaced from a foraging area’</p>	<p>The recovery plan requirement, Action A.2.3, applies in relation to BIAs. A whale could be displaced from a foraging area if impact mitigation is not implemented. This means that underwater anthropogenic noise should not:</p> <ul style="list-style-type: none"> ▪ Stop or prevent any blue whale from foraging ▪ Cause any blue whale to move on when foraging ▪ Stop or prevent any blue whale from entering a foraging area <p>It is considered that a whale is displaced from a foraging area if foraging behaviour is disrupted, regardless of whether the whale can continue to forage elsewhere within that foraging area. Mitigation measures must be implemented to reduce the risk of displacement occurring during operations where modelling indicates that behavioural disturbance within a foraging area may occur.</p>
<p>Definition of ‘injury to Blue Whales’</p>	<p>For the purpose of interpreting and applying Action Area A.2 of the Blue Whale CMP, injury is both permanent and temporary hearing impairment (Permanent Threshold Shift and Temporary Threshold Shift) and any other form of physical harm arising from anthropogenic sources of underwater noise.</p>

Based on the *Guidance on Key Terms within the Blue Whale Conservation Management Plan* (DCCEEW, 2021), underwater noise emissions from the petroleum activities program must not:

- result in TTS or PTS to pygmy blue whales
- displace a pygmy blue whale from a foraging BIA.

The sound transmission loss modelling study by JASCO (Connell et al., 2024) indicated the SEL_{24h} threshold for PTS would not be exceeded at ranges of > 30 m (Table 7-10, Figure 7-3). Hence, a marine mammal would

be required to remain within 30 m of the MCV for 24 hr to receive sufficient noise energy to exceed this threshold; this is not credible.

The SEL_{24h} threshold for TTS may occur at ranges of up to 670 m for marine mammals, with 0.37 km² the maximum area ensonified above the TTS threshold (Table 7-10, Figure 7-3). While the modelling indicates the SEL_{24h} TTS threshold may be exceeded, this scenario would require a marine mammal to remain within the R_{max} radii (as per functional hearing group) for 24 hrs continuously. Marine mammals naturally move within the environment, and it is not credible that an animal would remain within the R_{max} for a sufficient period to induce TTS. Observation of southern right whales with calves by Nielsen et al. (2019), which are known to move slowly and have long residence times in coastal waters while calving and nursing, recorded a minimum observed speed of 0.18 m/s (approximately 0.6 km/h) and an average movement speed of 0.64 m/s (approximately 2.3 km/h). Southern right whales typically calve and nurse in shallow coastal waters and these behaviours are unlikely to occur in the operational area; the southern right whale reproduction BIA lies 3 km from the operational area at the closest point. Consequently, TTS will not credibly occur in any marine mammals because of the petroleum activity.

No injury – as defined by the *Guidance on Key Terms within the Blue Whale Conservation Management Plan* (DAWE, 2021) – will credibly occur to pygmy blue whales (which are low-frequency cetaceans).

Table 7-10: Scenario 4 (i.e., equipment removal) SEL_{24h}: Maximum (R_{max}) horizontal distances to frequency-weighted SEL_{24h} PTS and TTS thresholds based on Southall et al. (2019) and Finneran et al. (2017) and area ensonified

Hearing Group	PTS		TTS	
	R _{max} (km)	Area (km ²)	R _{max} (km)	Area (km ²)
Low-frequency cetaceans	0.03	/	0.67	0.37
High-frequency cetaceans	-	-	0.03	/
Very high-frequency cetaceans	0.03	/	0.53	0.24
Otariid seals	-	-	0.03	/

A dash (-) indicates the level was not reached within the limits of the modelled resolution (20 m).

A slash (/) indicates that the area is less than an area associated with the modelled resolution (0.0013 km²).

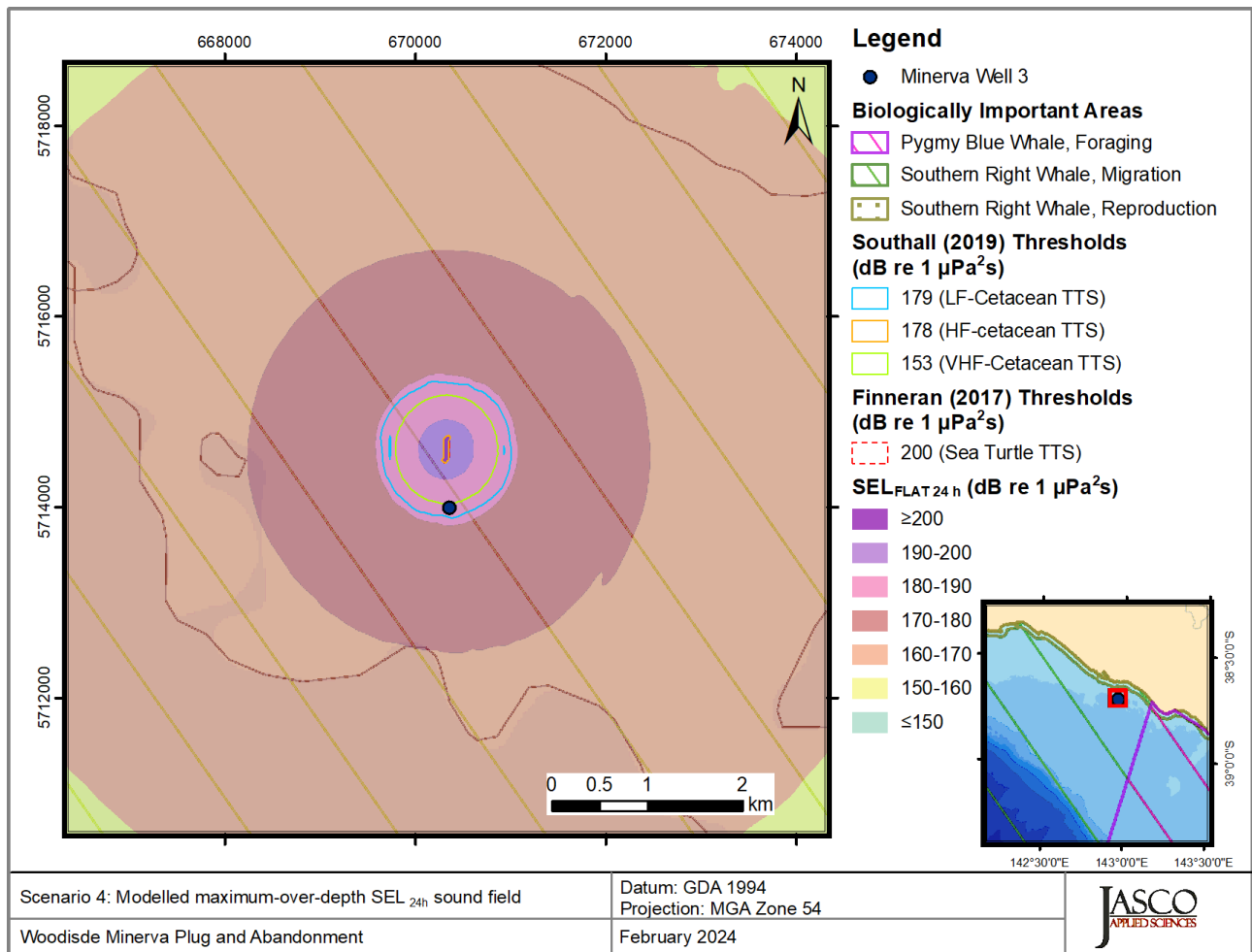


Figure 7-3: Scenario 4, Subsea infrastructure removal, accumulated SEL_{24h}: Sound level contour map showing weighted maximum-over-depth SEL_{24h} results, along with isopleths for TTS in low and very-high-frequency cetaceans. Thresholds omitted here were not reached or not long enough to display graphically (from Connell et al., 2024)

The modelling study by JASCO (Connell et al., 2024) predicted that behavioural impacts for low-, high-, and very high-frequency cetaceans could occur at a maximum range (R_{max}) of up to 2.40 km from the MCV (Table 7-11 and Figure 7-4). The results indicate the behavioural impact threshold for low-frequency cetaceans will be exceeded within the pygmy blue whale foraging BIA. As such, there is the potential for pygmy blue whales in proximity to the MCV to suffer behavioural disturbance. Behavioural responses are hard to predict, but the received level of sound intensity contributes to such responses (NOAA, 2019).

Studies of foraging blue whales in proximity to large ships (with greater source levels than the MCV) showed no observable behavioural effects until the range between whales and large ships was < 900 m (McKenna, 2011); substantially less than the 2.40 km R_{max} range for the 120 dB SPL L_p behavioural disturbance threshold predicted by the JASCO study (Connell et al., 2024). This suggests the 120 dB SPL L_p threshold may be overly conservative for foraging blue whales.

McKenna (2011) observed apparent changes in behaviour in feeding blue whales that experienced close passes (i.e., < 900 m separation) with large ships, such as:

- increased time on the surface between feeding dives after a close pass by a large ship
- reduced number of feeding lunges during dives after a close pass by a large ship.

McKenna (2011) noted substantial variation between individual blue whales in response to close passes with large ships and suggested habituation to noise may explain such variation. Of note, McKenna (2011) did not observe any blue whales cease foraging activity in response to close passes with large vessels. This suggests

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that the noise levels produced by the MCV may not be sufficient to displace pygmy blue whales from a foraging area as defined in Table 7-9.

The results of the modelling study by JASCO (Connell et al., 2024) indicate the 120 dB SPL L_p behavioural impact threshold will not be exceeded within the southern right whale reproduction BIA, which is approximately 3 km from the operational area at the closest point (Table 4-5).

Table 7-11: Scenario 4 (i.e., equipment removal) Summary of sound transmission loss modelling results for combined cetacean functional hearing groups behavioural and TTS thresholds

SPL (L_p ; dB re 1 μ Pa)	Behavioural Response R_{max}^* (km)	Behavioural Response $R_{95\%}^{**}$ (km)
180	–	–
170 ^a	–	–
160	0.02	0.02
158 ^b	0.02	0.02
150	0.06	0.06
140	0.34	0.32
130	0.89	0.85
120 ^c	2.40	2.16
110	5.70	5.43
100	15.0	13.9

* R_{max} is the maximum range from the sound source predicted by the modelling at which the threshold value occurs.

** $R_{95\%}$ is the range within which the threshold value is reached 95% of the time.

^a 48 hr threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al., 2014).

^b 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al., 2014).

^c Threshold for LF, HF & VHF-cetacean behavioural response to non-impulsive noise (NOAA, 2019).

A dash (-) indicates the level was not reached within the limits of the modelled resolution (20 m).

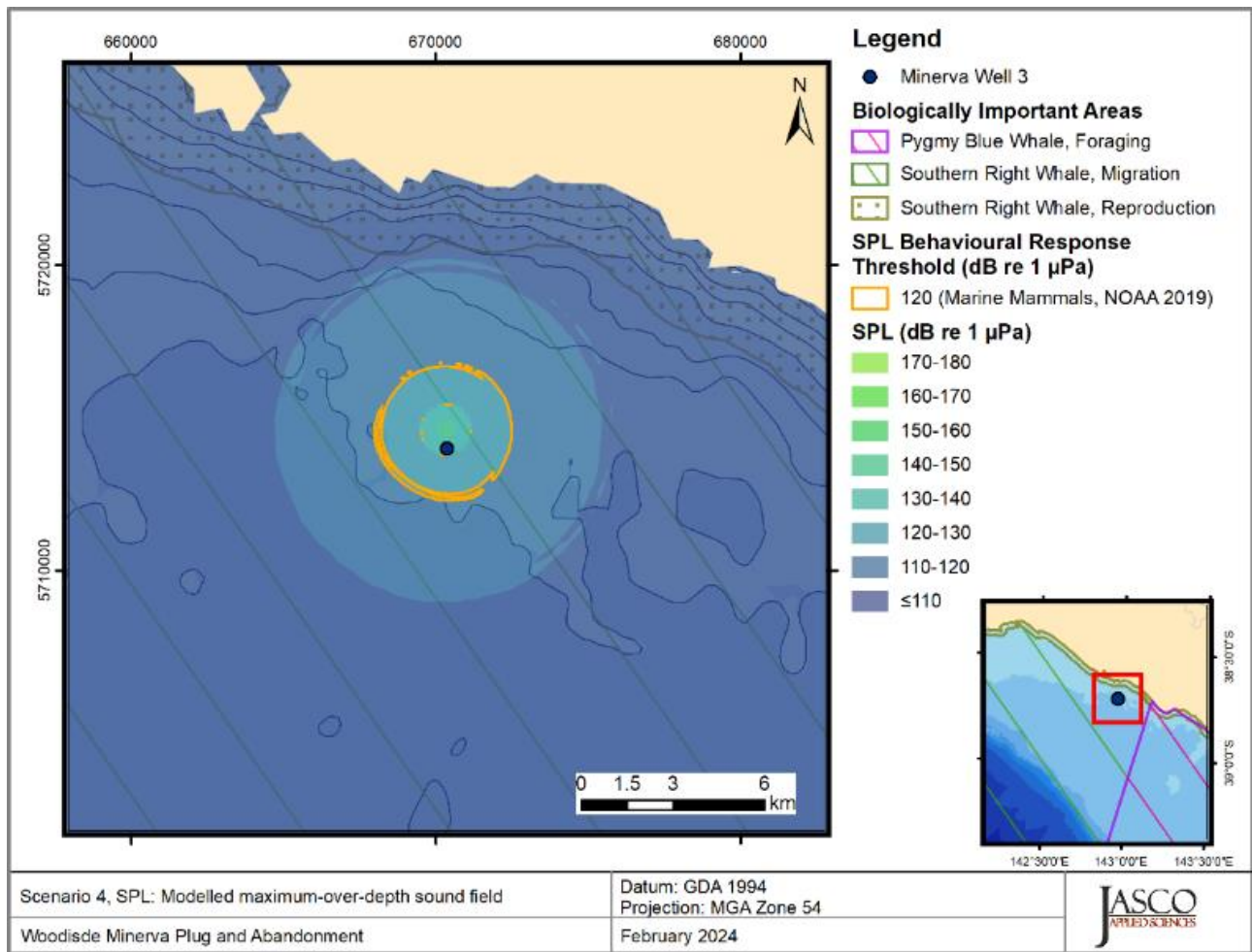


Figure 7-4: Scenario 4, Subsea infrastructure removal, SPL: Sound level contour map showing the unweighted maximum-over-depth sound field in 10 dB steps, and the isopleths for behavioural response threshold for marine mammals (from Connell et al., 2024).

Underwater noise from MBES is high-frequency in nature and overlaps the functional hearing range of high-frequency and very-high frequency cetaceans. High-frequency noise from MBES attenuates rapidly in the water column and will not credibly exceed PTS or TTS thresholds for high- and very high-frequency cetaceans. Behavioural impacts would be limited to short-term impacts, such as attraction or avoidance, and be localised within 10's of metres from the noise source.

Marine Turtles

Marine turtles are at low risk of mortality or permanent injury from continuous anthropogenic noise sources, such as project vessels (Popper et al., 2014). Marine turtles have also been shown to avoid low-frequency sounds (DeRuiter and Doukara, 2012).

The JASCO modelling study (Connell et al., 2024) used the impact thresholds listed in Table 7-12 and Table 7-13 to assess the potential for impacts to marine turtles (and fishes, considered below). The modelling study results indicated the SEL_{24h} threshold for PTS in marine turtles would not be exceeded by the MCV. The SEL_{24h} threshold for TTS in marine turtles would only occur to R_{max} of 30 m. It is not credible that a marine turtle would remain within 30 m of the MCV vessel for 24 hours, hence TTS in marine turtles will not credibly occur because of the petroleum activity.

While more qualitative than the PST and TTS thresholds, the exposure criteria in Table 7-12 suggest that impacts to marine turtles from underwater noise will be limited to masking and behavioural disturbance within hundreds of metres of the MCV. Given the lack of important turtle habitat and the low number of turtles in the

region, such impacts will be limited to individual turtles. Functional hearing in marine turtles is adapted to low frequencies, hence impacts from MBES are unlikely to occur.

Table 7-12: Criteria for vessel noise exposure for fish and marine turtles, adapted from Popper et al. (2014).

Type of Animal	Mortality and Potential Mortal Injury	Impairment			Behaviour
		Recoverable Injury	TTS	Masking	
Fish: No swim bladder (particle motion detection)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: Swim bladder not involved in hearing (particle motion detection)	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) Moderate (I) Moderate (F) Low
Fish: Swim bladder involved in hearing (primarily pressure detection)	(N) Low (I) Low (F) Low	170 dB SPL for 48 h	158 dB SPL for 12 h	(N) High (I) High (F) High	(N) High (I) Moderate (F) Low
Turtles	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Moderate (I) Low (F) Low	(N) High (I) High (F) Moderate	(N) High (I) Moderate (F) Low
Fish eggs and fish larvae	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) Low (I) Low (F) Low	(N) High (I) Moderate (F) Low	(N) Moderate (I) Moderate (F) Low

Sound pressure level dB re 1 µPa.

Relative risk (high, moderate, low) is given for animals at three distances from the source defined in relative terms as near (N) – tens of metres, intermediate (I) – hundreds of metres, and far (F) – thousands of metres.

Table 7-13: Acoustic effects of continuous noise on turtles, weighted SEL_{24h}, Finneran et al. (2017)

PTS onset thresholds (received level) Weighted SEL _{24h} (L _{E,24h} ; dB re 1 µPa ² s)	TTS onset thresholds (received level) Weighted SEL _{24h} (L _{E,24h} ; dB re 1 µPa ² s)
220	200

Fish, Sharks, and Rays

All fish species can detect noise sources, although hearing ranges and sensitivities vary substantially between species. Sensitivity to sound pressure seems to be functionally correlated in fishes to the presence and absence of gas-filled chambers in the sound transduction system. These enable fishes to detect sound pressure and extend their hearing abilities to lower sound levels and higher frequencies (Popper et al., 2019). Based on their anatomy, Popper et al. (2014) classified fishes into three animal groups, comprising:

- fishes with swim bladders whose hearing does not involve the swim bladder or other gas volumes
- fishes whose hearing does involve a swim bladder or other gas volume

- fishes without a swim bladder that can sink and settle on the substrate when inactive.

The criteria defined in Popper et al. (2014) for continuous (Table 7-12) noise sources on the above groups have been adopted.

Based on criteria developed by Popper et al. (2014) for noise impacts on fish, project vessel noise has a low risk of resulting in mortality and a moderate risk of TTS impacts when fish are within tens of metres from the source. The most likely impacts to fish from noise will be behavioural responses, reducing any TTS impact. Individual demersal fish may be impacted in the vicinity of the operational area and tuna and billfish and other mobile pelagic species may transverse the operational area.

Short-finned eels were identified as a cultural value by EMAC and GMTOAC, and traditional owners have a long association with this species. Short-finned eels have a swim bladder not involved in hearing. Using the criteria in Table 7-12, there is negligible risk of mortality, injury or TTS from underwater noise arising from the petroleum activity. Masking and behavioural impacts may occur; however, these will be limited to within hundreds of metres of the MCV. The migration period for short-finned eels is protracted over autumn and summer (Todd, 1980), and the species is distributed across south-western Australia. Hence, masking and behavioural impacts to short-finned eels would only affect a small portion of the migrating population of eels, with no impacts on eels in their freshwater environments.

The operational area is not known to be an important spawning or aggregation habitat for commercially caught targeted species. Therefore, no impacts to fish stocks from underwater noise are expected.

Any impacts from noise sources to fish, sharks and rays are anticipated to be temporary and minor and relate to behavioural changes only.

Birds

Birds are not particularly vulnerable to underwater noise but may be impacted by noise from helicopters. Routine helicopter operations are not planned but may be required in non-routine circumstances. The operational area is not a known seabird aggregation area, although several species of seabirds may forage within the operational area (Table 4-3). Seabirds may be attracted to the presence of the vessel, and hence there may be a higher density of birds around the vessel than in the surrounding environment.

Helicopter noise during landing and take-off may result in behavioural disturbance to seabirds. Seabirds are likely to move away from helicopter noise, resulting in a short-term behavioural disturbance. This impact would only occur during a short period (minutes) when helicopters are landing or taking off. Seabirds are expected to resume normal behaviour once the noise source is no longer in the operational area. As such, impacts to birds from noise emissions are limited to short-term, localised behavioural response, with recovery expected to occur once the noise source is no longer present.

7.4.3.2. Cultural Values and Heritage Features

Through consultation and review of available literature (Section 4.6.1), Woodside understands that marine fauna that may be affected by noise emissions, such as marine mammals and turtles, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact turtle populations and their marine environment may have an indirect impact on some Indigenous communities if they deplete hunting areas and threaten local food security (Delisle et al., 2018).

Related intangible cultural heritage may include the transmission of cultural knowledge about whales and whale behaviour, including birthing areas, whale communication and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn, 2021). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes results in reduced sightings (e.g.,

through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group’s intangible cultural heritage (UNESCO, 2003).

As described in the environmental impact assessment (Section 7.4.3), potential impacts to marine fauna are predicted to be at an individual level, which are not considered to be ecologically significant at a population level. Impacts are not expected to occur to ecologically significant proportions of the populations of the species, nor expected to result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

7.4.3.3. Cumulative Impacts

Cumulative underwater noise impacts may occur because of the petroleum activity occurring simultaneously with the Minerva plug and abandonment activities. No other noise-generating activities that may credibly cause cumulative impacts were identified.

The JASCO study (Connell et al., 2024) modelled a range of scenarios that generate underwater noise, including MODU drilling and a support vessel on standby with simultaneous subsea infrastructure removal by the MCV (Scenario 5 in Table 7-7).

The results of the modelling study by JASCO (Connell et al., 2024) found little evidence of cumulative impacts, with the results of the combined drilling and subsea infrastructure removal activities (Scenario 5 in Table 7-7) having no material difference than the drilling activity alone (Scenario 3 in Table 7-7). These results are summarised below in Table 7-14 and Table 7-15. On this basis, the potential for cumulative underwater noise impacts from simultaneous Minerva plug and abandonment and subsea infrastructure removal activities is negligible.

Table 7-14: Scenarios 3 (drilling with support vessel), 4 (equipment removal) and 5 (simultaneous drilling with support vessel and equipment removal) SEL_{24h}: Maximum (R_{max}) horizontal distances to frequency-weighted SEL_{24h} PTS and TTS thresholds based on Southall et al. (2019) and Finneran et al. (2017) and area ensonified

Hearing Group	Frequency-Weighted SEL _{24h} Threshold (L _{E,24h} ; dB re 1 µPa ² -s)	Scenario 3		Scenario 4		Scenario 5	
		R _{max} (km)	Area (km ²)	R _{max} (km)	Area (km ²)	R _{max} (km)	Area (km ²)
PTS							
LF cetaceans	199	0.18	0.07	0.03	/	0.18	0.09
HF cetaceans	198	–	–	–	–	–	–
VHF cetaceans	173	0.26	0.16	0.03	/	0.28	0.18
Otariid Seals	219	–	–	–	–	–	–
Sea turtles	220	–	–	–	–	–	–
TTS							
LF cetaceans	179	2.09	7.12	0.67	0.37	3.37	8.92
HF cetaceans	178	0.16	0.06	0.03	/	0.16	0.07
VHF cetaceans	153	1.99	7.91	0.53	0.24	3.02	8.77
Otariid Seals	199	0.07	0.01	0.03	/	0.07	0.02

Hearing Group	Frequency-Weighted SEL _{24h} Threshold (L _{E,24h} ; dB re 1 µPa ² ·s)	Scenario 3		Scenario 4		Scenario 5	
		R _{max} (km)	Area (km ²)	R _{max} (km)	Area (km ²)	R _{max} (km)	Area (km ²)
Sea turtles	200	0.15	0.05	0.03	/	0.15	0.06

A dash (-) indicates the level was not reached within the limits of the modelled resolution (20 m).

A slash (/) indicates that the area is less than an area associated with the modelled resolution (0.0013 km²).

Table 7-15: Scenarios 3 (drilling with support vessel), 4 (equipment removal) and 5 (simultaneous drilling with support vessel and equipment removal) summary of sound transmission loss modelling results for combined cetacean functional hearing groups behavioural and TTS thresholds

SPL (L _p ; dB re 1 µPa)	Scenario 3		Scenario 4		Scenario 5	
	Behavioural Response R _{max} * (km)	Behavioural Response R _{95%**} (km)	Behavioural Response R _{max} * (km)	Behavioural Response R _{95%**} (km)	Behavioural Response R _{max} * (km)	Behavioural Response R _{95%**} (km)
180	–	–	–	–	–	–
170 ^a	–	–	–	–	–	–
160	0.13	0.12	0.02	0.02	0.13	0.12
158 ^b	0.15	0.14	0.02	0.02	0.15	0.14
150	0.43	0.39	0.06	0.06	0.44	0.40
140	1.09	0.96	0.34	0.32	1.25	1.10
130	3.61	3.06	0.89	0.85	3.23	2.82
120 ^c	9.57	8.36	2.40	2.16	9.15	8.65
110	23.2	20.8	5.70	5.43	23.5	20.8
100	45.2	40.6	15.0	13.9	45.0	40.5

* R_{max} is the maximum range from the sound source predicted by the modelling at which the threshold value occurs.

** R_{95%} is the range within which the threshold value is reached 95% of the time.

^a 48 hr threshold for recoverable injury for fish with a swim bladder involved in hearing (Popper et al., 2014).

^b 12 h threshold for TTS for fish with a swim bladder involved in hearing (Popper et al., 2014).

^c Threshold for LF, HF & VHF-cetacean behavioural response to non-impulsive noise (NOAA, 2019).

A dash (-) indicates the level was not reached within the limits of the modelled resolution (20 m).

7.4.4. Demonstration of As Low As Reasonably Practicable

Noise emissions generated during the petroleum activity are considered a ‘Type A’ (lower order) impact based upon the decision context described in Section 6.1.1.

The ALARP process performed for the environmental aspect is summarised in Table 7-16. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable. The result of this ALARP assessment contributes to the overall acceptability of the impact or risk.

Table 7-16: Noise emissions – ALARP assessment summary

Control Measure	Accept/Reject	Reason	Associated Performance Standard
Eliminate			
Abandon equipment in situ.	Reject	<p>Abandonment in situ would eliminate underwater noise from removal activities. Additional inspection and monitoring activities may be required, which would generate underwater noise, but noise events would likely be quieter and of shorter duration.</p> <p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ would preserve benthic habitats associated with the Minerva subsea infrastructure, which some stakeholders may perceive as beneficial due to the increase in biodiversity and abundance.</p> <p>Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-
Substitution			
Mooring or anchoring for vessel undertaking petroleum activities.	Reject	<p>Securing vessels to a mooring or using the anchor reduces the need for a support vessel to be moving under main engine power. This would reduce noise emissions from vessels. Mooring or anchoring would result in seabed disturbance. Moorings would need to be relocated frequently as equipment is removed.</p> <p>Anchored moorings introduce additional seabed disturbance and entanglement risk for cetaceans, and embedding anchors sufficiently may be challenging given the metocean conditions and shallow geology.</p> <p>Several moorings would need to be laid to hold the equipment removal vessel in a suitable position. Each mooring would need to be tested to verify its integrity prior to the vessel being moored.</p> <p>Installation of moorings would require an additional vessel to pre-lay moorings or would require substantial additional time for the equipment removal vessel to lay and recover moorings. Additional vessel(s) or additional time would increase the intensity or duration of environmental impacts of vessel operations.</p> <p>Using the vessel anchor would not provide a secure hold for equipment removal activities and would result in additional seabed disturbance.</p>	-
Engineering			
Limit vessel DP thruster power.	Reject	DP systems typically require any thruster to be available to use up to its maximum power at any time (e.g., for	-

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Control Measure	Accept/Reject	Reason	Associated Performance Standard
		<p>maintaining position in response to large waves or swell). Constraining DP thruster power may not be permissible under vessel classifications, and DP is a safety critical element for the Minerva subsea infrastructure activities. Hence limiting DP thruster power is not feasible.</p> <p>Operational experience with DP systems indicates that thrusters typically run well below their maximum power much of the time, hence limiting DP thruster power would only deliver a reduction in underwater noise for a relatively little portion of time.</p>	
Separate			
Do not undertake activities during pygmy blue whale foraging period.	Reject	<p>Not undertaking equipment removal activities during the peak pygmy blue whale foraging period (January to March) would be effective in mitigating the impacts of underwater noise on pygmy blue whales. However, the peak foraging period coincides with the best weather conditions in the region to complete the work.</p> <p>Works outside the peak pygmy blue whale period may overlap the seasonal migration and calving of southern right whales, which partially transfers the risk from pygmy blue whales to southern right whales.</p> <p>All tenderers that responded to Woodside required the ability to work during the pygmy blue whale period. Excluding work during this period poses a risk to removing the Minerva subsea infrastructure before 30 June 2025 as required by General Direction 831. This risk is not tolerable to Woodside; hence the control is not considered feasible.</p> <p>Metocean analysis by Woodside confirms the need to work during the summer months, which provide the most suitable weather conditions. Work during suitable weather conditions is expected to complete the subsea infrastructure removal campaign with fewer weather delays, shortening the duration of the underwater noise sources.</p> <p>Working during suitable weather conditions may also reduce the noise emissions from the equipment removal vessel holding station with DP as the DP system may not need to work as hard to hold position, resulting in a reduction of underwater noise emissions.</p>	-
Do not undertake activities during southern right whale migration and calving period.	Reject	<p>Not undertaking equipment removal activities during the southern right whale migration and calving period (May to September) would be very effective in mitigating the impacts of underwater noise on southern right whales. However, works outside this period may overlap the peak foraging period for pygmy blue whales, which partially transfers the risk from southern right whales (endangered) to pygmy blue whales (critically endangered).</p> <p>Woodside does not plan to undertake removal of the Minerva subsea infrastructure during the southern right whale migration and calving period (May to September) as weather conditions severely limit the number of working days. However, Woodside must retain flexibility to work at any time of the year to provide assurance in meeting General</p>	-

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Control Measure	Accept/Reject	Reason	Associated Performance Standard
		Direction 831. Risks to not meeting General Direction 831 are not tolerable to Woodside, hence the control is not considered feasible.	
Prohibit timing overlap between equipment removal and plug and abandonment activities	Reject	<p>No timing overlap of the subsea infrastructure removal and plug and abandonment activities may reduce cumulative impacts from simultaneous operations (SIMOPS). Received noise levels are not linearly additive (i.e., doubling noise sources of the same source level does not double the decibels received by a whale); the control would make little different to the noise levels received by whales. However, preventing SIMOPS may increase the total area ensonified above impact thresholds.</p> <p>Subsea infrastructure removal and plug and abandonment activities are both weather dependent. Working during late spring, summer and early autumn provides substantially more working days than other times of the year. Removal activities and plug and abandonment activities would benefit substantially in cost and safety by working during the period of good weather conditions.</p> <p>Committing to no SIMOPS of equipment removal and plug and abandonment activities poses a risk to completing works required to comply with General Direction 831. This risk is not tolerable to Woodside; hence the control is not considered feasible.</p>	-
Prohibit timing of Beach seabed survey in VIC/L22 and VIC/PL33 overlapping with the petroleum activity.	Accept	<p>Beach Energy intends to undertake a seabed survey which partially overlaps VIC/L22 (the production licence for Minerva). An access agreement is in place between Woodside and Beach. The terms of the agreement permit Woodside to decline Beach access when subsea infrastructure removal and plug and abandonment activities are underway.</p> <p>Preventing Beach from undertaking the seabed survey in VIC/L22 simultaneously with either subsea infrastructure removal or plug and abandonment activities reduces the potential for cumulative impacts.</p> <p>The timing of the Beach survey is flexible, and Woodside routinely consults with Beach as required.</p>	PS 5.1
Administrate			
All vessels to comply with EPBC Regulations – Part 8 Division 8.1 interacting with cetaceans in relation to distances to cetaceans.	Accept	<p>Implementation of controls for reduced vessel speed around cetaceans can potentially reduce the underwater noise footprint of a vessel and lower the likelihood of interaction above significant thresholds.</p> <p>Controls adopted based on legislative requirements – must be adopted.</p>	PS 5.2
Implement Planned Maintenance System (PMS) on MCV.	Accept	<p>Maintenance and inspection completed as scheduled on PMS reduces the generated noise emissions and associated impacts. Machinery maintenance is part of normal operations to verify operation in accordance with manufacturer's guidelines.</p>	PS 5.3

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Control Measure	Accept/Reject	Reason	Associated Performance Standard
		<p>Propulsion systems on the vessels will be operated in accordance with manufacturer's instruction and ongoing maintenance to allow efficient operation.</p> <p>The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	
Cease DP operations if a pygmy blue whale or southern right whale comes within 300 m (caution zone as per EPBC Regulations 8.1) of a vessel using DP.	Reject	<p>Ceasing DP operations when a pygmy blue whale or southern right whale is within 300 m of the equipment removal vessel.</p> <p>Reliable station-keeping provided by DP is a safety-critical requirement. Ceasing DP operations could result in unacceptable safety risk (e.g., increased risk of dropped objects while lifting equipment from the seabed).</p> <p>The operational area is open-water and there are no restrictions on the movement of cetaceans. Any cetacean approaching the vessel whilst operating the DP system is free to move away if the cetacean is disturbed by the noise.</p> <p>DP operations will only commence after 30 minutes of observations for whales by MFOs (between 1 January and 31 March) or trained crew outside this period. This provides assurance that no whales are within the 300 m caution zone required by the EPBC Regulations – Part 8 Division 8.1 prior to commencing DP operations.</p> <p>The safety risk associated with this control is unacceptable. The control is very unlikely to be required given the other controls adopted to manage impacts of underwater noise from DP operations.</p>	-
Limit vessel speeds to 6 knots or less in the operational area (excluding emergencies).	Accept	<p>Limiting vessel speeds may reduce machinery noise and cavitation, reducing underwater noise source levels in the operational area.</p> <p>Limiting vessel speeds within the operational area can readily be done but may result in additional time required to complete some activities. Limiting vessel speeds also reduces the likelihood and consequence of vessel collisions with whales, providing additional benefit.</p>	PS 5.4
Limit DP operations to daylight hours to enable MFOs to detect whales	Reject	<p>The ability to detect whales in proximity to the equipment removal vessel during nighttime is severely diminished, as most detection methods (e.g., MFOs) cannot reliably detect whales in darkness. Restricting DP operations to daylight hours would ensure that this noise-generating activity only occurs when a reliable detection control is in place.</p> <p>DP operations are required to safely undertake removal of subsea equipment, hence preventing DP operations during nighttime would incur substantial additional costs and extend the duration of the activity considerably, prolonging other environmental impacts (e.g., displacement of other users due to physical presence, noise emissions etc.).</p> <p>The cost of limiting DP operations to daylight hours is grossly disproportionate to the environmental benefit.</p>	-

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Control Measure	Accept/Reject	Reason	Associated Performance Standard
<p>Implement adaptive management procedure during daylight hours.</p> <p>Adaptive management procedure to include:</p> <ul style="list-style-type: none"> ▪ MFOs (January to March) or trained crew (April to December) monitor for pygmy blue and southern right whales 30 minutes prior to commencing DP operations. Proceed with DP operations only when no pygmy blue and southern right whales have been sighted, to the limits of visibility, over the 30-minute monitoring period. ▪ MFOs or trained crew monitor for pygmy blue and southern right whales 1 hr before sundown prior to undertaking night-time DP operations. ▪ Proceed with night-time DP operations only when no pygmy blue or southern right whales observed, to the limits of visibility, 1 hr before the preceding sundown. 	Accept	<p>Adaptive management measures are intended to ensure that no whales are in proximity to vessels before commencing discrete activities that emit relatively high levels of underwater noise. This will reduce the noise levels received by whales, with a consequent reduction in potential impacts.</p> <p>The observation time periods provide sufficient time for MFOs or trained crew to determine the presence of pygmy blue or southern right whales in proximity to the MCV before commencing activities that emit relatively high levels of underwater noise. Deferring these activities until no whales are present is an effective means of reducing noise levels received by whales. The control is reliant on the detection of whales, which is provided by MFOs (January to March) or trained crew (April to December). The requirement for MFOs to be trained and have relevant regional experience ensures MFOs are an effective detection control.</p>	PS 5.5.1
Monitoring			
<p>At least one dedicated marine fauna observer (MFO) to detect whales during daylight hours from MCV between 1 January and 31 March (pygmy blue whale peak foraging period), with regionally relevant experience.</p>	Accept	<p>MFO are routinely used during seismic surveys to implement reactive source controls (reducing or ceasing acoustic emission from seismic source) when whales are detected within shutdown zones. MFOs may be effective at detecting whales when conditions are suitable. MFO detection rates may be reduced by:</p> <ul style="list-style-type: none"> ▪ high sea states, which make whales surfacing harder to detect ▪ poor visibility conditions, such as fog, smoke, or haze ▪ nighttime. <p>Day lengths during summer months (when the Minerva subsea infrastructure removal campaign is planned) are</p>	PS 5.5.2

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Control Measure	Accept/Reject	Reason	Associated Performance Standard
		<p>approx. 15 hrs, which would require two MFO shifts to implement the control during daylight hours.</p> <p>MFOs alone to not reduce underwater noise impacts on whales, as they are a detection control. Upon detection, a reduction in impact (if required) would rely on reducing or ceasing the noise emissions (e.g., not commencing operations requiring DP) or modifying the path between the noise source and the whale (e.g., moving away from the whale).</p> <p>MFOs are generally accepted practice on seismic surveys, but increasingly being implemented during other petroleum activities in areas where whales exhibit biologically important behaviours. MFOs would increase costs. Requiring MFOs observing during daylight hours on the equipment removal vessel could constrain activities if MFOs were unavailable (e.g., unwell). This could be mitigated by having more than one MFO, or providing for vessel crew to observe for whales of the MFO is temporarily unavailable.</p>	
At least one dedicated MFO to detect whales during daylight hours from MCV year-round, with regionally relevant experience.	Reject	<p>Determining whale behaviour is important in determining if a foraging pygmy blue whale has been displaced from a foraging area. MFOs are likely to better determine whale behaviour than trained crew.</p> <p>The presence of pygmy blue whales in the region is highly seasonal in the Bonney Upwelling, with blue whale sightings over several years indicating blue whales in the vicinity of the operational area from January to March. Pygmy blue whales are concentrated in the western region of the Bonney Upwelling (east of Portland) between November and January, and have left before April (Möller et al., 2020; Gill et al., 2011).</p> <p>The benefit of MFOs over trained crew – more reliable behavioural observations to determine if a pygmy blue whale has been displaced from a foraging area – is only realised when pygmy blue whales are present. No reliable determination of whale behaviour is required for other whale species to assess compliance with relevant requirements (e.g., recovery plans) or implement reactive management measures. Hence the benefit of MFOs trained crew when pygmy blue whales are not present is reduced. Dedicated MFOs imposes additional costs, which are grossly disproportionate to the environmental benefit.</p>	-
Trained crew to detect whales outside pygmy blue whale foraging season (1 January to 31 March) during daylight hours.	Accept	Trained crew may be more readily available than MFOs and cost less to deliver a detection control of similar effectiveness to MFOs. Trained crew may be less effective at determining whale behaviour, which is a requirement to determine if a pygmy blue whale has been displaced from a foraging area (e). Hence trained crew will not be used to observe for whales during the peak pygmy blue whale foraging period in the vicinity of the operational area (1 January – 31 March)	PS 5.5.3
Passive acoustic monitoring (PAM) to monitor for whales.	Reject	PAM may detect whales by their calls, which may permit whale detections during periods when other detection	-

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Control Measure	Accept/Reject	Reason	Associated Performance Standard
		<p>controls are unavailable or unreliable (e.g., at night when MFOs cannot reliably detect whales).</p> <p>PAM typically works better for whales with high-frequency calls, such as sperm whales, killer whales, and dolphins. PAM may be unreliable for low-frequency cetacean detection (Smith et al., 2020), such as pygmy blue whales and southern right whales. PAM systems require a trained operator and are vulnerable to equipment failure.</p> <p>PAM detections may not reliably determine whale behaviour. Assessing pygmy blue whale behaviour is a requirement to determine in a pygmy blue whale has been displaced from a foraging area (e).</p> <p>PAM may determine the presence of whales during night hours when MFOs are not effective. However, PAM may not reliably detect the range of a whale; range estimates from PAM typically require two or more receivers separated by several kilometres to reliably triangulate noise sources.</p> <p>The cost of implementing PAM is grossly disproportionate to the environmental benefit.</p>	
Spotter aircraft to observe for whales	Reject	<p>Spotter aircraft can detect whales in a large area relatively quickly. Spotter aircraft may more readily detect whales than observers onboard vessels but are subject to many of the same constraints (e.g., daylight hours only, degraded visibility from fog, smoke etc. inhibits detection, higher sea states inhibits detection).</p> <p>Spotter aircraft are effective for surveying large areas, such as during seismic surveys where the vessel is continuously moving or undertaking population surveys. Spotter aircraft are less suitable for continuously surveying smaller areas, such as around the operational area for the equipment removal activity.</p> <p>Spotter aircraft are limited by endurance (e.g., fuel), and at least two spotter aircraft would be required to provide continuous detection of whales during daylight hours. Spotter aircraft introduce additional safety risks and may be restricted by weather conditions (e.g., rain, strong wind).</p> <p>Spotter aircraft may detect whales at greater range from the equipment removal vessel than MFOs but introduce new safety risks and costs.</p> <p>Spotter aircraft offer little improvement in whale detection in proximity to the MCV than MFOs or trained crew observing for marine fauna.</p> <p>The cost of implementing spotter aircraft to detect whales is grossly disproportionate to the environmental benefit.</p>	-
Drones to observe for whales	Reject	<p>Like spotter aircraft, drones can detect whales in a large area relatively quickly. Drones may more readily detect whales than observers onboard vessels but are subject to many of the same constraints (e.g., daylight hours only, degraded visibility from fog, smoke etc. inhibits detection, higher sea states inhibits detection).</p>	-

Control Measure	Accept/Reject	Reason	Associated Performance Standard
		<p>Drones are similar in many respects to spotter aircraft. Operational safety risks of drones are lower than spotter aircraft, but endurance and weather limitations are similar. Drones offer little improvement in whale detection in proximity to the MCV than MFOs or trained crew observing for marine fauna.</p> <p>The cost of implementing spotter aircraft to detect whales is grossly disproportionate to the environmental benefit.</p>	
Shore-based observers for whales	Reject	<p>The petroleum activity will occur within sight of shore (approximately 5 km from shore at the closest point). Shore-based observers may be used to detect whales in the vicinity of the operational area using telescopes. This method is used to survey southern right whales, which come very close to shore.</p> <p>Shore-based observers are subject to many of the same constraints (e.g., daylight hours only, degraded visibility from fog, smoke etc. inhibits detection, higher sea states inhibit detection) as MFOs onboard vessels.</p> <p>Shore-based observers offer little improvement in whale detection in proximity to the MCV than MFOs or trained crew observing for marine fauna.</p>	-

7.4.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 7-16) that, when implemented, are considered to manage the impacts of noise emissions from the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential impacts of noise emissions on marine fauna. Additional control measures were identified in Table 7-16 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

7.4.5. Demonstration of Acceptability

Noise emissions are an unavoidable consequence of the petroleum activity and cannot reasonably be eliminated. Given the adopted controls, noise emissions will not result in potential impacts greater than temporary and minor behavioural disturbance to marine fauna. Further opportunities to reduce the impacts have been investigated in Table 7-16.

The assessment of impacts and selected controls are consistent with relevant requirements, including:

- *Conservation Management Plan for the Blue Whale* (Commonwealth of Australia, 2017)
- *Guidance on Key Terms within the Blue Whale Conservation Management Plan* (Department of Agriculture, Water and the Environment, 2021)
- *Conservation Management Plan for the Southern Right Whale* (Commonwealth of Australia, 2012)
- *Recovery Plan for Marine Turtles in Australia 2017-2027* (Commonwealth of Australia, 2017)

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding noise emissions have been raised by relevant stakeholders. Environmental values identified by stakeholders (e.g., culturally significant whales and short-finned eels identified by Traditional Owners) have been considered in the impact assessment.

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The environmental impacts meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside's deliberations. Woodside's decommissioning strategy integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The noise emissions aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect. Woodside commissioned independent noise modelling by subject matter experts Jasco (Connell et al., 2024) to inform the impact assessment.
- Inter-generational principle: The noise emissions aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The noise emissions aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.4.6. Environmental Performance Outcomes, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 5 Noise emissions managed to limit impacts to marine fauna to short-term behavioural impacts only (severity level ≤ 2) ¹ .	C 5.1 Prohibit timing of Beach seabed survey in VIC/L22 and VIC/PL33 overlapping with the petroleum activity.	PS 5.1 No overlapping timing of Beach seabed survey in VIC/L22 and VIC/PL33 with the petroleum activity.	MC 5.1.1 Records show that Beach seabed survey was not conducted simultaneously within VIC/L22 or VIC/PL33 with the petroleum activities described in this EP.
EPO 6 Undertake the petroleum activity in a manner that does not cause acoustic injuries to, or prevent biologically important behaviours of, pygmy blue whales.	C 5.2 All vessels to comply with EPBC Regulations – Part 8 Division 8.1 interacting with cetaceans in relation to distances to cetaceans.	PS 5.2 Project vessels comply with EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans, including the following measures ²⁰ : <ul style="list-style-type: none"> ▪ vessels will not travel greater than six knots within 300 m of a cetacean or turtle (caution zone) and not approach closer than 100 m from a whale. ▪ vessels will not approach closer than 50 m for a dolphin or turtle and/or 100 m for a whale (with the exception of animals bow riding). ▪ if the cetacean or turtle shows signs of being disturbed, vessels will immediately withdraw from the caution zone at a constant speed of less than six knots. 	MC 5.2.1 Daily vessel reports and incident reports demonstrate no breaches with EPBC Regulations 2000 – Part 8 Division 8.1 Interacting with cetaceans.
	C 5.3 Implement PMS on MCV.	PS 5.3 MCV has PMS to ensure engines and power generation equipment, compressors, and machinery are maintained.	MC 5.3.1 Records demonstrate MCV contractor maintenance has been satisfactorily completed as scheduled in PMS.

²⁰For safety reasons, the distance requirements below are not applied for a vessel holding station or with limited manoeuvrability.

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<p>C 5.4</p> <p>Limit vessel speeds to 6 knots or less in the operational area (excluding emergencies).</p>	<p>PS 5.4</p> <p>Movements of project vessels within the operational area to be 6 knots or less (excluding emergencies)</p>	<p>MC 5.4.1</p> <p>Daily vessel reports and incident reports record incidents where 6 knot limit was exceeded.</p>
	<p>C 5.5</p> <p>Implement adaptive management procedure during daylight hours.</p>	<p>PS 5.5.1</p> <p>Implement adaptive management procedure during daylight hours.</p> <p>Adaptive management procedure to include:</p> <ul style="list-style-type: none"> ▪ MFOs (January to March) or trained crew (April to December) monitor for pygmy blue and southern right whales 30 minutes prior to commencing DP operations. Proceed with DP operations only when no pygmy blue and southern right whales have been sighted, to the limits of visibility, over the 30-minute monitoring period. ▪ MFOs or trained crew monitor for pygmy blue and southern right whales 1 hr before sundown prior to undertaking night-time DP operations. Proceed with night-time DP operations only when no pygmy blue or southern right whales observed, to the limits of visibility, 1 hr before the preceding sundown. 	<p>MC 5.5.1.1</p> <p>Records demonstrate that observation periods prior to commencing DP operations were undertaken and DP operations delayed in whales sighted as per the performance standard.</p>
		<p>PS 5.5.2</p> <p>At least one dedicated MFO to detect whales during daylight hours from MCV between 1 January and 31 March (pygmy blue whale</p>	<p>MC 5.5.2.1</p> <p>Records demonstrate that MFO undertake observations for whales outside peak pygmy blue whale foraging period (1 January to 31 March).</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
		peak foraging period), with regionally relevant experience.	MC 5.5.2.2 MFO resumes to demonstrate suitable qualifications and regionally relevant experience.
		PS 5.5.3 Trained crew to detect whales outside pygmy blue whale foraging season (1 January to 31 March) during daylight hours.	MC 5.5.3.1 Records demonstrate that trained crew undertake observations for whales outside peak pygmy blue whale foraging period (1 January to 31 March).

¹ Defined as 'Measurable but limited impact (< 1 year) on marine environment, limited community impact (< 1 month)'

7.5. Atmospheric Emissions

7.5.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Atmospheric emissions	Atmospheric emissions from vessel engines and generators, and incinerators on vessel.	Localised and temporary reduction in ambient air quality from non-GHG emissions and contribution to global GHG emissions.	10	N/A	-	Type A Low Order Impact	Tolerable

7.5.2. Source of Risk

The project vessels use MDO to power vessel engines, generators, mobile and fixed plant and equipment and the incinerator for the duration of the infrastructure removal activities. The combustion of fuel and the incineration of waste on-board the vessels will generate emissions of greenhouse gases, such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O) and non-GHG such as sulphur oxides (SO_x) and nitrous oxides (NO_x), particulate material and volatile organic compounds. These emissions are associated primarily with project vessel fuel consumption and waste incineration.

The average MDO use during the subsea equipment removal activity is approximately 15,000 L per day for the MCV, which yields approximately 40 t CO₂-e.

7.5.3. Environmental Impact Assessment

Atmospheric emissions generated during the infrastructure removal activities will result in a localised, temporary reduction in air quality in the environment immediately surrounding the discharge point and present a negligible contribution to the GHG emissions. The closest residential area is Port Campbell, approximately 7 km to the north of the operational area. The quantities of atmospheric emissions will quickly dissipate into the surrounding atmosphere, therefore will not impact any residential areas. Gaseous emissions under normal circumstances quickly dissipate into the surrounding atmosphere. The impact of atmospheric emissions on air quality is anticipated to be temporary and minor, with no impacts to marine fauna.

7.5.4. Demonstration of As Low As Reasonably Practicable

The atmospheric emissions aspect of the petroleum activity is considered a 'Type A' (lower order) impact based upon the decision context described in Section 6.1.1.

The ALARP process performed for the environmental aspect is summarised in Table 7-17. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable.

Table 7-17: Atmospheric emissions – ALARP demonstration summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Abandon equipment in situ.	Reject	<p>Abandonment in situ would eliminate atmospheric emissions from removal activities. Additional inspection and monitoring activities may be required, which would generate atmospheric emissions.</p> <p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ would preserve benthic habitats associated with the Minerva subsea infrastructure, which some stakeholders may perceive as beneficial due to the increase in biodiversity and abundance.</p> <p>Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-
No incineration of waste on the vessels	Reject	With no incineration on board the vessels, waste could be stored and increase health risk associated. Given the minimal risk of impacts associated with atmospheric emissions and the short duration of the activity, the increase health risks outweigh minimal environmental benefit.	-
Substitution			
Replace very low sulphur fuel oil (VLSFO) use with marine-grade biodiesel	Reject	The substitution of very low sulphur fuel oil (VLSFO) (marine diesel oil) with an alternate marine-grade biodiesel has been tested within the maritime industry, but the large-scale adoption of biodiesel for shipping has not occurred. Therefore, biodiesel is not readily available for use in the region. The control is not practicable.	-
Replace very low sulphur fuel oil (VLSFO) use with ultra-low sulphur fuel oil (ULSFO) of lower-calorific value	Reject	The substitution of very low sulphur fuel oil (VLSFO) (marine diesel oil) with an alternate ultra-low sulphur fuel oil (ULSFO) diesel fuel with a lower calorific value is not feasible given the fuel specification requirements of the vessel generators.	-

Control Measure	Accept / Reject	Reason	Associated Performance Standards
LNG-powered / dual fuel vessels	Reject	LNG / dual-fuel powered vessels have the potential to reduce atmospheric pollutants, but the lower calorific value of LNG compared with MDO means the vessels consume a larger quantity of LNG fuel than MDO for an equivalent voyage. Whilst a limited number of LNG-powered support vessels have been tested for in-field applications, these vessels are not readily accessible to the region. LNG supply chains for refuelling are not as accessible when compared with conventional MDO supply within the region. The control is not practicable.	-
Administrate			
Compliance with Marine Order 97 (Marine Pollution Prevention – Air Pollution)	Accept	Control is based on a legislative requirement and reduces likelihood of air pollution. The control must be adopted.	PS 7.1

7.5.4.1. ALARP Summary

The risk assessment and evaluation has identified controls (Table 7-17) that, when implemented, are considered to manage the impacts of atmospheric emissions from the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential impacts of atmospheric emissions. Additional control measures were identified in Table 7-17 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

7.5.5. Demonstration of Acceptability

Given the adopted controls, the atmospheric emissions aspect of the petroleum activity will not result in potential impacts greater than minor, temporary impact to the environment that will recovery naturally without intervention. Further opportunities to reduce the impacts have been investigated in Table 7-17.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the atmospheric emissions aspect of the petroleum activity have been raised by relevant stakeholders. The environmental impacts meet the Woodside environmental risk acceptability criteria (Section 6.3).

Relevant requirements have been met, including:

- Marine Order 97 (Marine Pollution Prevention – Air Pollution), which gives effect to Annex VI of MARPOL.

The environmental impacts are consistent with the relevant principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The atmospheric emissions aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: Global warming will affect the ability for future generations to meet their needs. Atmospheric emission from the petroleum activity will contribute to the global inventory of GHGs in the atmosphere. These emissions make a very small contribution to Woodside’s overall emissions and the petroleum activity cannot reasonably be completed without these GHG emissions.

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- Biodiversity principle: Woodside recognises the threat global warming poses to biodiversity. However, the nature and scale of the atmospheric emissions aspect from the petroleum activity will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.5.6. Environmental Performance Outcomes, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 7</p> <p>Atmospheric emissions comply with Marine Order requirements.</p>	<p>C 7.1</p> <p>Compliance with Marine Order 97 (Marine Pollution Prevention – Air Pollution).</p>	<p>PS 7.1</p> <p>Compliance with Marine Order 97 (Marine Pollution Prevention – Air Pollution), which details requirements for:</p> <ul style="list-style-type: none"> ▪ International Air Pollution Prevention (IAPP) Certificate, required by vessel class ▪ use of low sulphur fuel when available ▪ Ship Energy Efficiency Management Plan (SEEMP), where required by vessel class ▪ ozone depleting substances (ODS) Record Book ▪ no discharge of ODS ▪ preventive maintenance system (PMS) ▪ onboard incinerator to comply with Marine Order 97. 	<p>MC 7.1.1</p> <p>Marine Assurance inspection records demonstrate compliance with Marine Order 97.</p>

7.6. Vessel and Subsea Discharges

7.6.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Routine discharges from project vessels within operational area	Routine discharge to the marine environment of: <ul style="list-style-type: none"> sewage, grey water and putrescible wastes deck and bilge water brine or cooling water 	Localised, minor, and temporary water quality impacts.	10	N/A	-	Type A Low Order Impact	Tolerable
Discharges during recovery of subsea infrastructure	Discharges of preservation fluid and residual hydraulic fluid during subsea infrastructure recovery. Discharges of material from cuts to subsea infrastructure during recovery	Localised, minor, and temporary water quality impacts. Localised, minor impacts to sediment quality	10	N/A	-	Type A Low Order Impact	Tolerable

7.6.2. Source of Risk

7.6.2.1. Discharges associated with Vessel Operations

During the activity, the vessels will generate and routinely discharge to the marine environment treated sewage, grey water, putrescible (food) wastes, desalination brine, cooling water, bilge water and deck drainage.

Sewage, Grey Water and Food Waste

The volume of sewage, grey water and food wastes generated is directly proportional to the number of persons on board (POB) the vessels. The MCV can accommodate up to 120 persons onboard. The total volume of sewage and grey water generated by the vessels is estimated to be in the order of 5 m³ to 15 m³ per day depending on POB. Food waste generated is typically 1 L per person per day.

Cooling Water

Seawater is used as a heat exchange medium for the cooling of machinery engines on some vessels; others use air cooling. Seawater is pumped onboard the vessel, passes through heat exchangers, and is subsequently discharged from the vessel at a higher temperature than the receiving seawater. Seawater used for cooling is dosed with chlorine following intake and discharged with low residual chlorine concentrations that are rapidly diluted by prevailing water currents.

Bilge water and Deck Drainage

No wastes contaminated with hydrocarbons or chemicals will be routinely discharged from the vessels' deck

drains. Drainage from areas with potential for hydrocarbon or chemical contamination will be directed to a MARPOL compliance oily water separator for treatment prior to discharge.

Rainfall and wash down of the decks may result in minor quantities of chemical residues, such as detergent, entering the deck drainage system.

Desalination Brine Reject from Reverse Osmosis

Potable water is produced onboard the vessels using reverse osmosis (RO) machinery. RO is a membrane-technology filtration method that removes salt molecules and ions from seawater by applying pressure to the solution when it is on one side of a selective membrane. The result is that a brine solution with salinity elevated by approximately 10% is retained on the pressurised side of the membrane and the potable water is allowed to pass to the other side.

Marine Growth

Removed subsea infrastructure may be cleaned either suspended near the deck or on the deck, with the resulting removed marine growth washed into the sea. The pipeline bundle will be relatively free of marine growth as it is buried.

7.6.2.2. Discharges Associated with Subsea Infrastructure Recovery Activities

Removal of the Minerva subsea infrastructure will result in the discharge of the contents of some structures to the sea. Discharges are summarised in Table 7-18. The pipeline, chemical injection lines and production spools were flushed during cessation of production to < 30 ppm hydrocarbons and then filled with potable water treated with preservation chemicals to manage corrosion. The hydraulic cores within the umbilical were not flushed and remain filled with hydraulic fluid. The 2” chemical cross-over spool was unable to be flushed during cessation of production and remains filled with MEG. All chemicals within the Minerva subsea infrastructure that may be discharged to sea were selected in accordance with the chemical selection procedure detailed in the EP that was in force during cessation of production. Some of these chemicals will have degraded or been consumed during the preservation period. Such chemicals may be substantially less toxic when discharged than when initially dosed.

Cutting of the pipeline bundle may release small amounts of material, such as concrete spalling off the pipeline when cut with shears. The rigid spools will be cut with shears, which will result in little discharge of spool material the environment, as the spools will deform rather than fragment.

Marine growth removal on the seabed may need to be removed during equipment removal (e.g., to provide access to valves or rigging points for lifts).

Table 7-18: Description of discharges associated with subsea infrastructure recovery activities

Discharge Material	Description of Discharge
Pipeline Bundle	
Inhibited potable water with residual hydrocarbon (< 30 ppm)	The pipeline and associated chemical injection lines in Commonwealth waters contain inhibited potable water and Hydrosure, to inhibit corrosion and prevent biofouling to preserve the infrastructure until it is decommissioned. The active components of Hydrosure O-3670R blend are: <ul style="list-style-type: none"> ▪ Quaternary ammonium compounds (antimicrobial) ▪ ammonium hydrogen sulphite (oxygen scavenger) ▪ (2-methoxymethylethoxy)propanol Hydrosure O-3670R is biodegradable and does not bioaccumulate or biomagnify. Approximately 239 m ³ of inhibited potable water will be released during pipeline recovery activities in Commonwealth waters. Low levels of hydrocarbons were also confirmed post bundle flushing operations (< 5 ppm) (BHP, 2020).
Hydraulic fluid	The EHU in Commonwealth waters contains approximately 12.6 m ³ of hydraulic fluid (Aqua Glycol HW 510 and Aqua Link 324) that will be released during pipeline recovery activities. The hydraulic fluid is water- and glycol-based.

Discharge Material	Description of Discharge
Concrete spall / swarf	The pipeline cuts will be made using a cutting tool on the pipeline. A small amount of concrete may spall from the pipeline as it is cut.
Plastic and steel swarf	If a diamond wire saw or chop saw is used to cut the pipeline bundle, a small amount of polyethylene plastic and steel swarf will be released to the sea with each cut. The saw kerf is expected to be approximately 5 mm or less, hence the volume of swarf will be correspondingly small.
NORMs and mercury contaminated scale	Traces of scale containing mercury and NORM may be released during recovery of the pipeline. Further information on mercury and NORM in subsea infrastructure is provided in Section 3.5.2.3.
Marine growth removal	If required, marine growth may be cleaned from the Minerva subsea infrastructure on the seabed to facilitate removal by high-pressure water jetting using and ROV. Sulphamic acid may also be used to dissolve calcium deposits on the Xmas trees to allow valve actuation.
Rigid Spools	
Inhibited seawater with residual hydrocarbon (< 30 ppm)	There are two 8" production rigid spools and two 2" chemical injection lines to be recovered with each previously flushed with inhibited seawater and capped during the well isolation activity in 2019. The expected total volume of inhibited seawater for these is up to 19.6 m ³ which will be incrementally discharged into the marine environment with each cut.
Seawater with residual MEG	The 2" chemical injection crossover rigid spool may contain up to 3.6 m ³ of residual MEG that has been mixed with seawater since the well isolation activity and will be discharged into the marine environment.
Steel swarf	If a diamond wire saw or chop saw is used to cut the pipeline bundle, a small amount of steel swarf will be released to the sea with each cut. The saw kerf is expected to be approximately 5 mm or less, hence the volume of swarf will be correspondingly small.
NORMs and Mercury contaminated scale	Traces of scale containing mercury and NORM may be released during recovery of the production spools. Further information on mercury and NORM in subsea infrastructure is provided in Section 3.5.2.3.
Subsea Auxiliary Structures	
Marine growth	If required, marine growth may be removed to facilitate removal by high-pressure water jetting from the Minerva subsea infrastructure.

7.6.3. Environmental Impact Assessment

7.6.3.1. Water Quality

Vessel Discharges

Routine vessel discharges will occur at or near the sea surface. The operational area is located less than 12 nm from land, which is less than the distance required by Marine Order 96 (Marine Pollution Prevention – Sewage) 2009 and Marine Order 95 (Marine Pollution Prevention – Garbage) 2013 at which untreated sewage may be discharged. Therefore, sewage, greywater and food waste will be treated aboard the vessels prior to being discharged overboard. All discharges will comply with MARPOL requirements.

The operational area is an open water environment which is naturally well mixed (as shown by the well-mixed surface layer to approximately 40 m water depth shown in Figure 4-8). Consequently, discharges from vessels are expected to dilute rapidly in the receiving water. Discharges of differing density, such as RO brine and relatively warm cooling water, will not result in stratification of the water column as the volumes are relatively small, the differences in salinity and temperature compared to the receiving environment are relatively small, and the receiving environment is well mixed.

Routine vessel discharges may result in a localised, temporary reduction in water quality. Discharges such as sewage, marine growth, and putrescible waste, may increase the biological oxygen demand in the water column as solids decompose. Given the relatively small volumes and intermittent nature of such discharges, along with the well-mixed and highly oxygenated receiving environment, any decrease in dissolved oxygen will be minor, temporary, and localised.

Discharges from vessels may also increase turbidity and, if traces of oils are present (e.g., in bilge water treated to MARPOL requirements), result in a surface sheen. Turbidity plumes and any surface sheens will dilute and break up rapidly in the receiving environment, with impacts to water quality expected to be limited to within 10s of metres from the discharge location.

Subsea Discharges

Discharges of treated water and chemicals from the Minerva subsea infrastructure will occur during recovery. The discharge may occur at the seabed, in the water column during recovery, and at the sea surface, depending on the rate at which the contents of the recovered infrastructure drains.

Treated potable water in the pipeline, chemical injection lines and spools may result in toxic effects due to the presence of residual chemicals and hydrocarbons. However, given the length of time since dosing, the chemicals in the treated water will have substantially been degraded or consumed and the potential for toxic effects diminished accordingly. The biocide, oxygen scavenger, and corrosion inhibitor in the Hydrosure product were selected in accordance with the chemical selection procedure in the EP that covered the cessation of production activities. These products are biodegradable, do not biomagnify or bioaccumulate. Upon release to the sea, the treated water will mix within the water column and the residual chemicals consumed. The components containing treated water will be recovered in sections, hence the inventory of treated water will be released to the sea gradually.

Residual MEG in the 2" cross-over spool will be substantially diluted with seawater as this spool was left open to the sea following cessation of production. MEG has low toxicity, is biodegradable, and does not bioaccumulate. MEG is considered to pose little or no risk to the environment (PLONOR) by the OSPAR commission.

Water- and glycol-based hydraulic fluid in the umbilical and flying leads was selected in accordance with the chemical selection process in the accepted production EP in force then these fluids were first used. Water- and glycol-based hydraulic fluids are widely used in open subsea hydraulic systems and routinely released to sea at many offshore hydrocarbon production facilities. Water- and glycol-based hydraulic fluids generally have low toxicity, are readily biodegradable and do not bioaccumulate. Given the nature of the hydraulic fluids, along with the relatively small discharge volume, impacts to water quality from their discharge will be negligible.

7.6.3.2. Sediment Quality

Vessel Discharges

Vessel discharges will not credibly impact upon sediment quality given the discharge location at the sea surface, the water depth of the operational area (> 50 m), and the well-mixed open sea receiving environment.

Subsea Discharges

Sediment quality may be impacted by the discharge or release of materials during the removal process. The pipeline bundle and spools are planned to be cut using hydraulic shears – which don't generate swarf – but may be cut with a diamond wire saw or chop saw as a contingency. Some spalling of concrete weight coating will occur at the cut locations. The steel in the pipeline, chemical lines, and spool will deform rather than shatter if cut using shears. A small amount of swarf from the approximately 5 mm width saw kerf will be released if a diamond wire saw or chop saw are used.

Concrete is considered to pose no or negligible risk to the receiving environment. The slow degradation of the concrete spall released during removal of the pipeline bundle will occur as the chloride, sulphate, carbon dioxide and oxygen in the marine environment interact the concrete material. This typically forms a layer of aragonite (CaCO₃) and brucite (Mg(OH)₂) on the concrete surface (Jakobsen, 2016). These degradation products are not toxic.

Steel is considered to have no or negligible toxicity risk to the receiving environment. The small amounts of steel that enter the marine environment as swarf is expected to corrode into insoluble metal oxides. These particles will sink to the seabed, be incorporated into the sediment, and remain in situ.

A small amount of the polyethylene plastic coating on the two 2” chemical lines and umbilical may be released to the environment if the pipeline bundle is cut using a saw that generates swarf. The size of swarf particles is typically small (< 5 mm), hence any plastics released may be regarded as microplastics. Laboratory studies have demonstrated that microplastics can be lethal, but only when animals are exposed to microplastics at concentrations that are orders of magnitude higher than environmentally realistic levels (Lenz et al, 2016). Given only negligible amounts of the microplastics will be released during pipeline bundle removal and recovery activities, the filter-feeding animals living directly adjacent to the pipeline bundle are unlikely to encounter – and eat – enough microplastics to cause lethality.

Traces of scale within the pipeline bundle and spools may also be released as swarf. Studies indicate that there may be traces of mercury (as mercuric sulphide) in the scale within the rigid spools (Section 3.5.2.3). Given the very small quantities of scale measured and consequent small amount of scale swarf, negligible impacts to sediment will occur.

7.6.4. Demonstration of As Low As Reasonably Practicable

The vessel and subsea discharges aspect of the petroleum activity is considered a ‘Type A’ (lower order) impact based upon the decision context described in Section 6.1.1.

The ALARP process performed for the environmental aspect is summarised in Table 7-19. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable.

Table 7-19: Routine and Non-routine discharges – ALARP Assessment Summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Substitution</i>			
Abandon equipment in situ.	Reject	<p>Abandonment in situ would still result in discharges from the Minerva subsea infrastructure, however these would be over a long period of time as the infrastructure degrades.</p> <p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
Use only shears for cutting pipeline bundle and spools to eliminate generation of swarf.	Reject	<p>Tenders for the removal of the Minerva subsea infrastructure included a range of cutting methods, such as hydraulic shears, diamond wire saws, and chop saws.</p> <p>Precluding cutting methods that generate swarf may unreasonably constrain the selection of an execution contractor. Precluding cutting methods may also delay removal activities if there are problems with the shear cut methodology (e.g., equipment failure). Timely execution of the subsea infrastructure removal activities reduces the risk of not meeting the requirements of General Direction 831.</p> <p>The environmental impacts from discharging swarf to the environment are minor and localised. The cost of implementing the control is grossly disproportionate to the environmental benefit.</p>	-
Engineering			
Reduction of mercury from within the Minerva subsea infrastructure prior to removal.	Reject	<p>Studies of the potential mercury contamination within the rigid spools and pipeline indicate mercury predominately exists in the stable and insoluble form of elemental mercury and mercuric sulphide. The scale is hard and only very small amounts of scale (if any) will be released during cutting and recovery.</p> <p>Cleaning of scale prior to removal would require large volumes of cleaning chemicals, which pose an environmental hazard and require safe disposal. Cleaning would require of a temporary onshore facility to push and receive cleaning fluids along the pipeline bundle, which would result in onshore environmental impacts (e.g., vegetation clearing).</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-
Recover pipeline bundle using reverse s-lay methodology	Reject	<p>Reverse s-lay of the pipeline bundle would not require cuts to be made in the pipeline bundle subsea. This may reduce spalling of the concrete weight coat and eliminate swarf from cuts in the pipeline bundle (diamond wire saw or chop saw only).</p>	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>There is no proven track record for concrete coated pipelines, or a concrete coated pipeline bundle, being retrieved by the reverse s-lay method.</p> <p>The piggyback arrangement for the umbilical and chemical supply lines would further complicate reverse s-lay recovery.</p> <p>Reverse s-lay would require a large pipelay vessel to mobilise to the operational area. Suitable pipelay vessels are comparatively very expensive. Suitable pipelay vessels are not readily available, which would prevent the timeframes required by General Direction 831 from being met.</p> <p>The cost of the control Availability of such pipelay vessels is constrain</p>	
Administrate			
Chemicals intended, or likely, to be discharged to the marine environment will have an environmental assessment completed before use.	Accept	<p>Environmental assessment of chemicals will reduce the consequence of impacts resulting from discharges to the marine environment by ensuring chemicals have been assessed for environmental acceptability.</p> <p>Planned discharges are required for the safe execution of activities and therefore no reduction in likelihood can occur.</p>	PS 8.1
Compliance with relevant Marine Orders giving effect to MARPOL.	Accept	<p>Controls based on legislative requirements, must be accepted.</p> <p>Reduces potential impacts of inappropriate discharges from vessels.</p> <p>Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 8.2, PS 8.3, PS 8.4
Pollution Control			
Debris created during Minerva subsea infrastructure removal to be recovered where practicable.	Accept	<p>Recovery of relatively small debris (e.g., cobble-sized concrete) is not feasible due to the small size, however larger debris may feasibly be recovered by ROV. This may reduce man-made material left on the seabed, potentially reducing the environmental impact. An ROV will be available during Minerva subsea infrastructure removal, which could identify and recover relatively large (300 mm x 300 mm) debris created during removal. The as-left ROV survey may also provide an</p>	PS 8.5

Control Measure	Accept / Reject	Reason	Associated Performance Standards
		opportunity to identify and recover relatively large debris.	
Monitoring			
Environmental monitoring program to confirm no unacceptable contamination or damage to the seabed or subsoil caused by titleholder activities, exists within the title.	Accept	Survey results will be used to demonstrate that General Direction 831 and Section 270 requirements have been met (Sections 2.1.2).	PS 2.4.1, PS 2.4.2

7.6.4.1. ALARP Summary

The risk assessment and evaluation has identified controls (Table 7-19) that, when implemented, are considered to manage the impacts of vessel and subsea discharges from the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential impacts of vessel and subsea discharges. Additional control measures were identified in Table 7-19 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

7.6.5. Demonstration of Acceptability

Given the adopted controls, the vessel and subsea discharges by the petroleum activity will not result in potential impacts greater than temporary and minor reduction in water quality and a localised, minor reduction in sediment quality. Further opportunities to reduce the impacts have been investigated in Table 7-19.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the planned vessel and subsea discharges during the petroleum activity have been raised by relevant stakeholders. The environmental impacts meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The vessel and subsea discharges aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The vessel and subsea discharges aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The vessel and subsea discharges aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.6.6. Environmental Performance Outcomes, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 8 Routine vessel discharges comply with Marine Order requirements.</p> <p>EPO 9</p>	<p>C 8.1 Chemicals intended, or likely, to be discharged to the marine environment will have an environmental assessment completed before use.</p>	<p>PS 8.1 All chemicals intended or likely to be discharged to the marine environment selected in accordance with the chemical assessment process (refer to Section 3.10).</p>	<p>MC 8.1.1 Records demonstrate chemical selection, assessment and approval process for chemicals intended, or likely, to be discharged to the marine environment is followed.</p>
<p>Impacts from subsea discharges associated with decommissioning activities limited to localised, temporary changes in water and sediment quality in the vicinity of the discharge location.</p>	<p>C 8.2 Marine Order 95 (marine pollution prevention – garbage) (as appropriate to vessel class), which gives effect to MARPOL Annex V – Garbage.</p>	<p>PS 8.2 Vessel equipment and discharges compliant with Marine Order 95 – pollution prevention – garbage (as appropriate to vessel class), including:</p> <ul style="list-style-type: none"> ▪ putrescible and other food waste discharged macerated to ≤ 25 mm prior to overboard discharge ▪ vessel garbage management plan ▪ vessel garbage record book 	<p>MC 8.2.1 Records demonstrate project vessels are compliant with Marine Order 95 (marine pollution prevention – garbage) (as appropriate to vessel class).</p>
	<p>C 8.3 Marine Order 96 (marine pollution prevention – sewage) (as appropriate to vessel class), which gives effect to MARPOL Annex IV – Sewage.</p>	<p>PS 8.3 Vessels compliant with Marine Order 96 (marine pollution prevention – sewage) (as appropriate to vessel class) which includes the following requirements:</p> <ul style="list-style-type: none"> ▪ No discharge of untreated sewage within 12 nm of the territorial baseline. ▪ No discharge of treated sewage within 3 nm of the territorial baseline. ▪ A valid International Sewage Pollution Prevention Certificate (ISPP), as required by vessel class ▪ An AMSA-approved sewage treatment plant 	<p>MC 8.3.1 Records demonstrate project vessels are compliant with Marine Order 95 (marine pollution prevention – sewage) (as appropriate to vessel class).</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
		<ul style="list-style-type: none"> ▪ Sewage comminuting and disinfecting system ▪ A sewage holding tank sized appropriately to contain all generated waste (black and grey water) ▪ Discharge of sewage will occur at a moderate rate while support vessel is proceeding (> 4 knots), to avoid discharges in environmentally sensitive areas. ▪ No discharge of sewage to cause discoloration or visible solids. 	
	<p>C 8.4 Marine Order 91 (marine pollution prevention – oil) (as appropriate to vessel class), which gives effect to MARPOL Annex I – Oil.</p>	<p>PS 8.4 Project vessels compliant with Marine Order 91 – pollution prevention – oil (as appropriate to vessel class) which includes the following requirements for processing oily water prior to discharge:</p> <ul style="list-style-type: none"> ▪ Valid IOPP Certificate ▪ Machinery space bilge/oily water shall have IMO-approved oil filtering equipment (oil/water separator) with an on-line monitoring device to measure OIW content to be less than 15 ppm prior to discharge ▪ IMO-approved oil filtering equipment shall also have an alarm and an automatic stopping device or be capable of recirculating if OIW concentration exceeds 15 ppm. ▪ There shall be a waste oil storage tank available ▪ If machinery space bilge discharges cannot meet the oil content standard of less than 	<p>MC 8.4.1 Records demonstrate project vessels are compliant with Marine Order 91 (marine pollution prevention – oil) (as appropriate to vessel class).</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
		15 ppm without dilution or treatment by an IMO approved oil/water separator, they will be contained on-board and disposed <ul style="list-style-type: none"> ▪ Valid Shipboard Oil Pollution Emergency Plan (SOPEP) 	
	C 8.5 Debris created during Minerva subsea infrastructure removal to be recovered where practicable.	PS 8.5 Debris greater than 300 mm x 300 mm created during Minerva subsea infrastructure removal will be recovered where practicable.	MC 8.5.1 Records demonstrate that any debris created during Minerva subsea infrastructure removal observed by ROVs greater than 300 mm x 300 mm is recovered where practicable.
	C 2.4 Refer Section 7.2.6.	PS 2.4.1 Refer Section 7.2.6.	MC 2.4.1 Refer Section 7.2.6.
		PS 2.4.2 Refer Section 7.2.6.	

7.7. Solid Waste Generation and Management

7.7.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Waste management	Hazardous and non-hazardous waste generated during project vessel operations	Increase waste to landfill. Additional usage of onshore waste reception facilities. Availability of materials from recycling	10	N/A	-	Type A Low Order Impact	Tolerable
	Recovered subsea infrastructure from decommissioning activities.		30	N/A	-	Type A Low Order Impact	Tolerable

7.7.2. Source of Risk

7.7.2.1. Vessel Operations

Project vessels generate a variety of solid wastes, including domestic and industrial wastes. These include aluminium cans, bottles, paper and cardboard, scrap steel, chemical containers, batteries, and medical wastes. Waste is segregated on-board the project vessels and stored in designated skips and waste containers. Wastes are segregated into the categories of:

- non-hazardous waste (or general waste)
- hazardous waste
- recyclables (further segregation is conducted in line with practices at existing Woodside operations in the region).

General non-hazardous waste includes domestic and galley waste, and recyclables such as scrap materials, packaging, wood and paper and empty containers. Volumes of non-hazardous waste generated on vessels are generally minor and similar to domestic wastes generated by households onshore.

Hazardous wastes are defined as those that are or contain ingredients harmful to health or the environment. Hazardous wastes likely to be generated on-board the project vessels include oil-contaminated materials (such as sorbents, filters, and rags), chemical containers and batteries. The volumes of generated hazardous wastes are relatively minor.

7.7.2.2. Recovered Subsea Infrastructure

Recovered subsea infrastructure will be removed from the title area and disposed of in accordance with the waste management plan developed during the contracting phase. The waste management plan will address the waste management hierarchy and disposal methods and appropriate transfer of ownership of recovered equipment. The waste management plan will include auditing and compliance checks to ensure the requirements of the waste management hierarchy shown in Figure 9-2 are met. Refer to the subsea infrastructure waste management section of the implementation strategy for further information (Section 9.5). Treatment of the subsea infrastructure potentially involves decontamination (e.g., residual contaminants deposited during production) at an onshore location. If treatment is successful, the subsea infrastructure can

be recycled or disposed of. Investigations of potential contamination within the Minerva equipment indicate concentrations of potential contaminants from production are low (Section 3.5.2.3) and required treatment (if any) will not be extensive.

A summary of the equipment in VIC/L22 and VIC/PL33, and VIC/PL33 (vic) (i.e., Commonwealth waters and Victorian coastal waters) is provided in Table 7-20 below, along with the proposed fate for the components of each equipment group. Further information on recycling and disposal is provided in Section 9.5.

Waste generated from decommissioning of well infrastructure could contribute to the increasing pressure on local landfills if not managed appropriately through consideration of the waste hierarchy and alternative means of disposing to landfill. There is also the potential for recovered infrastructure to be incorrectly classified and disposed of inappropriately leading to contamination of waste streams.

Table 7-20: Summary of waste categories and end fates

Material Category	Specification	Weight (t)	Percentage of Total	Proposed Fate
Steel	X52/X60/X65	1006.3	34.7%	Recycle where practicable.
	ASTM Grade	27.9	1.0%	
	Steel Casing Inconel Connectors	3.0	0.1%	
	Ballast	27.1	0.9%	
	Duplex	7.2	0.2%	
Non-ferrous metals	Copper	0.2	0.0%	Recycle where practicable.
	Anodes	31.0	1.1%	
Plastics	PP External Coating	50.2	1.7%	Recycle where practicable. Some plastics will be consumed during deconstruction and not suitable for recycling.
	PP molds	6.3	0.2%	
	Thermoplastic hoses	1.6	0.1%	
Concrete	Concrete	1456.7	50.2%	Recycle where practicable.
	Grout	37.5	1.3%	
	Sand	0.75	0.0%	
Umbilicals	Multiple	246.0	8.5%	Recycle metals and plastics (where practicable).
Total		2901.7	100%	

7.7.3. Environmental Impact Assessment

Waste generated by vessels during the petroleum activity will be transported to and managed appropriately by third parties. Environmental impacts associated with onshore disposal relate to the small incremental increase in waste volumes received at the onshore licensed waste recycling and disposal sites. The environmental impacts associated with waste disposal onshore are anticipated to be minor, based on the minor quantities involved and recycling of some materials.

Hazardous wastes generated by vessels will be classified and managed in accordance with the waste management procedures. This will include ensuring hazardous materials are disposed of by suitable waste management facilities.

Environmental impacts associated with recovered subsea infrastructure disposal will depend on the classification of the waste in accordance with the waste management hierarchy (Section 9.5 and Figure 9-2):

- Reuse of subsea infrastructure has no or very minor environmental impact.

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- Recycling of subsea infrastructure requires energy use associated with a recycling process (e.g., use of heat etc). The use of energy has very minor environmental impact.
- The disposal of subsea infrastructure to landfill contributes to the overall volume of waste going to landfill each year.

Whilst the volumes of waste material associated with the subsea infrastructure are relatively minor compared to the volume of waste going to landfill in Australia each year (estimated at 20 million tonnes each year (Australian Bureau of Statistics, 2020)), the exploration of reducing waste to landfill through recycling and other waste management practices is part of the National Waste Policy Action Plan 2019 (Commonwealth of Australia, 2019).

Whilst Woodside's waste management philosophy follows the waste management hierarchy, in some instances it is not always feasible to reuse and recycle subsea infrastructure waste. If some subsea infrastructure waste goes to landfill the environmental impacts are anticipated to be minor, based on the relatively small quantities involved.

Hazardous waste materials will be classified and managed in accordance with the waste management procedures. This will include ensuring hazardous materials are disposed at suitably licensed waste management facilities. Woodside will provide appropriate assurance over final disposal of recovered equipment. The measured concentrations of potential contaminants deposited during production, such as NORM and mercury, are low (Section 3.5.2.3).

The disposal of recovered subsea equipment will result in indirect impacts. Recovered steel, concrete, and much of the plastic, is expected to be recycled. Recycling may indirectly reduce demand for new steel and plastic, resulting in less consumption of energy and metals used to create steel. Material that cannot be recycled will be disposed of in accordance with the waste management arrangements described in Section 9.5. Material that cannot be recycled will be classified and disposed of in accordance with relevant requirements (e.g., Schedule 5 of the Victorian Environment Protection Regulations 2021), with the end fate determined by the classification. Most non-recyclable wastes are expected to be disposed of in either inert waste or intractable waste landfill facilities. Monitoring and measurements to date indicate very low levels of mercury or NORM contamination (Section 3.5.2.3), hence little or no equipment is expected to be classified as intractable waste. Landfill facilities are limited in volume, and disposal of non-recyclable material by landfill will reduce the capacity of existing landfill facilities. Given the nature of the material that may be disposed of as landfill and the management of landfill facilities, indirect impacts such as groundwater contamination will not credibly occur. Transportation of recovered materials for recycling or disposal will have indirect impacts from the logistics chain, such as greenhouse gas emissions from transportation. Indirect impacts from management of recovered subsea equipment are a measurable but limited impact to the environment, hence the severity and severity factor are considered 2 and 30 respectively (Table 6-3).

7.7.4. Demonstration of As Low As Reasonably Practicable

Waste generated during the petroleum activity is considered a 'Type A' (lower order) impact based upon the Decision Context described in Section 6.1.1 of this EP.

The ALARP process performed for the environmental aspect is summarised in Table 7-21. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable. The result of this ALARP assessment contributes to the overall acceptability of the impact or risk.

Table 7-21: Waste Management – ALARP Assessment Summary

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Eliminate			
Abandon equipment in situ.	Reject	<p>Abandonment in situ would reduce the impacts of waste management and processing from recovered Minerva subsea infrastructure.</p> <p>Abandonment in situ would transfer subsea infrastructure waste from onshore to offshore by disposing of the infrastructure in the sea.</p> <p>Abandonment in situ would not realise recycling opportunities. Much of the Minerva subsea infrastructure is expected to be suitable for recycling.</p> <p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-
Administrate			
Marine Order 95 (pollution prevention – garbage) (as appropriate to vessel class), which gives effect to Annex V of MARPOL.	Accept	Control is based on legislative requirements and reduces the likelihood of an unplanned release. Control must be accepted.	PS 10.1
Disposal of any hazardous waste associated with the subsea infrastructure will comply with the relevant State and Commonwealth legislation.	Accept	Control is based on legislative requirements and reduces the likelihood of an unplanned release. Control must be accepted.	PS 10.2
<p>Waste will be managed in accordance with the waste management plan (Section 9.5).</p> <p>The waste management plan includes details on:</p> <ul style="list-style-type: none"> ▪ waste management hierarchy ▪ storage of waste 	Accept	<p>Reduces the risk of unsuitable disposal through efficient use of resources and reduces the risk of unplanned contamination of waste streams during disposal.</p> <p>Control considered standard practice. Benefits outweigh cost sacrifice.</p>	PS 10.3

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<ul style="list-style-type: none"> ▪ transport and disposal of waste ▪ waste legislation and standards ▪ waste monitoring and reporting. 			
Waste management contractor evaluation and selection will include a preference for contractors who are able to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.	Accept	Waste management practices will aim to reduce the volume of waste to landfill. Control is feasible and can be implemented with minimal cost. Control considered standard practice. Benefits outweigh cost sacrifice.	PS 10.4

7.7.4.1. ALARP Summary

The risk assessment and evaluation has identified controls (Table 7-21) that, when implemented, are considered to manage the impacts of solid waste generation and management from the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the potential impacts of solid waste generation and management. An additional control measure was identified in Table 7-21 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

7.7.5. Demonstration of Acceptability

Solid waste generation and management cannot be eliminated. The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding solid waste generation and management have been raised by relevant stakeholders. Given the adopted controls, solid waste generation and management will not result in potential impacts greater than measurable but limited impacts to the environment and community. Further opportunities to reduce the impacts have been investigated in Table 7-21.

All waste streams will be managed in accordance with applicable legislative requirements, and/or in accordance with international guidance where applicable, including:

- Victorian Environment Protection Regulations 2021
- *Navigation Act 1912* and the Protection of the Sea (Prevention of Pollution from Ships) Act 1983 and associated Marine Order 95 - Marine Pollution Prevention—Garbage, which gives effect to MARPOL Annex V – Garbage
- *Hazardous Waste (Regulation of Exports and Imports) Act 1989* (Cth) which implements the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (the Basel Convention)
- The Minamata Convention on Mercury (the Minamata Convention)

Article 9 of the Minamata Convention requires parties to implement measures to control releases of mercury, with measures to include one or more of the measures described in Table 7-22.

Table 7-22: Demonstration of alignment with relevant articles of the Minamata Convention

Measures in Article 9(5) of the Minamata Convention	Justification for Implementation or Rejection of the Measure
Release limit values to control and, where feasible, reduce releases from relevant sources	Sampling in the Minerva field detected some mercury in the rigid production spool (as thin hard scale and elemental mercury, with negligible organic mercury, Section 3.5.2.3). Studies indicated the mercury is bound within scale which requires abrasion to dislodge and will not readily be released during recovery of the Minerva subsea infrastructure.
The use of best available techniques and best environmental practices to control releases from relevant sources	Woodside has reviewed the Guidance on Best Available Techniques and Best Environmental Practices - Minamata Convention on Mercury (United Nations Environment Program, 2019). The best available techniques described in this document only apply to facilities listed in Annex D of the Minamata Convention, which excludes offshore oil and gas production facilities; none of the best available techniques are applicable to the waste generation aspect of the petroleum activity. Using best available techniques is intended to prevent or limit the release of mercury to the environment. The nature and scale of mercury within the Minerva equipment will prevent or limit the release of mercury to the environment. Hence, the intent of using best available techniques has been maintained.
A multi-pollutant control strategy that would deliver co-benefits for control of mercury releases	Woodside will implement a waste management plan which will manage mercury contamination within the Minerva subsea infrastructure. This includes management of mercury onshore, where mercury collected during decontamination will be managed in accordance with relevant requirements.
Alternative measures to reduce releases from relevant sources.	No other opportunities to reduce releases of mercury were identified.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1972 (Basel Convention) limits the international movement of hazardous waste. Equipment contaminated with NORM and mercury may meet the criteria for hazardous waste defined by the Basel Convention, depending on the level of contamination. All equipment that may be exported for re-use or recycling will be confirmed to not constitute hazardous waste (as defined by the Basel Convention).

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the solid waste generation and management aspect within the scope of this EP have been raised by relevant stakeholders. The environmental impacts meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental impacts are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations. Woodside’s waste management hierarchy for decommissioning prefers re-use, re-purposing, and recycling over disposal with no subsequent beneficial use.
- Precautionary principle: The solid waste generation and management aspect, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The solid waste generation and management aspect will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The solid waste generation and management aspect will not impact upon biodiversity or ecological integrity.

Woodside considers the impact to be managed to an acceptable level.

7.7.6. Environmental Performance Outcomes, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 10</p> <p>Waste generated is segregated and disposed of onshore in accordance with relevant legislation.</p>	<p>C 10.1</p> <p>Marine Order 95 (pollution prevention – garbage) (as appropriate to vessel class), which gives effect to Annex V of MARPOL.</p>	<p>PS 10.1</p> <p>Vessels compliant with Marine Order 96 (marine pollution prevention – sewage) (as appropriate to vessel class) which includes the following requirements:</p> <ul style="list-style-type: none"> ▪ No discharge of garbage at sea unless permitted by MARPOL ▪ Maintain a Garbage record book ▪ Maintain a Garbage Management Plan ▪ Incinerators to comply with MARPOL Annex V requirements 	<p>MC 10.1.1</p> <p>Records demonstrate project vessels are compliant with Marine Order 95.</p>
	<p>C 10.2</p> <p>Disposal of any hazardous waste from the petroleum activity will comply with the relevant State and Commonwealth legislation.</p>	<p>PS 10.2</p> <p>Disposal of any hazardous waste associated with the petroleum activity will comply with the relevant State and Commonwealth legislation:</p> <ul style="list-style-type: none"> ▪ <i>Commonwealth Hazardous Waste (Regulation of Exports and Imports) Act 1981</i> ▪ <i>Environment Protection Act 2017 (Victoria)</i> ▪ Environment Protection Regulations 2021 (Victoria) ▪ Minamata Convention 	<p>MC 10.2.1</p> <p>Records demonstrate disposal of hazardous waste associated with the subsea infrastructure was compliant with relevant Commonwealth and State legislation.</p>
	<p>C 10.3</p> <p>Waste will be managed in accordance with the waste management plan (Section 9.5). The waste management plan includes details on:</p> <ul style="list-style-type: none"> ▪ waste management hierarchy 	<p>PS 10.3</p> <p>Decommissioning waste generated from subsea infrastructure removal is managed in accordance with the waste management plan described in Section 9.5), including:</p> <ul style="list-style-type: none"> ▪ 90% by weight recycling of materials 	<p>MC 10.3</p> <p>Records demonstrate that subsea infrastructure removal wastes are managed in accordance with the waste management plan.</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<ul style="list-style-type: none"> ▪ storage of waste ▪ transport and disposal of waste ▪ waste legislation and standards ▪ waste monitoring and reporting. 	<ul style="list-style-type: none"> ▪ decontamination of waste (if required) prior to recycling or disposal ▪ storage, transportation, and disposal of equipment in accordance with Environment Protection Regulations 2021 (Victoria) ▪ tracking of waste to final disposal location 	
	<p>C 10.4</p> <p>Waste management contractor evaluation and selection will include a preference for contractors who are able to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.</p>	<p>PS 10.4.1</p> <p>Waste management contractor selected based on an assessed capability to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.</p>	<p>MC 10.4.1.1</p> <p>Records show that waste management contractor evaluation and selection was based on an assessed capability to follow the waste management hierarchy philosophy, including achieving recycling targets and minimising waste volumes disposed to landfill.</p>
		<p>PS 10.4.2</p> <p>Woodside to undertake waste management contractor audit to verify performance against waste management plan.</p>	<p>MC 10.4.2.1</p> <p>Records of waste management contractor audit.</p>

8. Environmental Risk Assessment: Unplanned Events

This section addresses the requirements of Regulations 21(5) and 13(6) of the Environment Regulations by assessing and evaluating:

- the environmental impacts and risks associated with the petroleum activity
- the associated control measures that will be applied to reduce the impacts and risks to ALARP and an acceptable level.

The environmental aspects and sources of risk identified during the ENVID process were divided into planned activities (i.e., routine operations) and unplanned events (i.e., incidents). This section presents the environmental impacts and risks associated with unplanned events. Table 8-1 summarises the risk analysis for the aspects associated with the unplanned events. A comprehensive risk assessment for each of the unplanned events, and subsequent control measures proposed by Woodside to reduce the risks to ALARP and acceptable levels, are detailed in the following subsections.

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Table 8-1: Summary of the environmental impact and risk analysis for unplanned events

Unplanned Events	Value Potentially at Risk / Impact												Risk Assessment & Evaluation			
	Environmental								Socio-Economic							
	Marine Mammals	Marine Reptiles	Fish	Seabirds / Shorebirds	Seabed / Benthic Habitat	Water Quality	Air Quality	Marine Protected Areas	Key Ecological Features	Commercial Fisheries	Shipping Activities	Tourism / Recreation	Severity Factor	Likelihood Factor	Residual Risk	Acceptability
Hydrocarbon release from Vessel Collision or Bunkering Incident (Section 8.2)																
Vessel collision and surface release of MDO	x	x	x	x		x		x	x	x	x	x	100	0.1	10	Tolerable
Bunkering incident and surface release of MDO	x	x	x	x		x			x				10	0.3	3	Tolerable
Unplanned Spills of Chemicals and/or Hydrocarbons (Section 8.3)																
Minor spills and leaks of chemicals and/or hydrocarbons from project vessels and subsea equipment such as ROVs	x	x	x	x	x	x			x				10	0.1	1	Tolerable
Loss of Solid Waste (including Dropped Objects) (Section 8.4)																
Accidental loss of solid waste to the marine environment	x	x	x	x	x	x			x				10	0.3	3	Tolerable
Dropped objects overboard from project vessels						x			x				10	0.3	3	Tolerable
Marine Fauna Interaction (Section 8.5)																
Accidental collision between project vessel and marine fauna	x	x											30	0.1	3	Tolerable
Introduction of Invasive Marine Species (Section 8.6)																
Biofouling of project vessels and submersible equipment, or through ballast water exchange					x				x	x		x	100	0.1	10	Tolerable

8.1. Quantitative Spill Risk Assessment Methodology

The worst-case credible release scenario for this EP is defined as a vessel collision resulting in the release of marine diesel into the marine environment and is presented in Section 8.2.

Quantitative hydrocarbon spill modelling was performed by GHD (2022) on the worst-case credible release scenario using a three-dimensional (3D) hydrocarbon spill trajectory and weathering model developed by SINTEF – the Oil Spill Contingency and Response (OSCAR) system. OSCAR is designed to simulate the transport, spreading and weathering of specific hydrocarbon types under the influence of changing meteorological and oceanographic forces.

The stochastic model within OSCAR performs many simulations for a given release site, varying the release time for each simulation. The model uses the spill time to select samples of current and wind data from a long time series hindcast of wind and current data. Hence, the transport and weathering of each slick will be subject to a different sample of wind and current conditions. More simulations will tend to use the most commonly occurring conditions, while conditions that are more unusual will be represented less frequently.

Results of the replicate simulations are statistically analysed and mapped to define contours of percentage probability of contact at identified thresholds around the hydrocarbon release point. The stochastic approach captures a wide range of potential weathering outcomes under varying environmental conditions, which is reflected in the aggregated spatial outcomes showing the areas that might be affected by sea surface and subsurface hydrocarbons.

The modelling outcomes are presented in Section 8.2 and provide a conservative understanding of where a large-scale marine diesel release could travel in any metocean condition. The modelling does not consider any of the spill prevention, mitigation and response capabilities that would be implemented in response to the spill. Therefore, the modelling results represent the maximum extent that may be affected.

A 330 m³ marine diesel oil (MDO) release was modelled at the Minerva-4 well location (deemed to be a representative location for vessel-based activities considered in this EP) for all seasons. This scenario is considered appropriate, although conservative, for informing the approximate spatial extent of potential impacts from a worst-case credible release from a vessel collision during the petroleum activity.

Environmental receptors selected for the modelling are chosen based on protected area status, sensitivity of habitats to impact, societal values. Table 8-2 presents the parameters and justification used in the modelling.

Table 8-2: Summary of parameters for hydrocarbon spill modelling

Parameter	Description
Number of spill simulations	400 simulations in total
Hydrocarbon type	MDO
Release type	Surface release
Total spill volume	330 m ³
Spill volume justification	Largest single tank for any project vessel
Release duration	6 hours

8.1.1. Hydrocarbon Properties

The worst-case credible release scenario for this EP is a vessel collision resulting in the release of MDO into the marine environment, as presented in Section 8.2. MDO is categorised as a Group II oil (light-persistent) based on categorisation and classification derived from AMSA (2015) guidelines. It has a specific gravity of 843 kg/m³ (API of 36.4) and a low pour point of -36 °C (GHD, 2022). The low viscosity (3.9 cP at 20 °C) indicates this oil will spread quickly when released and will form a thin to low thickness film on the sea surface, increasing the rate of evaporation. Generally, about 1% of the MDO mass would still be remaining after 72 hours.

Some heavy components contained in MDO have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (in other words, >12 knots) and breaking waves, but can re-float to the surface if these energies abate. MDO has a low asphaltene content and does not tend to form stable emulsions. The MDO properties are summarised in **Table 8-3**.

Table 8-3: Marine diesel characteristics

Hydrocarbon type	Initial Density (kg/m ³)	Viscosity (cP)	Wax content (%)	Asphaltene Content (%)
Marine diesel	0.843C	3.9 @ 20 °C	0.05	0.05

8.1.2. Hydrocarbon Exposure Values

As described in Section 4.1, the spatial extent of the ecological and socio-economic EMBA has been derived using stochastic hydrocarbon fate and transport modelling of the worst-case credible release scenario. To present this large amount of simulated data in a meaningful way and to inform the impact and risk assessment and environmental management actions, appropriate hydrocarbon exposure values were applied to each of the hydrocarbon components. *Bulletin #1 Oil Spill Modelling* (NOPSEMA, 2019) recommends selecting hydrocarbon exposure values that broadly reflect the range of consequences that could occur at various concentrations.

The ecological and socio-economic EMBA presented in Figure 4-1 was defined using exposure thresholds values presented in Table 4-1.

As the weathering of different components of hydrocarbons (surface, entrained and dissolved) differs due to the influence of the metocean conditions, the EMBA combines the potential spatial extent of the different hydrocarbon components. The EMBA also includes areas that are predicted to experience shoreline contact with hydrocarbons above threshold concentrations.

Hydrocarbon contact below the defined thresholds may occur outside the EMBA; however, the effects of these low exposure values will be limited to temporary exceedance of water quality triggers.

Table 8-4 presents justification for the exposure thresholds used to define the EMBA. The table also details how different exposure threshold values are relevant to the impact assessment for an MDO release (Section 8.2).

Table 8-4: Descriptions of hydrocarbon exposure thresholds

Threshold Exposure Value	Description
Surface Hydrocarbons	
1 g/m ²	Low: It is recognised that 1 g/m ² represents the practical limit of observing hydrocarbon sheens in the marine environment. This exposure value is below the levels that would cause ecological impacts but is considered relevant to approximate the area of effect to socio-economic receptors. This exposure value has been used to define the spatial extent of the EMBA from surface hydrocarbons
10 g/m ²	Moderate: This value is considered appropriate to assess ecological impact risk, as it is the estimate for the minimum thickness of oil that will result in harm to seabirds through ingestion from preening of contaminated feathers, or the loss of thermal protection of their feathers. This has been estimated by at 10 to 25 g/m ² (French-McCay, 2009; Koops et al., 2004). Furthermore, based on literature reviews on aquatic birds and marine mammals (Clark, 1984; Engelhardt, 1983; Geraci and St Aubin, 1988; Jenssen, 1994), the exposure value for harmful impacts is 10 g/m ² . This exposure value is used to determine the risk of exposure that can cause adverse impact to turtles, seasnakes, marine mammals and seabirds. This threshold was selected as a reasonable and conservative value to apply to the risk evaluation with respect to surface hydrocarbons.

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Threshold Exposure Value	Description
50 g/m ²	High: This high exposure value for surface oil is above the minimum threshold observed to cause ecological effect. At this concentration surface hydrocarbons would be clearly visible on the sea surface.
Shoreline Hydrocarbons	
10 g/m ²	Low: This low exposure value defines the area for potential socio-economic impacts (for example, reduction in aesthetic value of the area). This exposure value has been used to define the spatial extent of the EMBA from shoreline hydrocarbons.
100 g/m ²	Moderate: The concentration for exposure to hydrocarbons stranded on shorelines is derived from levels likely to cause adverse impacts to intertidal habitats and associated fauna. Studies have reported oil thicknesses of 0.1 mm (100 g/m ²) as the lethal exposure values for benthic epifaunal invertebrates on intertidal habitats (rock, artificial or human-made) and in intertidal sediments (mud, silt, sand and gravel) (French McCay, 2004; French McCay et al., 2003; French-McCay, 2009). It is also the impact threshold assumed for oiling of birds (French McCay, 2004). This exposure value has been used to inform the risk evaluation with respect to accumulated shoreline hydrocarbons and the threshold for shoreline response, based on possible clean-up options.
1,000 g/m ²	High: This low exposure value predicts the area likely to require intensive clean-up effort.
Entrained Hydrocarbons	
10 ppb	Low: Total submerged hydrocarbons, also referred to as 'total water-accommodated fraction' or entrained hydrocarbons, encompass oil droplets in the water column. Much of the published scientific literature does not provide sufficient information to determine if toxicity is caused by the dissolved or the entrained hydrocarbon component, but rather the toxicity of total submerged hydrocarbons. Variation in the methodology of the water-accommodated fraction may account for much of the observed wide variation in reported threshold values, which also depend on the test organism, duration of exposure, oil type and the initial oil concentration. The 10 ppb exposure value represents the very lowest concentration and corresponds with the lowest trigger levels for total hydrocarbons in water recommended in the <i>Australian and New Zealand Guidelines for Fresh and Marine Water Quality: Volume 1 - the Guidelines</i> (Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, 2000)
100 ppb	Moderate: This exposure value is considered conservative in terms of potential sub-lethal impacts to most species and lethal impacts to sensitive species based on literature for toxicity testing. Total oil toxicity acute effects of total oil as LC50 for molluscs range from 500 to 2000 ppb. A wider range of LC50 values have been reported for species of crustacea and fish from 100 to 258,000,000 ppb (Clark et al., 2001; Gulec et al., 1997; Gulec and Holdway, 2000) and 45 to 465,000,000 ppb (Barron et al., 2004; Gulec and Holdway, 2000) respectively. This exposure value has been used to define the spatial extent of the EMBA from total submerged hydrocarbons and used to describe environmental sensitivities within the EMBA. This exposure value has been used to inform the risk evaluation with respect to entrained hydrocarbons and used to describe environmental sensitivities within the EMBA.
Dissolved Aromatic Hydrocarbons	
10 ppb	Low: This low exposure value establishes the planning area for scientific monitoring (based on potential for exceeding water quality triggers).
50 ppb	Moderate: This exposure value approximates toxic effects, particularly sub-lethal effects to sensitive species (NOPSEMA, 2019). French-McCay et al. (2002) indicates an average 96-hour LC50 of

Threshold Exposure Value	Description
	<p>around 50 ppb could serve as an acute lethal threshold. For most marine organisms, a concentration of between 50 and 400 ppb is considered to be more appropriate for risk evaluation.</p> <p>This exposure value has been used to inform the risk evaluation with respect to dissolved hydrocarbons and used to describe environmental sensitivities within the EMBA.</p>

8.1.3. Scientific Monitoring

A planning area for scientific monitoring is defined with reference to the low-exposure entrained value of 10 ppb detailed in *Bulletin #1 Oil Spill Modelling* (NOPSEMA, 2019). This low exposure threshold is based on the potential for exceeding water quality triggers.

The scientific environmental monitoring program would be activated in accordance with the petroleum activity OPEP (Appendix E), or any release event with the potential to contact sensitive environmental receptors.

8.2. Hydrocarbon Release – Vessel Collision

8.2.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Unplanned surface release of MDO	Surface release of MDO from a project vessel from a vessel collision.	Temporary and localised reduction in water quality with potential for toxicity effects to marine fauna and flora, oiling of offshore, nearshore and shoreline habitats. Impacts to socio-economic receptors.	100	0.1	10	Type A Lower Order Risk	Tolerable
			10	0.03	3	Type A Lower Order Risk	Tolerable

8.2.2. Source of Risk

8.2.2.1. Surface Release of Marine Diesel Oil from a Project Vessel from a Vessel Collision

Project vessels will be in the operational area during the petroleum activity, with removal of the Minerva subsea infrastructure expected to take approximately 45–60 days in Commonwealth waters. Project vessel fuel oil capacities are presented in Section 3.9. MDO on the project vessels is distributed into multiple single tanks on the project vessels. The largest single fuel tank is < 330 m³ on the MCV used for infrastructure removal activities and presents the maximum credible release volume that could be released in the event of a vessel collision. This scenario is the worst-case credible spill scenario for the petroleum activity and was modelled accordingly (Section 8.1).

The likelihood of a vessel collision is unlikely, given slow-moving vessel operations associated with the petroleum activity, the historical absence of large third-party vessel transiting the operational area, and the controls in place to prevent collision at sea.

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There is little third-party vessel activity in the operational area. There are no designated shipping lanes within the operational area and little historical commercial fishing. Commercial shipping is concentrated well to the south of the operational area.

8.2.2.2. Oil Spill Modelling Results

The EMBA for the worst-case MDO release is presented in Figure 4-1. The outer extent of the ecological and socio-economic EMBA is derived from the oil spill modelling defined using the hydrocarbon exposure thresholds in Table 4-1 and is based on the combined area of contact for all hydrocarbon components (surface, shoreline dissolved and entrained hydrocarbons). The modelling results below are presented for each hydrocarbon component at the hydrocarbon exposure thresholds defined in Table 4-1.

Sea Surface Hydrocarbons

Low exposure (>1 g/m²)

For autumn-winter, surface oiling exceeding the low threshold (1 g/m²) was predicted to occur up to ~25 km west and ~75 km east of the spill location. For spring-summer, surface oiling exceeding the low threshold (1 g/m²) was predicted to occur up to ~40 km west and ~30 km east of the spill location.

Moderate exposure (>10 g/m²) to High exposure (>50 g/m²)

For autumn-winter, the maximum spatial extent of surface oiling at the moderate (10 g/m²) and high (50 g/m²) thresholds was reduced to within ~25 km and ~10 km of the spill site, respectively. Summarised contact predictions for surface oil at the moderate threshold (10 g/m²) include:

- For marine reserves, low contact probabilities were predicted at The Arches state marine park (<1%) and the Twelve Apostles state marine park (5%), with maximum time-averaged concentrations of 13 and 26 g/m², respectively, and minimum arrival times of 1.3 and 0.3 days, respectively.
- The spill site is located within the Otway IMCRA region. Therefore, Otway was contacted with 99% probability (meaning 1% of realisations did not generate a surface slick exceeding 10 g/m²), a maximum time-averaged concentration of 276 g/m² and a minimum arrival time of 0.1 days (i.e., 2 hours, or 1 model time step).

For spring-summer, the maximum spatial extent of surface oiling at the moderate (10 g/m²) and high (50 g/m²) thresholds was reduced to within ~25 km and ~10 km of the spill site, respectively. Summarised contact predictions for surface oil at the moderate threshold (10 g/m²) include:

- For IBRA regions (including neighbouring state waters), a low-moderate contact probability of 31% was predicted at the Warrnambool Plain with a maximum local time-averaged concentration of 107 g/m² and a minimum arrival time of 0.2 days (4 hours).
- For marine reserves, a very low contact probability was predicted at the Twelve Apostles state marine park (1%), with a maximum time-averaged concentration of 15 g/m² and a minimum arrival time of 0.6 days.
- The spill site is located within the Otway IMCRA region. Therefore, Otway was contacted with 100% probability, a maximum time-averaged concentration of 252 g/m² and a minimum arrival time of 0.1 days (i.e., 2 hours, or 1 model time step).

Dissolved Hydrocarbons

Low Exposure (>10 ppb)

For autumn-winter, dissolved hydrocarbons at the low threshold (10 ppb) were predicted to occur at distances of up to ~75 km west and ~150 km east of the spill site.

For Spring-Summer, dissolved hydrocarbons at the low threshold (10 ppb) were predicted to occur at distances of up to ~90 km west and ~80 km east of the spill site.

Moderate Exposure (>50 ppb) to High exposure (>400 ppb)

For autumn-winter, the maximum spatial extents at the moderate (50 ppb) and high (400 ppb) thresholds were reduced to ~90 km and ~25 km, respectively. Summarised contact predictions for dissolved hydrocarbons at the moderate threshold (50 ppb) include:

- For marine reserves, a moderate contact probability was predicted at the Twelve Apostles state marine park (39%), with a maximum time-averaged concentration of 648 ppb and a minimum arrival time of

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0.3 days. A very low contact probability of <1% was also predicted at The Arches state marine park, with a maximum time averaged concentration of 52 ppb and a minimum arrival time of 1.3 days.

- The spill site is located within the Otway IMCRA region. Therefore, Otway was contacted with 100% probability, a maximum time-averaged concentration of 4,349 ppb and minimum arrival time of 0.1 days (i.e., 2 hours, or 1 model timestep).

For spring-summer, the maximum spatial extents at the moderate (50 ppb) and high (400 ppb) thresholds were reduced to ~75 km and ~50 km, respectively. Summarised contact predictions for dissolved hydrocarbons at the moderate threshold (50 ppb) include:

- For marine reserves, a moderate contact probability was predicted at the Twelve Apostles state marine park (33%), with a maximum time-averaged concentration of 1,698 ppb and a minimum arrival time of 0.3 days
- The spill site is located within the Otway IMCRA region. Therefore, Otway was contacted with 100% probability, a maximum time-averaged concentration of 5,708 ppb and minimum arrival time of 0.1 days (i.e., 2 hours, or 1 model time step).

Total Submerged Hydrocarbons (entrained plus dissolved)

Low exposure (>10 ppb)

For autumn-winter, total submerged oil at the low threshold (10 ppb) was predicted to occur up to ~150 km to the west and ~450 km east of the spill site.

For spring-summer, total submerged oil at the low threshold (10 ppb) was predicted to occur up to ~225 km to the west and ~150 km east of the spill site.

High exposure (>100 ppb)

For autumn-winter, exposure at the high threshold (100 ppb) was limited to within ~80 km west and ~150 km east of the spill site. Summarised contact predictions for total submerged oil at the high threshold (100 ppb) include:

- For marine reserves, a moderate contact probability was predicted at the Twelve Apostles state marine park (49%), with a maximum time-averaged concentration of 1,584 ppb and a minimum arrival time of 0.2 days. A very low contact probability of 2% was also predicted at The Arches state marine park, with a maximum time averaged concentration of 283 ppb and a minimum arrival time of 0.4 days. The Apollo AMP was predicted to be contacted with low probability (3%), a maximum time-averaged concentration of 169 ppb and a minimum arrival time of 1.4 days.
- The spill site is located within the Otway IMCRA region. Therefore, Otway was contacted with 100% probability, a maximum time-averaged concentration of 7,711 ppb and minimum arrival time of 0.1 days (i.e., 2 hours, or 1 model timestep). The IMCRA regions of Central Victoria and Central Bass Strait had very low predicted contact probabilities of 3% and 1%, respectively, with maximum time-averaged concentrations of 179 and 126 ppb, respectively, and minimum arrival times of 1.6 and 2.1 days, respectively.

For spring-summer, Exposure at the high threshold (100 ppb) was limited to within ~90 km west and east of the spill site. Summarised contact predictions for total submerged oil at the high threshold (100 ppb) include:

- For marine reserves, a moderate contact probability was predicted at the Twelve Apostles state marine park (45%), with a maximum time-averaged concentration of 2,566 ppb and a minimum arrival time of 0.2 days. A very low contact probability of 3% was also predicted at The Arches state marine park, with a maximum time averaged concentration of 348 ppb and a minimum arrival time of 0.3 days.
- The spill site is located within the Otway IMCRA region. Therefore, Otway was contacted with 100% probability, a maximum time-averaged concentration of 8,929 ppb and minimum arrival time of 0.1 days (i.e., 2 hours, or 1 model time step).

Shoreline Accumulated Hydrocarbons

Low exposure (>10 g/m²)

For autumn-winter, shoreline loading above the low threshold (>10 g/m²) was predicted to occur between the

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Warrnambool Plain (~150 km west) and Wilsons Promontory (~500 km east).

For spring-summer, shoreline loading above the low threshold ($>10 \text{ g/m}^2$) was predicted to occur between the Victorian Volcanic Plain (~200 km west) and the Otway Ranges (~125 km east).

Moderate exposure ($>100 \text{ g/m}^2$) to High exposure ($>1,000 \text{ g/m}^2$)

For autumn-winter, At the moderate (100 g/m^2) and high ($1,000 \text{ g/m}^2$) thresholds, predicted shoreline accumulation was limited to within a 100 km distance from the well site, spanning the Warrnambool Plain, Otway Plain and Otway Ranges. At the moderate threshold (100 g/m^2), a high contact probability of 74% was predicted across all shorelines, with individual contact probabilities of 63% at the Warrnambool Plain, 29% at the Otway Plain and 13% at the Otway Ranges. Across all shorelines, the predicted maximum accumulated shoreline load was 187 tonnes, with a minimum arrival time of 0.2 days (4 hours) and a maximum oiled shoreline length of 35 km. Maximum accumulated shoreline loads at individual receptors were 187 tonnes at the Warrnambool Plain, 27 tonnes at the Otway Plain and 7 tonnes at the Otway Ranges, with minimum arrival times of 0.2, 1.0 and 0.8 days, respectively, and maximum oiled shoreline lengths of 30, 21 and 9 km, respectively.

For spring-summer, at the moderate (100 g/m^2) and high ($1,000 \text{ g/m}^2$) thresholds, predicted shoreline accumulation was limited to within a 100 km distance from the well site, spanning the Warrnambool Plain, Otway Plain and Otway Ranges. At the moderate threshold (100 g/m^2), a high contact probability of 76% was predicted across all shorelines, with individual contact probabilities of 74% at the Warrnambool Plain, 16% at the Otway Plain and 10% at the Otway Ranges. Across all shorelines, the predicted maximum accumulated shoreline load was 152 tonnes, with a minimum arrival time of 0.2 days (4 hours) and a maximum oiled shoreline length of 33 km. Maximum accumulated shoreline loads at individual receptors were 152 tonnes at the Warrnambool Plain, 24 tonnes at the Otway Plain and 5 tonnes at the Otway Ranges, with minimum arrival times of 0.2, 1.4 and 1.2 days, respectively, and maximum oiled shoreline lengths of 30, 17 and 10 km, respectively.

8.2.3. Environmental Impact Assessment

The potential impacts of surface, shoreline, entrained, and dissolved hydrocarbons on sensitive receptors occurring within the ecological and socio-economic EMBA is provided in Table 8-5.

A worst-case MDO release to the marine environment would result in a localised and temporary reduction in water quality in the upper surface waters of the water column. While MDOs are generally considered to be non-persistent oils, they a small percentage by volume of hydrocarbons that are classified as persistent.

When released at sea, MDO will spread and thin out quickly and more than half of the volume can be lost to evaporation. No shoreline contact above the impact threshold concentration is predicted to occur.

A worst-case release of MDO from a vessel collision has the potential to have an impact to the environment within the EMBA, lasting a period of one to three years. Given the extent, the worst-case severity is considered to be substantial.

8.2.3.1. Species Recovery Plans, Threat Abatement Plans, and Conservation Advice

Several recovery plans and conservation advice identify either direct or indirect impacts of oil pollution as a threat. Taxa subject to such plans are considered in Table 8-5.

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Table 8-5: Impacts of a 330 m³ MDO release on sensitive receptors

Receptor	Impacts
Physical Environment	
Water quality	A hydrocarbon spill will result in a temporary decrease in water quality within the EMBA. Modelling indicates most MDO will evaporate, with in-water fractions becoming dispersed and degrading through natural processes. Recovery to pre-spill conditions is expected to occur within days to weeks. Hence the impact will be temporary but may occur over a wide area.
Sediment quality	No impacts to sediment quality are expected, as the spilled hydrocarbons are associated with surface waters.
Marine Fauna	
Plankton (including zooplankton, larvae)	<p>Plankton could include the organisms that complete their life cycle as plankton (e.g., copepods), as well as eggs and larvae of many taxa that are not planktonic when mature. Physical contact of small hydrocarbon droplets may impair plankton mobility, feeding and respiration.</p> <p>There is potential for localised mortality of plankton due to reduced water quality and toxicity.</p> <p>The likelihood of impacts to plankton would be determined by the extent and timing of the spill; for example, a spill during summer months may impact planktonic assemblages associated with higher productivity from upwelling.</p> <p>The different life stages of plankton often show widely different tolerances and reactions to oil pollution. Usually the eggs, larval and juvenile stages will be more susceptible than the adults. Surface and entrained oil could impact fish eggs and larvae due to entrainment in surface slicks. However, fish eggs and larvae are highly dispersive and are carried significant distances by ocean currents. Any impacts to fish eggs and larvae are not anticipated to significantly impact on fish populations.</p>
Fish, sharks and rays (including commercial species)	<p>The ecological EMBA overlaps a white shark distribution BIA, however the EMBA is not known to be particularly important habitat or host aggregations of white sharks.</p> <p>Short-finned eel adults and larvae may occur within the EMBA, which are culturally important to First Nations groups. Given the life history of short-finned eels and the nature and scale of the hydrocarbon spill risk, no impacts at a population level would occur. Adult short-finned eels spend daylight hours near the seabed and ascend to near the surface, hence they are only likely to encounter spilled hydrocarbons during night. The migration and recruitment periods are protracted, and the distribution of the species is across much of south-eastern Australia. Eels in freshwater environments, where they spend most of their life cycle, will not credibly be impacted. Hence, only a very small portion of the population would credibly be impacted by a hydrocarbon spill.</p> <p>The most likely impact to fish, shark and rays is from the dissolved aromatic hydrocarbons or entrained hydrocarbon droplets, particularly when through the pathways of ingestion or the coating of gill structures. This could lead to respiratory problems (reduction in oxygen exchange efficiency) or an accumulation of hydrocarbons in tissues.</p> <p>Near the sea surface, fish are likely to be able to detect and avoid contact with surface slicks and as a result, fish mortalities rarely occur in open waters from floating oils (International Tanker Owners Pollution Federation, 2011). Pelagic fish species are therefore generally not highly susceptible to impacts from hydrocarbon spills. Demersal fish species living and feeding on or near the seabed in deeper waters are not likely to be affected by surface and entrained oil in open waters. Likewise, most reef fish are expected to occur at water depths significant enough to be unaffected by surface oil, whereas</p>

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Receptor	Impacts
	<p>reef fish in shallow waters (< 10 m) and sheltered embayments are at greatest risk from surface oil (Kirby et al., 2018), particularly if they are territorial and unlikely to leave their habitat.</p> <p>While fish, sharks and rays do not generally break the sea surface, individuals may feed near the surface for short periods. The probability of prolonged exposure to a surface slick by fish, shark and ray species is unlikely.</p>
Marine mammals	<p>Eight species of threatened or migratory marine mammals were identified by the EPBC Protected Matters search for the EMBA (Section 4.4.2). BIAs overlapping the EMBA include (Table 4-5):</p> <ul style="list-style-type: none"> ▪ Pygmy blue whale: <ul style="list-style-type: none"> - Foraging areas ▪ Southern right whale: <ul style="list-style-type: none"> - Migration - Reproduction <p>Marine mammals come to the sea surface to breathe air. They are therefore theoretically vulnerable to impacts caused by contact with hydrocarbons at the sea surface. Whales and dolphins are smooth-skinned, hairless mammals so oil tends not to stick to their skin and since they do not rely on fur for insulation, they are therefore not as sensitive to the physical effects of oiling.</p> <p>The way whales and dolphins consume their food may affect the likelihood of their ingesting oil. Baleen whales (such as humpback whales), which skim the surface, are more likely to ingest oil than toothed whales, which are 'gulp feeders' (Helm et al., 2015). Spilled oil may also foul the baleen fibres of baleen whales, thereby impairing food-gathering efficiency or resulting in the ingestion of oil or oil-contaminated prey. Baleen whales may therefore be vulnerable to oil if feeding.</p> <p>Ingested oil, particularly the lighter fractions, can be toxic to marine mammals. Ingested oil can remain within the gastro-intestinal tract and be absorbed into the bloodstream and thus irritate and destroy epithelial cells in the stomach and intestine. Pygmy blue whale foraging occurs seasonally in the region between January and March. A spill during this time may pose an increased risk to pygmy blue whales should in-water hydrocarbons coincide with areas of high prey density for pygmy blue whales. Given the relatively quick weathering of MDO, the period in which such an impact could occur is relatively short (days).</p>
Marine reptiles	<p>Marine turtles are unlikely to occur within the EMBA (Section 4.4.2). Once species, the leatherback turtle, was identified as potentially occurring in low numbers. No BIAs for leather back turtles, such as nesting or important foraging habitat, occur within the ecological EMBA.</p> <p>Direct contact of marine turtles with hydrocarbons and exposure from hydrocarbon components may result in digestion and absorption of hydrocarbons through food contamination or direct physical contact. This may cause damage to the digestive tract and other organs irritation of mucous membranes (such as those in the nose, throat and eyes), leading to inflammation and infection.</p>
Seabirds and shorebirds	<p>Several species of seabirds were identified as potentially occurring within the ecological EMBA (Section 4.4.2). Foraging BIAs for a range of seabirds occur within the ecological EMBA (Table 4-5).</p>

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Receptor	Impacts
	<p>Birds exposed to hydrocarbons may suffer a range of internal and external health effects. Direct contact with hydrocarbons and exposure from hydrocarbons has the potential to cause:</p> <ul style="list-style-type: none"> ▪ oiled feathers affecting the ability of the birds to fly and those birds on the sea surface may suffer from loss of buoyancy and drown or die from hypothermia ▪ skin irritation or ulceration of eyes, mouth or nasal cavities ▪ internal effects from poisoning or intoxication through ingestion, preening and ingestion of oil via their prey items ▪ reduced reproduction ability ▪ reduction in the number of eggs laid ▪ decreased shell thickness ▪ disruption of the normal breeding and incubating behaviours. <p>The surface oil component poses the greatest risk of impact to seabirds due to the amount of time they spend on or near the sea surface. Individuals are at risk of lethal or sub-lethal physical and toxic effects due to external exposure (oiling of feathers) and ingestion, especially those close to the source point where concentrations are at their highest. Even small quantities of feathers contaminated by oil can be lethal, causing hypothermia and reduced buoyancy (O'Hara and Morandin, 2010). Seabirds are less likely to be affected by entrained and dissolved hydrocarbons, except through the ingestion of contaminated prey.</p> <p>Seabirds spend most of their time at sea, travelling over large distances to forage over the open ocean, returning to land during breeding only; therefore, some seabirds may transit the offshore waters of the EMBA and encounter surface oil. While individual seabirds may be affected, it is not predicted that large numbers of seabirds will be impacted from surface oil as they are unlikely to be present in significant numbers due to their vast distribution area. The risk of impact is greater should a release occur within the chick-rearing period where adults forage closer to breeding colonies. The risk may also be greater during summer months when upwelling occurs, as seabirds may forage in the relatively high productivity during this period.</p>
<i>Intertidal / Sub-tidal Habitats</i>	
Intertidal sandy beaches / mud flats	<p>The tidal range in the region is relatively small, and much of the coastline is exposed to high energy metocean conditions. This results in limited development of extensive intertidal sandy habitat. Intertidal flats support infauna and epifauna such as polychaetes, crustaceans, and molluscs. In turn, these fauna assemblages support wading birds.</p> <p>Spilled hydrocarbons may result in mortality of intertidal flats assemblages, resulting in indirect effects to species that prey in these environment</p> <p>Temporary declines in infauna and epifauna populations may have indirectly affect feeding shorebirds and wading birds.</p> <p>Given no hydrocarbons were predicted to accumulate on shorelines above impact thresholds and the low persistent nature of MDO, significant impacts from shoreline accumulation are not anticipated.</p>
Macroalgal and seagrass beds	Macroalgal beds occur both intertidally on rocky shores and sub-tidally within the ecological EMBA.

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Receptor	Impacts
	<p>Impact of hydrocarbons on macroalgae, particularly on intertidal shores, largely depends on the degree of exposure, the degree of wave and tidal action, and how much of the hydrocarbon adheres to the seagrass or macroalgae. Macroalgae is predicted to recover quickly because of wind, wave, and tidal-driven coastal processes that naturally flush the hydrocarbons.</p> <p>Impacts could include reduced capability for photosynthesis if the seagrass or macroalgae were smothered, or toxic effects could occur from contact with the hydrocarbon.</p>
Shoreline Habitat	
Shoreline Habitats	<p>Whilst much of the coastline of the Twelve Apostles is rocky, there are also sandy beaches. Saltmarshes occur in the region, however these are typically restricted to within bar estuaries rather than the open coast and will not credibly be impacted. Rocky shorelines are generally less vulnerable than beaches and saltmarshes.</p> <p>Given the predictive modelling results, the following shoreline habitats are considered at risk:</p> <ul style="list-style-type: none"> ▪ Sandy beaches of the Port Fairy to Lady Bay (Warrnambool) coastline, and small sections of sandy beach between Warrnambool and Cape Otway. ▪ Rocky shore habitats are common along the Twelve Apostles Marine Park. These rocky shore habitats and limestone platforms provide a range of habitat niches and as such have a high biodiversity of associated fauna and flora. <p>Given the potential degree of shoreline loading, but the non-persistent nature of potentially stranded MDO, potential impacts are considered moderate but are unlikely to persist.</p>
Socio-economic	
Fisheries	<p>There is the potential for hydrocarbons to temporarily disrupt fishing activities if surface or water column hydrocarbons move through fishing areas. Fishing grounds may be temporarily closed, which would have an impact through loss of income. Market value / demand for fish may also be impacted due to actual or perceived tainting of catches.</p> <p>Material impacts to fish stock are unlikely to occur. Refer to preceding rows for descriptions of impacts to fishes, fish eggs, and larvae.</p>
Tourism and recreation	<p>There is a wide variety of nature-based tourism and recreational activities that occurs in the EMBA. There is the potential for temporary closure of recreational activities and beaches due to the risk to public health and safety. Hydrocarbons may reduce the aesthetic value of the environment, reducing the appeal to tourists. Impacts to recreational fishing may also occur due to impacts to fish as described for fisheries above.</p>
Defence	<p>No impacts to defence activities are expected to occur.</p>
Shipping	<p>No impacts to commercial shipping are expected to occur.</p>
Oil and gas activities	<p>No impacts to oil and gas activities are expected to occur.</p>
Cultural values and Heritage	<p>Marine ecosystems may hold both cultural and environmental value to Traditional Custodians (see Section 4.6.1.5), with cultural and environmental values intrinsically linked (DCCEEW 2023). It necessarily follows that an impact to marine ecosystems has the potential to impact cultural features where the impact is detectable within Sea Country—the seascape which Traditional Custodians view, interact with or hold knowledge of. The EMBA is known to include habitat for culturally important species such as whales and eels (Section 4.6.1.5). In the event of a worst-case release of MDO</p>

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Receptor	Impacts
	<p>individual fauna may be directly impacted or impacted through temporary degradation of their habitats, however, no population level impacts as expected. Impacts are not expected to occur to ecologically significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.</p> <p>The EMBA overlaps multiple Aboriginal cultural heritage places (Section 4.6.1.5). The EMBA overlaps 33 sites of historic heritage significance (Section 4.6.1.7). Any oil that reaches the shoreline has potential to impact on Aboriginal heritage places and areas of cultural heritage sensitivity (as per the Aboriginal Heritage Regulations 2018), along the coastline. In the unlikely event of a hydrocarbon release, shoreline accumulation may affect sensitive artefacts or areas, which could damage their heritage value.</p> <p>The EMBA overlaps multiple marine parks, as described in Section 4.5. Management Plans for these parks recognise cultural values of Indigenous groups (Section 4.6.1.4). Cultural values associated with marine parks could be impacted by an MDO spill.</p> <p>Impacts may occur to the intangible cultural values discussed in Section 4.6.1.6 such as songlines; creation/dreaming sites, sacred sites, ancestral beings; cultural obligations to care for Country; knowledge of Country/customary law and transfer of knowledge; connection to Country; Access to Country; kinship systems and totemic species, resource collection. Related intangible cultural heritage may include (for example) the transmission of cultural knowledge about whales and whale behaviour, including birthing areas, whale communication and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn, 2021). Inter-generational transmission of cultural knowledge (including songlines) relating to marine fauna may be impacted where changes results in reduced sightings (e.g., through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO, 2003). In the unlikely event of a hydrocarbon release, intangible cultural heritage values may be impacted.</p>
Maritime heritage	There are several shipwrecks in the EMBA. It is unlikely contact would have any lasting impact on these sites, apart from a possible temporary reduction in aesthetic value for a period.
Protected / Significant Areas	
World Heritage and National Heritage	No impacts to World Heritage Areas will credibly occur.
Protected Areas	The EMBA overlaps several protected areas (refer to Sections 4.5.6). The environmental values and sensitivities of these Marine Parks are described in Appendix D. The potential impacts to these values are described in the relevant sections of this table.
Key ecological features	The EMBA does not overlap any KEFs. No impacts to KEFs will credibly occur.

8.2.4. Demonstration of As Low As Reasonably Practicable

Given the routine nature of vessel operations, the potential for a vessel collision resulting in a release of MDO during the petroleum activity is considered a 'Type A' (lower order) risk based upon the Decision Context described in Section 6.1.1 of this EP.

The ALARP process performed for this aspect is summarised in Table 8-6. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable.

Table 8-6: Hydrocarbon Release - Vessel Collision – ALARP Assessment

Control Measure	Accept / Reject	Reason	Associated Performance Standard
Eliminate			
Abandon equipment in situ.	Reject	<p>Abandonment in situ would reduce the impacts of waste management and processing from recovered Minerva subsea infrastructure.</p> <p>Abandonment in situ would transfer subsea infrastructure waste from onshore to offshore by disposing of the infrastructure in the sea.</p> <p>Abandonment in situ would not realise recycling opportunities. Much of the Minerva subsea infrastructure is expected to be suitable for recycling.</p> <p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-
No bunkering in the operational area.	Accept	<p>The MCV will return to port several times during the petroleum activity, providing an opportunity to take on provisions and fuel. Hence, there is little need for bunkering in the operational area.</p> <p>The control is feasible with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 11.1
Separate			
Establishment of a safety exclusion zone around project vessels and communicated to marine users.	Accept	<p>Reduces likelihood of vessel collision with third parties. Third-party vessels must navigate the safety exclusions zone to reduce the risk. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.</p>	PS 1.2

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Control Measure	Accept / Reject	Reason	Associated Performance Standard
Substitution			
Use MDO instead of heavier grades of fuel oil.	Accept	Marine diesel is a light fuel oil and is less persistent in the marine environment than intermediate or heavy fuel oils. Limiting project vessels to marine diesel reduces the risk to the marine environment in the event of a spill. Control is feasible. Benefits outweigh any cost sacrifice.	PS 11.2
Administrative			
Project vessel compliant with relevant navigation safety requirements under the <i>Navigation Act 2012</i> and subsidiary Marine Orders.	Accept	Legislative requirements to be followed which reduces the risk of third-party vessel interactions due to ensuring safety requirements are fulfilled and other marine users are aware of the presence of project vessels. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost/sacrifice.	PS 1.1
Notify AHO prior to commencing equipment removal or field management activities.	Accept	Notification to the AHO will enable them to issue a notice to mariners (if required), thereby reducing the likelihood of interaction with other marine users. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.3
Notify AMSA JRCC prior to commencing equipment removal or field management activities.	Accept	AMSA JRCC requested that Woodside notify them of vessels commencing petroleum activities prior to commencement. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.4
Notify relevant fishing industry government departments, representative bodies, and licence holders, of activities prior to commencement and upon completion of equipment removal or field management activities.	Accept	Communicating the activities to fishing industry stakeholders makes them informed and aware, thereby reducing the likelihood of displacing other marine users. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.5
Provide updates on the petroleum activity to relevant persons as requested during consultation for the preparation of the EP (refer to Sections 5 and 9.10.1).	Accept	Communicating the petroleum activities to relevant persons makes them informed and aware, thereby reducing the likelihood of their functions, interests, and activities being impacted by the petroleum activity. Benefits outweigh cost/sacrifice. Control is also Standard Practice.	PS 1.6
Establish and maintain a publicly available interactive map which provides relevant persons with updated information on activities	Accept	Interactive map provides additional alternative method for marine users to obtain information on the timing of activities, thereby reducing the likelihood. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 1.8

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Control Measure	Accept / Reject	Reason	Associated Performance Standard
being conducted as part of the petroleum activity.			
Marine Order 91 (marine pollution prevention – oil) (as appropriate to vessel class), which gives effect to MARPOL Annex I – Oil.	Accept	Marine Order 91 required vessels to have a SOPEP, which is implemented in the event of an oil spill. By ensuring a SOPEP is in place for the vessel, the consequence of a spill may be reduced. Control is based on a legislative requirement and must be adopted. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 8.4
Pollution Control			
In the event of a spill, emergency response activities implemented in accordance with the OPEP.	Accept	Implementing the OPEP efficiently to deal with unplanned hydrocarbon spills will help to reduce impacts to the marine environment. The control is feasible and standard practice. Costs associated with implementing response strategies vary dependant on nature and scale of spill event. Benefits outweigh any cost sacrifice.	PS 11.3

8.2.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 8-6) that, when implemented, are considered to manage the risk of hydrocarbon spill from a vessel collision during the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the risk of hydrocarbon spill from a vessel collision during the petroleum activity. Additional control measures were identified in Table 8-6 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

8.2.5. Demonstration of Acceptability

Given the adopted controls, the risk of a marine diesel hydrocarbon release will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in Table 8-6.

The adopted controls are considered good oil-field practice/industry best practice. Woodside has considered information contained in recovery plans and threat abatement plans (Section 4.4.4). The environmental risks meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside’s deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The unplanned hydrocarbon release risk, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect. The unplanned hydrocarbon release risk assessment was informed by industry-standard modelling, which includes the worst-case credible spill scenario, incorporates inherent uncertainty and is consistent with the precautionary principle.
- Inter-generational principle: The unplanned hydrocarbon release risk will not impact upon the environment such that future generations cannot meet their needs.

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- Biodiversity principle: The unplanned hydrocarbon release risk will not impact upon biodiversity or ecological integrity in the long-term. The controls Woodside will implement reduce the risk of a MDO spill to ALARP.

During consultation, GLAWAC and EMAC requested that in the event of a hydrocarbon release they would like to be consulted at that time. Triggers to notify Traditional Owners who may be affected by a spill are captured in the OPEP (Appendix E).

Woodside considers the risk to be managed to a level that is acceptable.

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8.2.6. Environmental Performance Outcomes, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 11 No release of hydrocarbons to the marine environment due to a vessel collision during the petroleum activity.	C 1.1 Refer to Section 7.1.6.	PS 1.1 Refer to Section 7.1.6.	MC 1.1.1 Refer to Section 7.1.6.
	C 1.2 Refer to Section 7.1.6.	PS 1.2 Refer to Section 7.1.6.	MC 1.2.1 Refer to Section 7.1.6.
	C 1.3 Refer to Section 7.1.6.	PS 1.3 Refer to Section 7.1.6.	MC 1.3.1 Refer to Section 7.1.6.
	C 1.4 Refer to Section 7.1.6.	PS 1.4 Refer to Section 7.1.6.	MC 1.4.1 Refer to Section 7.1.6.
	C 1.5 Refer to Section 7.1.6.	PS 1.5 Refer to Section 7.1.6.	MC 1.5.1 Refer to Section 7.1.6.
	C 1.6 Refer to Section 7.1.6.	PS 1.6 Refer to Section 7.1.6.	MC 1.6.1 Refer to Section 7.1.6.
	C 1.8 Refer to Section 7.1.6.	PS 1.8 Refer to Section 7.1.6.	MC 1.8.1 Refer to Section 7.1.6.
	C 8.4 Refer to Section 7.6.6.	PS 8.4 Refer to Section 7.6.6.	MC 8.4.1 Refer to Section 7.6.6.
	C 11.1 No bunkering in the operational area.	PS 11.1 No bunkering shall be undertaken in the operational area during the petroleum activity.	MC 11.1.1 Records demonstrate that no bunkering undertaken in the operational area.
	C 11.2 Use MDO instead of heavier grades of fuel oil.	PS 11.2 Project vessels shall only use MDO when undertaking the petroleum activity.	MC 11.2.1 Records demonstrate project vessels operate on marine diesel.

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	C 11.3 In the event of a spill, emergency response activities implemented in accordance with the OPEP.	PS 11.3 In the event of a spill, emergency response activities implemented in accordance with the OPEP.	MC 11.3.1 Completed incident documentation.

8.3. Unplanned Spills of Chemicals and Hydrocarbons

8.3.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Minor spills and leaks of chemicals and hydrocarbons	Minor spills and leaks of chemicals and hydrocarbons on the vessels from subsea equipment (such as ROVs) reaching the marine environment.	Localised and temporary reduction in water quality adjacent to the spill and minor adverse toxicity effects to surface and water column biota.	10	0.1	1	Type A Lower Order Risk	Tolerable

8.3.2. Source of Risk

During the petroleum activity, the handling, use and storage of chemicals and hydrocarbons on the project vessels will be required, which may include:

- fuel and refined oil
- hydraulic fluids and oils
- greases and lube oils
- cleaning and cooling agents

Spills and leaks of chemicals and hydraulic fluid on the decks of the project vessels could occur because of spillage during handling, inadequate bunding and storage, inadequate method of securing or tank and pipework failure, leaks from equipment or rupture or failure of hoses. Chemical storage areas are typically set up with effective primary and secondary bunding to contain any deck spills; however, hydraulic hoses may be located outside of bunded or deck areas. Typically, volumes of spills and leaks on vessels are small (less than 20 L).

Leaks or rupture of ROV and subsea tool hydraulic hoses may occur through equipment malfunction or line pinches, which would lead to the loss of small volumes of hydraulic fluids directly to the marine environment. Accidental release of hydraulic fluids volumes from such failures are expected to be low (less than 20 L).

8.3.3. Environmental Impact Assessment

Given the minor quantities involved (less than 20 L), the accidental discharge of chemicals and hydraulics has the potential to result in a localised reduction in water quality and a minor potential for toxicity impacts to plankton and fish populations (surface and water column biota). Large, more mobile fauna are likely to be transient within the operational area and toxic impacts are unlikely to occur to these species. The potential impacts would most likely be highly localised and restricted to the immediate area in the footprint of the release.

Hydraulic oils behave similarly to marine diesel when spilled to the marine environment. These are medium oils of light to moderate viscosity. They have a relatively rapid spreading rate and will dissipate quickly in ocean conditions. Any impact is temporary and minor. Impact will decrease rapidly as the release dilutes and disperses in the marine environment. No impacts are predicted to benthic habitat communities in the operational area.

8.3.4. Demonstration of As Low As Reasonably Practicable

Given the routine nature of operations that may cause unplanned spills and the localised, short-term nature of the impacts, the risk of unplanned spills of chemicals and hydrocarbons during the petroleum activity is considered a ‘Type A’ (lower order) risk (Section 6.1.1).

The ALARP process performed for this aspect is summarised in Table 8-7. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable.

Table 8-7: Unplanned Discharge of Chemicals and Minor Hydrocarbon Spill – ALARP Assessment

Control Measure	Accept / Reject	Reason	Associated Performance Standards
Separate			
Liquid chemical and fuel storage areas are bunded or secondarily contained when they are not being handled/moved temporarily.	Accept	Implementation of procedures for chemical storage and handling on the MODU and project vessels will reduce the consequence of impacts resulting from unplanned discharges to the marine environment by ensuring chemicals have been assessed for environmental acceptability. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	P 12.1
Drainage or bunding in place to contain spilled fluids at high-risk spill locations on project vessel deck.	Accept	Reduces the likelihood of contaminated deck drainage water being discharged to the marine environment. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 12.2
Below-deck storage of all hydrocarbons and chemicals.	Reject	Reduces the likelihood of contaminated deck drainage water being discharged to the marine environment. Below deck storage may require more frequent handling of chemicals and hydrocarbons (e.g., transferring from below deck storage to above deck for use). Operational experience indicates minor spills of chemicals and hydrocarbons occur more frequently during handling operations. The control may reduce the consequence of a chemical or hydrocarbon spill but may also increase the likelihood of a spill occurring. There is no net environmental benefit from this control, hence it is rejected.	-
Administrative			
Chemicals intended, or likely, to be discharged to the marine environment will have an environmental assessment completed before use.	Accept	Environmental assessment of chemicals will reduce the consequence of impacts resulting from discharges to the marine environment by ensuring chemicals have been assessed for environmental acceptability. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 8.1

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
Marine Order 91 (marine pollution prevention – oil) (as appropriate to vessel class), which gives effect to MARPOL Annex I – Oil.	Accept	Marine Order 91 required vessels to have a SOPEP, which is implemented in the event of an oil spill. By ensuring a SOPEP is in place for the vessel, the consequence of a spill may be reduced. Control is based on a legislative requirement and must be adopted. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 8.4
Spill kits positioned in high-risk locations around the rig (near potential spill points such as transfer stations).	Accept	Spill kits would reduce the likelihood of a deck spill from entering the marine environment. The consequence is unchanged. The control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	P 12.3
Critical hoses outside banded areas (such as ROVs) are inspected and maintained as part of PMS.	Accept	Maintenance and inspection completed as scheduled on PMS reduces the risk of leaks to the marine environment. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	P 12.4

8.3.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 8-7) that, when implemented, are considered to manage the risk of unplanned spills of chemicals and hydrocarbons during the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the risk of unplanned spills of chemicals and hydrocarbons during the petroleum activity. Additional control measures were identified in Table 8-7 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

8.3.5. Demonstration of Acceptability

Given the adopted controls, the risk of unplanned spills of chemicals and hydrocarbons will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in Table 8-7.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the risk of unplanned spills of chemicals and hydrocarbons have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (Section 4.4.4). The environmental risks meet the Woodside environmental risk acceptability criteria (Section 6.3). Relevant requirements have been met, including Marine Orders.

The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The risk of unplanned spills of chemicals and hydrocarbons is well understood, as are measures to prevent unplanned spills. The receiving environment is well understood.

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- Inter-generational principle: The risk of unplanned spills of chemicals and hydrocarbons will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The risk of unplanned spills of chemicals and hydrocarbons will not impact upon biodiversity or ecological integrity in the long-term.

Woodside considers the risk to be managed to an acceptable level.

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8.3.6. Environmental Performance Outcome, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 12</p> <p>No unplanned release of hazardous chemicals or hydrocarbon to the marine environment greater than a Severity Level 2 during the petroleum activity.</p>	<p>C 8.1</p> <p>Refer to Section 7.6.6.</p>	<p>PS 8.1</p> <p>Refer to Section 7.6.6.</p>	<p>MC 8.1.1</p> <p>Refer to Section 7.6.6.</p>
	<p>C 8.4</p> <p>Refer to Section 7.6.6.</p>	<p>PS 8.4</p> <p>Refer to Section 7.6.6.</p>	<p>MC 8.4.1</p> <p>Refer to Section 7.6.6.</p>
	<p>C 12.1</p> <p>Liquid chemical and fuel storage areas are banded or secondarily contained when they are not being handled/moved temporarily.</p>	<p>PS 12.1</p> <p>Failure of primary containment in storage areas does not result in loss to the marine environment.</p>	<p>MC 12.1.1</p> <p>Records confirms all liquid chemicals and fuel are stored in banded/secondarily contained areas when not being handled/moved temporarily.</p>
	<p>C 12.2</p> <p>Drainage or bunding in place to contain spilled fluids at high-risk spill locations on project vessel deck.</p>	<p>PS 12.2.1</p> <p>Drainage or bunding in place to contain spilled fluids at high-risk spill locations on project vessel deck (e.g., relatively large volumes of chemicals or hydrocarbons in equipment that may leak).</p>	<p>MC 12.2.1</p> <p>Records confirms suitable drainage or bunding in place around high-risk spill locations on vessel deck.</p>
	<p>C 12.3</p> <p>Spill kits positioned in high-risk locations around the rig (near potential spill points such as transfer stations).</p>	<p>PS 12.3</p> <p>Spill kits to be available for use to clean up deck spills.</p>	<p>MC 12.3.1</p> <p>Records confirms that spill kits are present, maintained, and suitably stocked.</p>
	<p>C 12.4</p> <p>Critical hoses outside banded areas (such as ROVs) are inspected and maintained as part of PMS.</p>	<p>PS 12.4</p> <p>Critical hoses outside banded areas (such as ROVs) are identified and regularly inspected, maintained, and replaced as part of the PMS.</p>	<p>MC 12.4.1</p> <p>Records in the PMS demonstrate inspections of critical hoses comply with equipment specifications.</p>

8.4. Loss of Solid Waste (including Dropped Objects)

8.4.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Loss of solid hazardous and non-hazardous wastes	Accidental loss of solid hazardous and non-hazardous wastes or dropped objects to the marine environment	Localised decline in water quality, toxic effects to marine fauna and potential injury to fauna. Disturbance of benthic habitat and associated communities.	10	0.3	3	Type A Lower Order Risk	Tolerable
	Dropped objects		10	0.3	3	Type A Lower Order Risk	Tolerable

8.4.2. Source of Risk

8.4.2.1. Solid Waste

Project vessels produce a variety of solid wastes, including domestic and industrial wastes. These include aluminium cans, bottles, paper and cardboard, scrap steel, chemical containers, batteries, and medical wastes. Waste is segregated on-board the project vessels and stored in designated skips and waste containers, in accordance with the on-board waste management plan. Wastes are segregated into the categories of:

- non-hazardous waste (or general waste)
- hazardous waste
- recyclables (further segregation is conducted in line with practices at existing Woodside operations in the region).

There is the potential for solid wastes to be lost overboard to the marine environment, particularly during adverse weather events and back loading activities and due to incorrect waste storage. Waste items lost overboard are typically small wind-blown items such as plastic containers and cardboard.

8.4.2.2. Dropped Objects

There is the potential for objects to be dropped overboard from the project vessels to the marine environment. Small items dropped may include personal protective gear (such as glasses, gloves, hard hats) and small tools (such as spanners). During the recovery of subsea equipment there is the potential for larger dropped objects to occur (such as subsea infrastructure) because of human error or failure of lifting equipment during the recovery of subsea infrastructure. Woodside considers this a very unlikely event given the lifting methods and the nature and condition of the equipment. Size of the subsea infrastructure is provided in Table 3-8.

Lifting of discrete seabed equipment may be done using the original lifting points by which these items were installed or by rigging, slings, baskets, etc. as required. As outlined in Section 3.5, all equipment is in sound condition, with cathodic protection systems functioning effectively.

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All equipment recovered from the field will be held just above the seabed to test the lifting arrangements are sound. If a lift was to fail, it is most likely to occur during this test, which substantially reduces the consequence of a failure of the lifting equipment due to the very short fall. A failure during a test lift will result in the object falling on its original location, with no net increase in disturbed seabed. If subsea infrastructure is dropped during the recovery activities, Woodside will endeavour to locate and recover the lost equipment.

8.4.3. Environmental Impact Assessment

The potential impacts of solid wastes accidentally discharged to the marine environment include pollution (debris) and disturbance of the seabed. Marine fauna may interact with the lost waste, resulting in entanglement or ingestion, leading to injury and death of individual animals. Migratory and threatened species may transit through the operational area, including cetaceans, seabirds, and sharks. Loss of solid waste to the marine environment is highly unlikely to have a significant environmental impact to marine fauna, based on the types and frequency of wastes that could be lost and the transient nature of the marine fauna. Impacts are anticipated to be temporary and minor.

In the unlikely event of loss of subsea infrastructure to the marine environment, potential impacts would be limited to localised physical impacts on benthic communities over the footprint of the lost subsea infrastructure. The subsea infrastructure would subsequently be recovered if feasible. Impacts will also be temporary in nature. Any elevated turbidity would be very localised and temporary and is therefore not expected to have any significant impact to environment receptors, such as filter feeders. Seabed disturbance will largely be limited to the original footprint of the infrastructure being lifted, which is already disturbed by the removal of the infrastructure (Section 7.2).

8.4.3.1. Species Recovery Plans and Threat Abatement Plans

Woodside has considered information contained in relevant recovery plans advice for marine fauna that identify marine debris as a threat (Section 4.4.4).

8.4.4. Demonstration of As Low As Reasonably Practicable

Given the routine nature of lifting and transfer operations aboard the vessels, the potential for an unplanned discharge of solid objects during the petroleum activity is considered a 'Type A' (lower order) risk based upon the Decision Context described in Section 6.1.1 of this EP.

The ALARP process performed for this aspect is summarised in Table 8-8. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable. The result of this ALARP assessment contributes to the overall acceptability of the impact or risk.

Table 8-8: Unplanned Solids Discharge – ALARP Assessment

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Eliminate</i>			
Abandon equipment in situ.	Reject	<p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ would eliminate the risk of dropped objects, as no vessel or lifting operations would be required.</p>	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
		Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831. Cost is grossly disproportionate to the environmental benefit.	
Administrative			
Marine Order 95 (pollution prevention – garbage) (as appropriate to vessel class), which gives effect to Annex V of MARPOL.	Accept	Control is based on legislative requirements and reduces the likelihood of an unplanned release of garbage to the sea. Control must be accepted.	PS 10.1
Vessels' work procedures implemented for lifts, bulk transfers, and cargo loading.	Accept	Reduces the likelihood of an unplanned release. Lifting, bulk transfer and cargo loading procedures will enable lifts to be performed in a safe manner and reduce likelihood of a dropped object event. Control is considered standard practice and can be implemented at minimal cost. Environmental benefit outweighs cost sacrifice.	PS 13.1
Recovered subsea infrastructure to be stored securely on deck to prevent loss overboard.	Accept	Securely storing recovered equipment on the MCV deck reduces the risk of a dropped object. Unsecure equipment also poses a critical safety risk. Control is considered standard practice and can be implemented at minimal cost. Environmental benefit outweighs cost sacrifice	PS 13.2
Attempt recovery of solid wastes or equipment lost overboard where safe and practicable to do so.	Accept	The control is feasible and may reduce marine debris in the marine environment. Recovery of dropped objects may not always be practicable and will be assessed on a case-by-case basis considering: <ul style="list-style-type: none"> ▪ risk to personnel to retrieve the object ▪ ability to recover the object (i.e., nature of the object, lifting equipment, ROV availability and suitable weather). Potentially reduces consequence by recovering dropped object/waste from the marine environment. Control is considered standard practice and can be implemented. Environmental benefit outweighs cost sacrifice	PS 13.3

8.4.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 8-8) that when implemented are considered to manage the potential risks loss of solid hazardous and non-hazardous wastes (including dropped objects) to ALARP.

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Woodside considers the control measures described above are appropriate to reduce the risks of loss of solid hazardous and non-hazardous wastes (including dropped objects). Additional reasonable control measures were identified in Table 8-8 to further reduce impacts but were rejected since the associated cost or sacrifice was grossly disproportionate to any benefit. The impacts are therefore considered reduced to ALARP.

8.4.5. Demonstration of Acceptability

Given the adopted controls, the risk of loss of solid waste (including dropped objects) will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in Table 8-8.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the risk of loss of solid waste (including dropped objects) have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (Section 4.4.4). The environmental risks meet the Woodside environmental risk acceptability criteria (Section 6.3).

The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The risk of loss of solid waste (including dropped objects) is well understood, as are measures to prevent unplanned spills. The receiving environment is well understood.
- Inter-generational principle: The risk of loss of solid waste (including dropped objects) will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The risk of loss of solid waste (including dropped objects) will not impact upon biodiversity or ecological integrity in the long-term.

Woodside considers the risk to be managed to an acceptable level.

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8.4.6. Environmental Performance Outcome, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 13</p> <p>No unplanned release of solid waste or objects to the marine environment greater than a consequence Level 1 during the petroleum activity.</p>	<p>C 10.1</p> <p>Refer to Section 7.7.6.</p>	<p>PS 10.1</p> <p>Refer to Section 7.7.6.</p>	<p>MC 10.1</p> <p>Refer to Section 7.7.6.</p>
	<p>C 13.1</p> <p>Vessels' work procedures implemented for lifts, bulk transfers, and cargo loading.</p>	<p>PS 13.1</p> <p>All lifts conducted in accordance with applicable vessels' work procedures to limit potential for dropped objects.</p> <p>Procedures will include:</p> <ul style="list-style-type: none"> ▪ Security of loads shall be checked before commencing lifts. ▪ Loads shall be covered if there is a risk of loss of loose materials. ▪ Lifting operations shall be conducted using the PTW and JSA systems to manage the specific risks of that lift, including consideration of weather and sea state. 	<p>MC 13.1.1</p> <p>Records show lifts conducted in accordance with the applicable vessels' work procedures</p>
	<p>C 13.2</p> <p>Recovered subsea infrastructure to be stored securely on deck to prevent loss overboard.</p>	<p>PS 13.2</p> <p>All recovered subsea infrastructure to be stored securely on deck to prevent loss overboard.</p>	<p>MC 13.2.1</p> <p>Records demonstrate recovered subsea infrastructure stored securely on deck.</p>
	<p>C 13.3</p> <p>Attempt recovery of solid wastes or equipment lost overboard where safe and practicable to do so..</p>	<p>PS 13.3</p> <p>Any solid waste / equipment dropped to the marine environment will be recovered where safe and practicable to do so.</p> <p>Safety and practicability considerations include:</p> <ul style="list-style-type: none"> ▪ risk to personnel and equipment to retrieve object 	<p>MC 13.3.1</p> <p>Records detail the recovery attempt consideration and status of any waste / equipment lost to marine environment.</p> <p>MC 13.3.2</p> <p>Incident reporting records demonstrate outcomes of the safe and practicable evaluation, including an impact assessment for material items lost to the marine environment.</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
		<ul style="list-style-type: none"> ▪ ability to recover the object (i.e., nature of object, lifting equipment or, ROV availability and suitable weather) ▪ the risk the object may pose to the environment. 	

8.5. Marine Fauna Interaction

8.5.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Interaction with marine fauna	Accidental collision between project vessels and marine fauna in the operational area.	Potential lethal impact or injury to protected marine fauna species.	30	0.1	3	Type A Lower Order Risk	Tolerable

8.5.2. Source of Risk

8.5.2.1. Vessel Operations

The movements of vessels in the operational area may present a potential hazard to slow moving marine megafauna and other marine fauna present. Vessel movements can result in collisions between the vessel (hull, propellers) and marine fauna, with potential impacts ranging from minor behavioural interferences (e.g., avoidance) to severe impacts such as injury and mortality through vessel strikes.

The MCV will move slowly within the operational area and will be stationary for much of the time (e.g., when lifting equipment or making cuts in the pipeline bundle). The MCV will demobilise from the operational area throughout the activity to transport subsea infrastructure for onshore disposal; five interim demobilisations from the operational area are expected to be required.

8.5.3. Environmental Impact Assessment

Vessel collisions have contributed to the mortality of marine fauna (Hazel and Gyuris, 2006; Hazel et al., 2007, Laist et al., 2001; Jensen and Silber, 2003). For both whales and turtles, the risk of lethal collision is a function of abundance of animals in the operational area, probability of a collision, and the consequence of that collision (i.e., no injury, injury, mortality).

8.5.3.1. Cetaceans

The likelihood of vessel-whale collision being lethal is influenced by vessel speed. The risk of a collision causing mortality of the whale increases as the vessel speed increases (Jensen and Silber, 2004; Laist et al., 2001). Vanderlaan and Taggart (2007) found that the chance of lethal injury to a large whale because of a vessel strike declines from 80% at 15 knots to about 20% at 8.6 knots.

The project vessels will be typically either stationary or moving slowly in the operational area; hence, the chance of a vessel-whale collision resulting in lethal outcome within these waters is much reduced. Vanderlaan and Taggart (2007) estimated the risk is less than 10% at a speed of four knots. Vessel-whale collisions at this speed are uncommon and, based on reported data contained in the United States of America National Ocean and Atmospheric Administration database (Jensen and Silber, 2004), there are only two known instances of collisions when the vessel was travelling at less than six knots, both from whale-watching vessels that were deliberately placed among whales.

The reaction of whales to the approach of a vessel is quite variable. Some species remain motionless when in the vicinity of a vessel, while others are known to be curious and often approach vessels that have stopped or are slow-moving, although they generally do not approach, and sometimes avoid, faster moving vessels

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(Richardson et al., 1995). Species may also show avoidance to vessel noise as the vessel approaches (Section 7.4).

Four listed threatened and migratory species of cetacean were identified as potentially occurring in or having habitat in the operational area: the sei whale, blue whale, fin whale, and southern right (Table 4-3). The operational area intercepts a two BIAs: a southern right whale migration BIA and a pygmy blue whale foraging BIA (Table 4-5). Southern right whales are seasonally present between May and September. The petroleum activity is unlikely to be undertaken during this period, hence the risk of collision between vessels and southern right whales is low. Pygmy blue whales are seasonally present in the region between January and March, which coincides with higher productivity in the water column due to the Bonney Upwelling. The Bonney Upwelling, and most observations of pygmy blue whales, occur to the west of the operational area. However, blue whales have been observed in proximity to the operational area and hence may be present in the operational area, particularly between January and March.

The worst-case consequence from a vessel strike would be the fatality of a single EPBC Act-listed individual species. However, as they would represent an individual within the population, it is not expected to result in a long-term threat to the population. Given the slow speed and relatively short duration of vessel activities in the operational area, a collision between a vessel and a cetacean is unlikely. The worst-case consequence is a measurable, but small, decrease in the cetacean population, which would not result in changes to ecosystem function or risk the ongoing recovery of cetacean populations.

8.5.3.2. Marine Turtles

Studies have shown that turtles are less likely to flee from a fast-moving vessel than from a slow-moving vessel (Hazel et al., 2007), presumably because of poor hearing and visual senses. It is reasonable to assume that the higher the speed of collision, the greater the risk of mortality, but contact with the propeller would be lethal at almost all speeds. The *Recovery Plan for Marine Turtles in Australia 2017-2027* (Commonwealth of Australia, 2017) identifies boat strike as a threat to marine turtles, particularly in areas where turtles occur in high density.

Only one species of turtle is reasonably expected to occur in the operational area – the leatherback turtle. There are no BIAs or habitat critical for the survival of leatherback turtles in the operational area. Leatherback turtles would only occur infrequently and in low numbers (i.e., individual turtles) in the operational area. Given the nature of vessel movements undertaking the petroleum activity in the operational area and the low number of leatherback turtles, collisions between vessels and turtles are not expected to occur.

8.5.3.3. Species Recovery Plans and Approved Conservation Advice

Woodside has considered information contained in relevant recovery plans and approved conservation advice for cetaceans and marine turtles that identify vessel strike as a threat (Table 4-6).

Woodside has evaluated the impacts and risks associated with vessel strike and vessel disturbance. Woodside considers the proposed activity is not inconsistent with:

- *National Strategy for Reducing Vessel Strike on Cetaceans and Other Marine Megafauna* (Commonwealth of Australia, 2017)
- *Recovery Plan for Marine Turtles in Australia 2017–2027* (Commonwealth of Australia, 2017)
- *Conservation Management Plan for the Blue Whale* (Commonwealth of Australia, 2015)
- *Conservation Management Plan for the Southern Right Whale* (Commonwealth of Australia, 2012)

The environmental risk assessment of vessel collisions with marine fauna aligns with the conservation objectives of the publications listed above. Controls have been adopted to manage the risk to a level that is acceptable and ALARP.

8.5.3.4. Cultural Values and Heritage

Through consultation and review of available literature (Section 4.6.1.5), Woodside understands that marine fauna that may be affected by a collision with a project vessel, such as cetaceans, are culturally important to Traditional Custodians. Traditional Custodians value these species both tangibly as well intangibly as they can be considered a resource or linked to songlines and dreaming stories. Traditional Custodians also have

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connection to many marine species through kinship and totemic systems; an individual may have obligation to care for a species to which they are kin. Traditional Custodians may also have a cultural obligation to care for the environmental values of Sea Country.

For example, activities that impact turtle populations and their marine environment may have an indirect impact on some Indigenous communities if they deplete hunting areas and threaten local food security (Delisle et al., 2018).

Related intangible cultural heritage may include the transmission of cultural knowledge about whales and whale behaviour, including birthing areas, whale communication and migratory patterns. Such cultural knowledge may be associated with various cultural functions and activities that support the social and economic life of a community (Fijn, 2021). Inter-generational transmission of cultural knowledge (including songlines) relating to marine reptiles may be impacted where changes results in reduced sightings (e.g., through population decline, changes to migration routes or changes to migration seasonality). This transfer of knowledge may be integral to managing a group's intangible cultural heritage (UNESCO, 2003).

As described in the environmental impact assessment, potential impacts to marine fauna are predicted to be at an individual level, which are not considered to be ecologically significant at a population level. Impacts are not expected to occur to ecologically significant proportions of the populations of the species, nor result in a decrease of the quality of the habitat such that the extent of these species is likely to decline. As such, cultural values and intangible cultural heritage associated with these species are expected to be maintained.

8.5.4. Demonstration of As Low As Reasonably Practicable

The risk of interactions with marine fauna (i.e., collisions between vessels and marine fauna) for the duration of the petroleum activity is considered a 'Type A' (lower order) impact based upon the decision context described in Section 6.1.1.

The ALARP process performed for the environmental aspect is summarised in Table 8-9. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable.

Table 8-9: Unplanned Marine Fauna Interactions – ALARP Assessment

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Eliminate</i>			
Abandon equipment in situ.	Reject	<p>Abandonment in situ would eliminate the need for vessels to remove the Minerva subsea infrastructure, hence eliminating the risk of collisions between such vessels and marine fauna.</p> <p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
Separate			
Vary the timing of the petroleum activity to avoid peak periods when pygmy blue whales and southern right whales occur in the region.	Reject	<p>Woodside intends to avoid working during the peak seasonal presence by undertaking works in Q4 where practicable. However, metocean analysis indicates that weather conditions in the operational area for much of the year are unsuitable for removal activities. The seasonal peak in pygmy blue whale foraging (January – March) includes long periods of suitable weather to undertake activities.</p> <p>Detailed engineering analysis has identified that commencing activities as soon as the weather is suitable (i.e., Q4) may require works during the January to March period to complete the removal activities.</p> <p>Woodside's current execution planning does not include works during the peak southern right whale reproduction period in the region (May to September), however Woodside may require works during this period to comply with General Direction 831.</p> <p>General Direction 831 requires that Woodside remove all property in VIC-L22 and VIC-PL33 before 30 June 2025. Preventing works during the peak periods for pygmy blue whales and southern right whales risks not complying with General Direction 831, which is not tolerable to Woodside.</p> <p>Hence the cost of implementing this control (i.e., greater risk of non-compliance with General Direction 831) is grossly disproportionate to the environmental benefit.</p>	-
Administrate			
At least one dedicated marine fauna observer (MFO) to detect marine fauna during daylight hours from the MCV between 1 January and 31 March (pygmy blue whale peak foraging period), with regionally relevant experience.	Accept	<p>A dedicated MFO observing for marine fauna may detect whales in proximity to the MCV. This provides an opportunity for the MCV to take action to avoid a collision with marine fauna.</p> <p>A dedicated MFO also assists with meeting the requirements of EPBC Regulations 8.1 – Interacting with cetaceans.</p>	PS 5.5.2
Trained crew to detect whales outside pygmy blue whale foraging season during daylight hours.	Accept	<p>MFOs provide a benefit in determining the behaviour of whales, as they are trained to reliably identify whale species and behaviour. Determining species and behaviour is important for managing the petroleum activity in accordance with the <i>Conservation Management Plan for the Blue Whale</i> (Commonwealth of Australia, 2015).</p> <p>The timing of pygmy blue whales in the region is reliable and peaks between January and March. Outside of this period, pygmy blue whales are much less likely to be present. Hence MFOs provide little</p>	PS 5.5.3

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
		benefit over trained crew in detecting the presence of whales. Trained crew as a substitute for MFOs outside of the January to March pygmy blue whale foraging period provides a suitable level of detection to avoid collisions with whales, which costing substantially less.	
Limit vessel speeds to 6 knots or less in the operational area (excluding emergencies).	Accept	Limiting vessel speed to 6 knots or less in the operational area reduces the likelihood and consequence of collisions between vessels and marine fauna.	PS 5.4

8.5.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 8-9) that, when implemented, are considered to manage the risk of interactions with marine fauna during the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the risk of interactions with marine fauna during the petroleum activity. Additional control measures were identified in Table 8-9 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

8.5.5. Demonstration of Acceptability

Given the adopted controls, the marine fauna interaction risk will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in Table 8-9.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding marine fauna interaction risks have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (Section 4.4.4). The environmental risks meet the Woodside environmental risk acceptability criteria (Section 6.3). The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The marine fauna interactions risk, and its potential impacts, are well understood, and there is no risk of serious or irreversible environmental damage from this aspect.
- Inter-generational principle: The marine fauna interactions risk will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The marine fauna interactions risk will not impact upon biodiversity or ecological integrity in the long-term.

GMTOAC identified whales as a cultural value during consultation (Appendix F). Woodside provided additional information on how whales have been considered while developing environmental management measures for the petroleum activity. Given impacts on a population level are not expected to occur, cultural values and intangible cultural heritage associated with these species are expected to be maintained. Woodside considers the risk to be managed to an acceptable level.

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8.5.6. Environmental Performance Outcome, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
EPO 14 No vessel strikes with protected marine fauna during the petroleum activity.	C 5.2 Refer to Section 7.4.6.	PS 5.2 Refer to Section 7.4.6.	MC 5.2.1 Refer to Section 7.4.6.
	C 5.5 Refer to Section 7.4.6.	PS 5.5.1 Refer to Section 7.4.6.	MC 5.5.1.1 Refer to Section 7.4.6.
		PS 5.5.2 Refer to Section 7.4.6.	MC 5.5.2.1 Refer to Section 7.4.6.
		PS 5.5.3 Refer to Section 7.4.6.	MC 5.5.3.1 Refer to Section 7.4.6.
	C 5.4 Refer to Section 7.4.6.	PS 5.4 Refer to Section 7.4.6.	MC 5.4.1 Refer to Section 7.4.6.

8.6. Introduction of Invasive Marine Species

8.6.1. Summary of Risk Assessment and Evaluation

Aspect	Source of Risk	Potential Impact	Severity Factor	Likelihood Factor	Residual Risk	Decision Context	Acceptability
Introduction of Invasive Marine Species	Movement of project vessels and immersible equipment from known high invasive marine species risk areas.	Introduction of invasive marine species to area leading to major impact on native species.	100	0.03	3	Type A Lower Order Risk	Tolerable

8.6.2. Source of Risk

Project vessel activities have the potential to result in the introduction of invasive marine species (IMS) through:

- discharges of vessel ballast water containing IMS
- translocation of species through biofouling of vessel hull or niches (such as sea chests, bilges, or strainers)
- translocation of species on submerged equipment.

Most IMS require hard substrate in the photic zone; hence, IMS typically require shallow waters to become established. Highly disturbed, shallow-water environments such as shallow coastal waters, ports and marinas are more susceptible to IMS colonisation, whereas IMS are generally unable to successfully establish in deep-water ecosystems and open-water environments. The petroleum activity will occur in waters approximately 50 m deep at the shallowest point. Unconsolidated sandy sediments are the most common benthic habitat type in the region, which is not conducive for many IMS.

Should a project vessel be mobilised from international waters, there is the potential for transferring IMS from international waters into the operational area and to Australia if the vessel is required to sail to a port. All vessels entering Australian waters are subject to IMS risk management requirements. Woodside applies additional IMS risk management requirements for all vessels undertaking the petroleum activity.

8.6.2.1. Ballast Water

Vessels manage ballast water in accordance with International Maritime Organisation (IMO) International Convention for the Control and Management of Ships' Ballast Water and Sediments Convention (the BWM Convention), IMO Guidelines, the mandatory *Australian Ballast Water Management Requirements* (Department of Agriculture, Water, and the Environment, 2020) are enforced under the Commonwealth *Biosecurity Act 2015* and associated local measures intended to minimise the risk of transplanting harmful aquatic organisms and pathogens from ships' ballast water and associated sediments, while maintaining ship safety.

Vessels arriving from overseas or intending to discharge internationally sourced trim or ballast water within Australian waters, are required to have undertaken a ballast water exchange as per the *Australian Ballast Water Management Requirements* (Department of Agriculture, Water, and the Environment, 2020). The requirements align with the BWM Convention:

- All vessels must carry a valid Ballast Water Management Plan and valid Ballast Water Management Certificate, as appropriate to vessel class.

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- Vessels with a Ballast Water Management System should also carry a Type Approval Certificate specific to the type of system.
- All vessels must maintain a complete and accurate Ballast Water Record System detailing all ballast water movements.
- All vessels should submit a Ballast Water report. Reporting obligations differ for vessels operating domestically and vessels travelling internationally. Vessels arriving from an international location and intending to discharge internationally sourced ballast water must submit a Ballast Water Report at least 12 hours prior to arrival. Domestic trading vessels can request a low-risk exemption through a Domestic Risk Assessment.
- All applications must be submitted through the marine and aircraft reporting system (MARS).

From September 2019, all vessels that use ballast water are required to meet the Regulation D2 discharge standard of the International Convention for the BWM Convention at their next renewal survey. Vessels using ballast water exchange as their primary ballast water management method are required to phase out this management method and meet the Regulation D2 discharge standard. Vessels may meet this standard by installing an IMO type approved ballast water management system, or as specified within the BWM Convention.

8.6.2.2. Biofouling

Biofouling on vessel hulls, external niche areas and immersible equipment pose a potential risk of IMS in Australian waters. Under the *National Biofouling Management Guidelines for the Petroleum Production and Exploration Industry* (Department of Agriculture, Fisheries and Forestry, 2009) and *2011 Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species* (Marine Environment Protection Committee, 2011), and Woodside PetDW IMS Management Procedure, a risk assessment approach is applied to manage biofouling.

The Woodside PetDW IMS Management Procedure outlines:

- regulatory framework for managing IMS
- Woodside's marine activities at risk of facilitating introduction or translocation of IMS into Victorian and Commonwealth waters
- Woodside and contractors' roles and responsibilities
- management and mitigation measures to prevent IMS incursions and manage identified biofouling pre-hire and post-mobilisation:
 - All contracted vessels are required to complete the IMS risk assessment process described in the Woodside PetDW IMS Management Procedure. The IMS risk assessment assigns a final risk category of low, moderate, uncertain, or high to vessels based on a range of information listed below. If a risk category of moderate, uncertain, or high is scored, a range of management options are available, including inspections, cleaning, or treatment of internal seawater systems to bring the risk category to low.
 - All documentation must be provided to Woodside during the Marine Management Process before hire.
 - Any vessel contracted for greater than 12 months will be audited annually.
- the Woodside IMS Risk Assessment and Approval Procedure form for assessing vessel and immersible equipment for IMS risk, is in alignment with *Reducing Marine Pest Biosecurity Risks through Good Practice Biofouling Management* (NOPSEMA, 2020). The Woodside IMS Risk Assessment and Approval Procedure form considers the:
 - history of the vessel, including destination and time spent in the last port of call
 - equipment deployment and cleaning history
 - status of anti-fouling coating and marine growth protection system
 - independent biofouling inspection results and timing

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- ballast water management, including water exchange and origin.

The completed IMS risk assessment must show that IMS risk is low for each project vessel and associated immersible equipment, prior to entering the operational area.

8.6.3. Environmental Impact Assessment

Potential IMS vary from one region to another depending on various environmental factors such as water temperature, salinity, nutrient levels and habitat type, which dictate their survival and invasive capabilities. IMS typically require hard substrate in the photic zone; therefore, requiring shallow waters to become established. Highly disturbed, shallow-water environments such as shallow coastal waters, ports and marinas are more susceptible to IMS colonisation, whereas IMS are generally unable to successfully establish in deep water ecosystems and open-water environments where the rate of dilution and the degree of dispersal are high (Williamson and Fitter, 1996; Paulay et al., 2002).

IMS have proven particularly difficult or impossible to eradicate from areas once established. If the introduction is detected early, eradication may be effective but is likely to be expensive, disruptive and, depending on the method of eradication, harmful to other local marine life.

Epifauna, infauna, and benthic habitats are susceptible to impacts from IMS due to the risk of changes to the ecosystem dynamics such as competition for resources and predation. Once introduced, IMS may prey on local species (which had previously not been subject to this kind of predation and therefore not have evolved protective measures against the attack), may outcompete indigenous species for food, space or light and can also interbreed with local species, creating hybrids such that the endemic species is lost. These changes to the local marine environment result in changes to the natural ecosystem.

The open waters of the operational area are not conducive to the settlement and establishment of IMS. Water depths in the operational area are > 50 m and there is very little hard substrate (aside from the Minerva subsea infrastructure being removed). Therefore, the risk of establishment, whilst credible, is remote given the water depth and absence of hard substrate.

IMS may economically damaging in areas where they have become established. Such impacts include direct damage to assets (fouling of vessel hulls and infrastructure, water intakes and outfalls, etc.) and depletion of commercially harvested marine life (e.g., shellfish stocks). There is little historical and current fishing effort in the operational area, and no fixed facilities that may be impacted by IMS in proximity to the operational area. Given the low likelihood of IMS translocation to, and colonisation within the operational area, the risk to other users is low.

8.6.4. Demonstration of As Low As Reasonably Practicable

Given the offshore location in water depths of > 50 m, the potential introduction of invasive marine species during the petroleum activity is considered a 'Type A' (lower order) risk based upon the Decision Context described in Section 6.1.1 of this EP.

The ALARP process performed for this aspect is summarised in Table 8-10. This process was completed as outlined in Section 6.1.1 and included consideration of all controls, analysis of the risk reduction proportional to the benefit gained, and final acceptance or justification if the control was not considered suitable. The result of this ALARP assessment contributes to the overall acceptability of the impact or risk.

Table 8-10: Introduction of IMS – ALARP assessment

Control Measure	Accept / Reject	Reason	Associated Performance Standards
<i>Eliminate</i>			
Abandon equipment in situ.	Reject	Abandonment in situ would eliminate the need for vessels to remove the Minerva subsea infrastructure, hence eliminating the risk of IMS introduction from biofouling or ballast water.	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>General Direction 831 required Woodside remove the Minerva subsea infrastructure. Engineering studies indicate removal of the infrastructure is feasible and practicable using well-proven methods.</p> <p>Abandonment in situ may result in additional environmental impacts, such as ongoing displacement of other users.</p> <p>Abandonment in situ requires substantial time and effort to secure regulatory approval. Approvals required to abandon subsea infrastructure in situ cannot reasonably be achieved in time to comply with General Direction 831.</p> <p>Cost is grossly disproportionate to the environmental benefit.</p>	
No discharge of ballast water during the petroleum activity	Reject	Although it would remove the risk of IMS being introduced through ballast discharge, it is not feasible as the use of ballast (including the potential discharge of ballast water) is a safety-critical requirement.	-
Substitution			
Source vessels based in Australia only	Reject	<p>Sourcing vessels from within Australia will reduce the likelihood of IMS from outside Australian waters; however, it does not reduce the likelihood of translocation of species native to Australia but alien to the operational area or of IMS that have established elsewhere in Australia.</p> <p>While the project will attempt to source vessels locally, it is not always possible. Availability cannot always be guaranteed when considering competing oil and gas activities in the region.</p> <p>The potential cost of implementing this control is grossly disproportionate to the minor environmental gain (or reducing an already remote likelihood of IMS introduction) potentially achieved by using only Australian based vessels. Consequently, this control is considered not practicable.</p>	-
Engineering			
Ballast water treated by a ballast water treatment system to eliminate IMS.	Reject	<p>Ballast water treatment systems reduce the risk of IMS in ballast water by killing living organisms in ballast water. Treatment systems may use a range of systems, including filtration, chemical disinfection, ultraviolet radiation, and heat.</p> <p>Ballast water treatment systems are not typically installed on MCV-type vessels, hence requiring a ballast water treatment system</p>	-

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Control Measure	Accept / Reject	Reason	Associated Performance Standards
		<p>would considerably constrain vessel selection. Constraining vessel selection could pose a risk to the meeting the requirements of General Direction 831 in the time required.</p> <p>Following adoption of the controls selected to manage the risk of introduction of IMS, ballast water treatment systems result in a negligible decrease in risk. Hence, the cost of requiring vessels to use a ballast water treatment system is grossly disproportionate to the reduction in environmental risk.</p>	
Administrate			
Project vessels will manage their ballast water using one of the approved ballast water management options, as specified in the Australian Ballast Water Management Requirements.	Accept	Controls based on legislative requirements under the <i>Biosecurity Act 2015</i> must be accepted. Control is feasible, standard practice with minimal cost. Benefits outweigh any cost sacrifice.	PS 15.1
Project vessels will manage their biosecurity risk associated with biofouling as specified in the Australian Biofouling Management Requirements.	Accept	Reduces the likelihood of transfer of marine pests between vessels within the operational area. No change in consequence would occur. Controls based on legislative requirements under the <i>Biosecurity Act 2015</i> – must be adopted.	PS 15.2
Woodside's IMS risk assessment process (Section 9.3) will be applied to the vessels and immersible equipment undertaking the petroleum activity that enter the operational area. Based on the outcomes, management options commensurate with the risk will be implemented to minimise the likelihood of IMS being introduced.	Accept	Risk assessment process includes initial risk screening, and the application of appropriate controls measures to be implemented. In doing so, the likelihood of transferring marine pests between the vessels and immersible equipment within operational area is reduced. No change in consequence would occur. Control is feasible and can be implemented at minimal cost. Control is considered good practice and implemented across all of Woodside's operations. Benefits outweigh any cost sacrifice.	PS 15.3
IMS inspection of all vessels	Reject	<p>This control is feasible, however is likely to have significant cost and schedule impacts. In addition, the IMS risk assessment process is seen to be more cost effective, as this control allows Woodside to manage the introduction of marine pests through biofouling, while targeting its efforts and resources to areas of greatest concern.</p> <p>Inspection of all vessels for IMS would reduce the likelihood of IMS being introduced to the operational area. However, this reduction is unlikely to be significant given the other control measures implemented.</p>	-

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8.6.4.1. ALARP Summary

The risk assessment and evaluation has identified a range of controls (Table 8-10) that, when implemented, are considered to manage the risk of introductions of IMS during the petroleum activity to ALARP.

Woodside considers the control measures described above are appropriate to reduce the risk of introductions of IMS during the petroleum activity. Additional control measures were identified in Table 8-10 to further reduce impacts but rejected since the associated cost or sacrifice was grossly disproportionate to the environmental benefit. The impacts are therefore considered reduced to ALARP.

8.6.5. Demonstration of Acceptability

Given the adopted controls, the risk of introductions of IMS will be reduced to a tolerable level. Further opportunities to reduce the risk have been investigated in Table 8-10.

The adopted controls are considered good oil-field practice/industry best practice. No concerns or objections regarding the risk of introductions of IMS have been raised by relevant stakeholders. Woodside has considered information contained in recovery plans and threat abatement plans (Section 4.4.4). The environmental risks meet the Woodside environmental risk acceptability criteria (Section 6.3).

Relevant requirements have been met, including:

- *Australian Ballast Water Management Requirements* (Department of Agriculture, Water, and the Environment, 2020), which gives effect to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention)
- *National Biofouling Management Guidelines for the Petroleum Production and Exploration Industry* (Department of Agriculture, Fisheries and Forestry, 2009)
- *2011 Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species* (Marine Environment Protection Committee, 2011)
- *Reducing Marine Pest Biosecurity Risks through Good Practice Biofouling Management* (NOPSEMA, 2020b)

The environmental risks are consistent with the principles of ESD:

- Integration principle: Woodside has undertaken a range of studies to determine the approach to decommissioning the Minerva field, which have informed Woodside's deliberations. The decommissioning strategy being pursued by Woodside integrates long-term and short-term economic, environmental, social, and equitable considerations.
- Precautionary principle: The vectors for IMS introductions are well understood, as are measures to prevent IMS introductions. The receiving environment is well understood. While the impacts of the introduction of IMS are uncertain (as they may vary between IMS), the risk of IMS introduction is ALARP because of the controls that will be implemented and the unsuitable environment in the operational area (i.e., deep water with little hard substrate, hence unsuited for IMS survival)
- Inter-generational principle: The risk of introductions of IMS will not impact upon the environment such that future generations cannot meet their needs.
- Biodiversity principle: The risk of introductions of IMS will not impact upon biodiversity or ecological integrity in the long-term.

Woodside considers the risk to be managed to an acceptable level.

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8.6.6. Environmental Performance Outcome, Performance Standards and Measurement Criteria

Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
<p>EPO 15</p> <p>No introduction and establishment of invasive marine species into the operational area as a result of the petroleum activity.</p>	<p>C 15.1</p> <p>Project vessels will manage their ballast water using one of the approved ballast water management options, as specified in the Australian Ballast Water Management Requirements.</p>	<p>PS 15.1.1</p> <p>Project vessels to manage ballast water using an approved ballast water management option as specified in the Australian Ballast Water Management Requirements.</p>	<p>MC 15.1.1.1</p> <p>Records demonstrate that all project vessels implement approved ballast water management option.</p>
		<p>PS 15.1.2</p> <p>Project vessels to have a valid ballast water management certificate (as applicable by vessel classification).</p>	<p>MC 15.1.2.1</p> <p>Records demonstrate that project vessels have a valid ballast water management certificate (as applicable by vessel classification).</p>
		<p>PS 15.1.3</p> <p>Project vessels to maintain a complete and accurate ballast water record system as requirements by the Australian Ballast Water Management Requirements.</p>	<p>MC 15.1.3.1</p> <p>Records demonstrate that project vessels maintain complete and accurate ballast water record system.</p>
	<p>C 15.2</p> <p>Project vessels will manage their biosecurity risk associated with biofouling as specified in the Australian Biofouling Management Requirements.</p>	<p>PS 15.2</p> <p>If mobilising from beyond Australia, project vessels will report via MARS biofouling management options:</p> <ul style="list-style-type: none"> ▪ Implementation of an effective biofouling management plan and record book ▪ Vessel cleaned of al biofouling within 30 days prior to arriving in Australian territory ▪ Implementation of an alternative biofouling management method pre-approved by DAFF 	<p>MC 15.2.1</p> <p>Records demonstrate that project vessels mobilising from beyond Australia have reported biofouling management options via MARS.</p>

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Environmental Performance Outcomes	Controls	Performance Standards	Measurement Criteria
	<p>C 15.3</p> <p>Woodside's IMS risk assessment process (Section 9.3) will be applied to the vessels and immersible equipment undertaking the petroleum activity that enter the operational area.</p>	<p>PS 15.3.1</p> <p>Prior to entering the operational area, project vessels and relevant immersible equipment are determined to be low risk²¹ of introducing IMS of concern and maintain this low-risk status during the petroleum activity.</p>	<p>MC 15.3.1.1</p> <p>Records of IMS risk assessments maintained for the project vessels and relevant immersible equipment entering the Operational to undertake the petroleum activity.</p>
	<p>Based on the outcomes, management options commensurate with the risk will be implemented to minimise the likelihood of IMS being introduced.</p>	<p>PS 15.3.2</p> <p>In accordance with Woodside's IMS risk assessment process (Section 9.3), the IMS risk assessments will be undertaken by an authorised environment adviser who has completed relevant Woodside IMS training or by qualified and experienced IMS inspector.</p>	<p>MC 15.3.2.1</p> <p>Records confirm that the IMS risk assessments undertaken by an Environment Adviser or IMS inspector (as relevant).</p>

²¹ Low risk of introducing IMS of concern is defined as either no additional management measures required or, management measures have been applied to reduce the risk.

9. Implementation Strategy

In accordance with regulation 22 of the Environment Regulations, the Environment Plan must contain an implementation strategy for the petroleum activity and monitoring, recording and reporting arrangements. The implementation strategy presented in this section provides specific practices and procedures to ensure:

- All the environmental impacts and risks of the petroleum activity will be continually identified and reduced to a level that is ALARP
- Control measures identified in the EP are effective in reducing the environmental impacts and risks of the activity to ALARP and to acceptable levels
- That environmental performance outcomes and environmental performance standards are met
- Arrangements are in place to respond to, and monitor, impacts of oil pollution emergencies
- Arrangements for on-going consultation with relevant authorities, persons and organisations are in place and maintained through the activity.

9.1. Systems, Practices and Procedures

9.1.1. Woodside PetDW HSE Management System

The Woodside PetDW Health, Safety and Environment (HSE) Management System defines the boundaries within which all activities are conducted. It provides a structured framework to set common requirements, boundaries, expectations, governance and assurance for all activities. It also supports accountabilities and responsibilities as defined in the organisational structure. The overarching objective of the Woodside PetDW Management System is to aspire to zero harm to people, communities and the environment, and achieve leading industry practice. The structure of the Woodside Management System is hierarchical (Figure 9-1).



Figure 9-1: Woodside PetDW HSE Management System

The documents in Figure 9-1 address specific areas (e.g., corporate performance reporting, risk management, incident investigation) where it is important that activities are conducted consistently across the organisation.

The top level of the triangle shown in Figure 9-1 is the Company ‘Our Values’; a copy of which is provided in Appendix A. ‘Our Values’ directs the approach to all activities within the Company. It also provides a means of aligning Company values with strategic direction and measures of success. ‘Our Values’ are supported by the Company Health, Safety and Environment Policy (Appendix B).

The Woodside Our Requirements detail and define business planning, risk management, and assurance expectations of key process areas. They also serve as audit protocol against which all groups in Woodside

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are assessed. Categories of Our Requirements include (for example) HSE, Human Resources, Legal, Corporate Affairs, Supply, and Information Management.

The Minerva decommissioning activities will be undertaken in accordance with the objectives of Our Values, which includes compliance or exceedance with regulatory requirements, setting of objectives and targets and continual improvement.

This EP has been designed to meet the environmental aspects of the Woodside PetDW HSE Management System framework and establishes the foundation for continual improvement through the application, monitoring and auditing of consistent requirements across all aspects of the petroleum activity including:

- identification of statutory obligations and commitments to ensure maintenance of license to operate
- implementation of petroleum risk management processes, including this EP
- scheduled monitoring and auditing of control implementation
- completion of reviews, and reporting outcomes of these reviews

9.2. Environment Plan Organisation, Roles, and Responsibilities

A defined chain of command with the roles and responsibilities for key Company and contractor personnel in relation to Environment Plan implementation, management and review are described below in Table 9-1. It is the responsibility of all Company employees and contractors to apply Company requirements and 'Our Values (Appendix A) in their areas of responsibility.

Table 9-1: Key personnel and environmental responsibilities

Title	Environmental Responsibilities
<i>Office-based Roles</i>	
Woodside VP of Projects Australia	Has Technical Authority and manage team of projects and decommissioning professionals. Ensures sufficient resources are provided to implement the commitments made in this EP
Woodside Decommissioning Delivery Manager (or equivalent)	The Woodside Decommissioning Delivery Manager reports to the Woodside VP of Projects Australia and is primarily responsible for: <ul style="list-style-type: none"> ▪ supervise decommissioning operations, including management of change ▪ be accountable for developing the decommissioning engineering and associated programs ▪ ensure compliance with company policies, standards and statutory requirements.
Woodside Project Manager	The Woodside Project Manager Reports to the Woodside Decommissioning Delivery Manager and is primarily responsible for: <ul style="list-style-type: none"> ▪ Monitor and manage the activity so it is undertaken as per the relevant standards and commitments in this EP. ▪ Notify the Woodside Environment Adviser of any scope changes in a timely manner. ▪ Liaise with regulatory authorities as required. ▪ Review this EP as necessary and manage change requests. ▪ Ensure all project and support vessel crew members complete an HSE induction. ▪ Verify that contractors meet environmental related contractual obligations. ▪ Confirm environmental incident reporting meets regulatory requirements (as outlined in this EP) and Woodside's Health, Safety and Environment Reporting and Investigation Procedure. ▪ Monitor and close out corrective actions identified during environmental monitoring or audits.

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Title	Environmental Responsibilities
Woodside Environment Manager	<p>The Woodside Environment Manager oversees the implementation of environmental requirements in the EP including:</p> <ul style="list-style-type: none"> ▪ Ensure compliance with Our Values and Management Standards, this EP and regulatory responsibilities. ▪ Ensure incident prepared and response arrangement meet Woodside and regulatory requirements. ▪ Ensure environmental incidents or breaches of EPOs, EPSs or MCs are reported in line with Woodside's incident reporting requirements.
Woodside Environment Adviser	<p>The Woodside Environment Adviser reports to the Woodside Environment Manager and manages day to day environmental requirements of the activities including:</p> <ul style="list-style-type: none"> ▪ Verify relevant Environmental Approvals for the activities exist prior to commencing activity. ▪ Track compliance with performance outcomes and performance standards as per the requirements of this EP. ▪ Prepare environmental component of relevant Induction Package. ▪ Assist with the review, investigation and reporting of environmental incidents. ▪ Ensure environmental monitoring and inspections/audits are undertaken as per the requirements of this EP. ▪ Liaise with relevant regulatory authorities as required. ▪ Assist in preparation of external regulatory reports required, in line with environmental approval requirements and Woodside incident reporting procedures. ▪ Monitor and close out corrective actions (Compliance Action Register (CAR)) identified during environmental monitoring or audits. ▪ Provide advice to relevant Woodside personnel and contractors to assist them to understand their environment responsibilities. ▪ Liaise with primary contractors to ensure communication and understanding of environment requirements as outlined in this EP and in line with Woodside's Compass values and management systems.
Woodside Corporate Affairs Adviser	<ul style="list-style-type: none"> ▪ Prepare and implement the Relevant Persons Consultation Plan for the petroleum activity. ▪ Report on relevant persons consultation. ▪ Ongoing liaison and notification as required as per Sections 5 and 9.9
Woodside Marine Assurance Superintendent	<ul style="list-style-type: none"> ▪ Conducts relevant audit and inspection to confirm vessels comply with relevant Marine Orders and Woodside Marine Charters Instructions requirements to meet safety, navigation and emergency response requirements.
Woodside CIMT Incident Commander	<p>On receiving notification of an incident, the Woodside CIMT Incident Commander shall:</p> <ul style="list-style-type: none"> ▪ establish and take control of the CIMT and establish an appropriate command structure for the incident ▪ assess situation, identify risks and actions to minimise the risk ▪ communicate impact, risk and progress to the Crisis Management Team and stakeholders ▪ develop the incident action plan (IAP) including setting objectives for action ▪ approve, implement and manage the IAP ▪ communicate within and beyond the incident management structure ▪ manage and review safety of responders ▪ address the broader public safety considerations ▪ conclude and review activities.

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Title	Environmental Responsibilities
Contractor Project Manager	<ul style="list-style-type: none"> ▪ Prepare, maintain, and implement Contractor HSE Management Plans and Procedures ▪ Ensure compliance with this EP, regulatory and HSE responsibilities relevant to their scope of work ▪ Maintain clear lines of communication with the Woodside Project Manager
Decommissioning Logistics Lead	<ul style="list-style-type: none"> ▪ Provide oversight of contractor(s) implementing the waste management arrangements ▪ Ensure compliance with the waste management plan
Field-based Roles	
Vessel Contractor Representative	<p>The Vessel Contractor Representative reports to the Contractor Project Manager and is responsible for:</p> <ul style="list-style-type: none"> ▪ be responsible for managing and supervising decommissioning engineering activities in the field site ▪ ensure field activities are conducted according to the approved programme requirements ▪ monitor and audit the field activities to ensure compliance with this EP and the regulatory and HSE responsibilities ▪ manage change during field activities ▪ disseminate project-specific environmental compliance requirements as required ▪ ensure environmental incidents or breaches of EPOs, EPSs or MCs are reported and recorded in line with Woodside's incident reporting requirements ▪ comply with this EP, and all regulatory and project obligations applicable to their assigned role.
Vessel Master	<p>The Vessel Master has overall responsible and is in charge of all aspects of a vessels operation and works closely with the Vessel Contractor Representative during activities including:</p> <ul style="list-style-type: none"> ▪ manage activities and safety on-board vessel for the duration at sea, and operate under Woodside requirements, relevant Commonwealth Acts and Regulations ▪ ensure vessel operations are undertaken as per this EP and any approval conditions ▪ conduct SOPEP drills as per vessel's schedule ▪ report environmental incidents or breaches of EPOs, EPSs or MCs on vessel, in line with Woodside's incident reporting requirements ▪ report recordable incidents ▪ comply with this EP, and all regulatory and project obligations applicable to their assigned role
Vessel Logistics Coordinators	<ul style="list-style-type: none"> ▪ ensure waste is managed on the relevant project vessel and sent to shore as per the relevant Waste Management Plan.
Woodside Site Representative/ Engineer	<p>The Woodside Site Representative reports to the Woodside Project Manager and primary responsibilities include:</p> <ul style="list-style-type: none"> ▪ ensure activities are undertaken as detailed in this EP. ▪ ensure the management measures made in this EP are implemented on the vessel ▪ ensure environmental incidents or breaches of objectives, standards or criteria outlined in this EP, are reported as per the Woodside Corporate Event Notification Matrix ▪ verify HSE improvement actions identified during the project are implemented where practicable ▪ ensure periodic environmental inspections are completed.
All crew	<p>All crew comply with orders of the Vessel Master and Vessel Contractor Representative and responsibilities include:</p> <ul style="list-style-type: none"> ▪ Work in accordance with accepted HSE obligations and practices

Title	Environmental Responsibilities
	<ul style="list-style-type: none"> ▪ Comply with this EP, and all regulatory and project obligations applicable to their assigned role ▪ Report any hazardous condition, near miss, unsafe act, accident or environmental incident immediately to their supervisor ▪ Report sightings of marine fauna and marine pollution ▪ Attend HSE meetings and training and drills when required ▪ Understand their obligation to 'stop-the-job' due to HSE concerns ▪ Comply with this EP, and all regulatory and project obligations applicable to their assigned role

9.3. Woodside IMS Risk Assessment Process

9.3.1. Objective and scope

To minimise the potential risk of introducing IMS because of the petroleum activity, all applicable vessels and immersible equipment will be subject to Woodside's IMS risk assessment process (unless exempt as outlined below). The objective of the risk assessment process is to identify the level of threat a contracted vessel, or immersible equipment might pose if no additional risk reduction management measures are implemented. This allows Woodside (and its contractors) to apply management options that are commensurate to the identified level of risk.

In context of the activities specified in Section 3, the IMS risk assessment process does not apply to the following:

- vessels or immersible equipment that do not plan to enter the IMS Management Area (IMSMA²²) or operational areas defined in environmental approvals
- 'New build' vessels launched less than 14 days prior to mobilisation
- Vessels or immersible equipment which have been inspected by a suitably qualified IMS inspector who has classified the vessels or immersible equipment as acceptably low risk no more than 14 days prior to mobilisation
- Locally sourced vessels or immersible equipment from within Victorian coastal waters. Vessels or immersible equipment are defined as locally sourced when the same supply facilities/port have been used since their last IMS inspection, full hull clean in dry dock or application of antifouling coating (AFC²³).

9.3.2. Risk assessment process

Woodside's IMS risk assessment process was developed with regard to:

- *Australian Ballast Water Management Requirements* (Department of Agriculture, Water, and the Environment, 2020), which gives effect to the International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (BWM Convention)
- *National Biofouling Management Guidelines for the Petroleum Production and Exploration Industry* (Department of Agriculture, Fisheries and Forestry, 2009)

²² IMSMA is based on current legal framework and includes all nearshore waters around Australia, extending from the lowest astronomical tide mark to 12 nm from land (including Australian territorial islands). The IMSMA also includes all waters within 12 nm from the 50 metre depth contour outside of the 12 nm boundary (i.e. submerged reefs and atolls).

²³ Vessels and immersible equipment can still be classified as locally sourced even if the AFC application occurred in a different port provided the amount of time between AFC application and departure to the locally sourced area (i.e., period of time in waters < 12 nm/50 m water depth) did not exceed consecutive 7 days or the period of time the vessel or immersible equipment has spent within the locally sourced zone exceeds 1 year (i.e., the risk of introducing a species from a different location has already passed).

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- *2011 Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species* (Marine Environment Protection Committee, 2011)
- *Reducing Marine Pest Biosecurity Risks through Good Practice Biofouling Management* (NOPSEMA, 2020b)

To effectively evaluate the potential for vessels and immersible equipment to introduce IMS, a risk assessment process has been developed to score and evaluate the risk posed by each project vessel, or immersible equipment planning to undertake activities within the operational areas. The risk assessment process considers a range of factors, as listed in Table 9-2 and Table 9-3.

The IMS risk assessments will be undertaken by a trained environment adviser who has completed relevant Woodside IMS training or by a qualified and experienced IMS inspector. A quality assurance/quality control process is implemented for all Woodside conducted IMS risk assessments where a secondary trained environment adviser verifies the assessment to minimise the risk of misapplication and errors within the risk assessment process.

Table 9-2: Key factors considered as a part of the risk assessment process for vessels

Factors	Details
Vessel type	The risk of IMS infection varies depending on the type of vessel undertaking the activity. A higher risk rating is applied for more complex, slow-moving vessels (e.g., dredges) in comparison to simple vessels (e.g., crew transfer vessel).
Recent IMS inspection and cleaning history, including for internal niches	In the case of biofouling on external hull niches, different risk ratings are applied dependant on whether out-of-water or in-water IMS inspections by qualified IMS inspectors and cleaning (if required) have been undertaken prior to contract commencement. If an IMS inspection (and clean if required) has not been undertaken in the past six months (from the time of contract commencement), the highest risk factor is applied. The risk factor then lessens for vessels as the time between inspection and mobilisation reduces.
Out-of-water period before mobilisation	A risk reduction factor can be applied for vessels that are hauled out and then mobilised as deck cargo or by road during mobilisation, therefore becoming air dried over an extended period. Risk reduction factor increases with exposure time out of water.
Age and suitability of AFC at mobilisation date	AFC manufacturers provide a range of coatings, each designed to avoid premature coating failure if it is correctly applied and matched to the vessel's normal speeds and activity profile (i.e., proportion of time spent stationary or below three knots), and its main operational region (i.e., tropical, sub-tropical temperate). If the AFC type is deemed to be unknown, unsuited or absent, the highest risk value is applied. If the AFC type is suitable the risk factor applied reduces with age since application.
Internal treatment systems	A risk reduction factor applied if the vessel has an internal biological fouling control system in place at the time of assessment, or evidence of manual dosing.
Vessel origin and proposed area of operation	Differing risk ratings are assigned in relation to the climatic relationship between the vessel's origin and the proposed climatic region of the proposed area of operation. Highest risk rating is applied to similar climatic regions.
Number of stationary/slow speed periods > 7 days	A risk factor is calculated based on the number of 7 day periods that the vessel has operated at stationary or at low speed (less than three knots) in port or coastal waters which is any waters less than 50 m deep outside 12 nm from land or any waters within 12 nm of land. The greater the number of periods the higher the risk factor applied.
Region of stationary or slow periods	A further multiplier is applied depending on the location of the stationary/slow speed periods. The highest risk rating applied if the stationary or slow speed periods occurred within ports or coastal waters of the same climatic region,
Type of activity – contact with seafloor.	The potential for the introduction of IMS varies on the planned vessel activity taking place. Those activities that come in contact with sediments and thus have the potential to accumulate and harbour IMS in areas such as hoppers (dredges) and spud cans (drilling rigs) are considered to have a greater risk of infection.

Table 9-3: Key factors considered as a part of the risk assessment process for immersible equipment

Factors	Details
Region of deployment since last thorough clean, particularly coastal locations	Climatic region of use since last overhaul, thorough cleaning or prolonged period out of water (> 28 days). Highest risk rating is applied to similar climatic regions. Activities occurring in nearshore areas (less than 50 m deep and/or within 12 nm from land) are given the highest risk rating.
Duration of deployments	Maximum duration of deployment (maximum time in water) since last overhaul or thorough cleaning. The longer the period of immersion the higher the risk rating applied.
Duration of time out of water since last deployment	A further risk reduction factor can be applied for immersible equipment that has been out of the water for an extended period.
Transport conditions during mobilisation	If the equipment is stored in damp conditions, then a high-risk factor is applied, while if equipment is stored in dry and well ventilated (low humidity) conditions then a low risk factor is applied.
Post-retrieval maintenance regime.	A risk reduction factor is applied if the equipment/item of interest is routinely washed, cleaned, checked and/or disassembled between project sites. While a higher risk rating is applied where no routine cleaning occurs.

Following implementation of the risk assessment process, vessels and/or immersible equipment are classified as one of three risk categories, as defined below:

- ‘Low’ – low risk of introducing IMS of concern and hence no additional management required, or management options have been applied to reduce the risk.
- ‘Uncertain’ – risk of introducing IMS is not apparent and as such the precautionary approach is adopted, and additional management options may be required.
- ‘High’ – high risk of introducing IMS means additional management options are required prior to this vessel mobilising to the operational areas.

Following the allocation of a ‘low’ risk rating for a vessel or immersible equipment, the information provided by the vessel operator for the purposes of risk assessment must be confirmed prior to mobilisation. For vessels or equipment classified as posing an ‘uncertain’ or ‘high’ theoretical risk, a range of management options are presented to reduce this theoretical risk to acceptable levels and achieve a low-risk status. These management options have been developed with the intention of reducing IMS risk to levels that are as low as reasonably practicable (i.e., ALARP). It is a flexible approach that allows for a range of management actions to be tailored for a specific vessel movement. These will be assessed on a case-by-case basis and may include, but not limited to, the following:

- Inspection (desktop, in-water, or dry dock) by a suitably qualified and experienced IMS inspector to verify risk status. Where practicable, the inspection shall occur within seven days (but not more than 14 days) prior to final departure to the operational areas.
- In-water or dry dock cleaning of the hull and other niche areas. This is typically applied where the risk assessment outcome is High risk driven by the age of the AFC on the vessel and its time spent in similar climatic region ports.
- Treatment of vessels internal seawater systems. This is typically applied in isolation for vessels with AFC applied to their hull within the last twelve months and where subsequent assessment through the process achieves a low-risk rating.

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- Limiting the duration that the vessel spends within the IMSMA to a maximum of 48 hours (cumulative entries)²⁴. This is applicable for Uncertain risk vessels only.
- Reject the vessel.

Project vessels and immersible equipment are required to be a low risk of introducing IMS prior to entering the operational areas or commencing activities defined under this EP.

9.4. Unexpected Finds Procedure

In the event of the discovery of what appears to be Underwater Cultural Heritage (defined as 'any trace of human existence that has a cultural, historical or archaeological character and is located under water'); the following Unexpected Finds Procedure will apply:

- All activities with the potential to impact the suspected Underwater Cultural Heritage must cease immediately. Retain all records of the potential Underwater Cultural Heritage, including any imagery, description and location.
- Person who discovers the heritage object must inform the Activity Supervisor.
- Activity Supervisor must notify Woodside's Global Heritage Manager.
- Woodside will specify an appropriate buffer around the potential Underwater Cultural Heritage, taking into consideration the nature and scale of the potential Underwater Cultural Heritage and the activities to be managed.
- No seabed disturbance may occur within the buffer area around the potential Underwater Cultural Heritage until approved by Woodside's Global Heritage Manager.
- Woodside's Global Heritage Manager must notify a qualified underwater archaeologist and provide all available documentation of the potential Underwater Cultural Heritage.
- If the potential Underwater Cultural Heritage appears to be Aboriginal Underwater Cultural Heritage, Woodside's Global Heritage Manager must notify the appropriate Traditional Custodians to determine whether it is a heritage site and if so, how the site should be managed.
- If the potential Underwater Cultural Heritage appears to be a shipwreck or aircraft that has been wrecked for more than 75 years or is otherwise reportable under Section 40 of the UCH Act, Woodside's Global Heritage Manager must notify the Minister responsible for the UCH Act, the DCCEEW underwater archaeology section through the Australasian Underwater Cultural Heritage Database, and Heritage Victoria.
- If the suspected heritage object includes human remains, Woodside's Global Heritage Manager must also notify:
 - The Australian Federal Police (phone: 131 444) of the location of the remains, that the remains are likely to be historic or Aboriginal in origin, and that it may be appropriate that Traditional Custodians and a maritime archaeologist are present during any handling of the remains; and
 - The Office of the Federal Environment Minister in accordance with Section 20 of the ATSIHP Act.
- Work must not recommence in the vicinity of the potential heritage object until Woodside's Global Heritage Manager provides written approval. Woodside's Global Heritage Manager must only provide written approval once agreed management measures are implemented consistent with approvals and legislation or where the potential Underwater Cultural Heritage is confirmed to not be Underwater Cultural Heritage.

²⁴ 48 hours is considered an appropriate and ALARP management control, as it significantly reduces the potential for any IMS associated with a vessel to successfully establish suitable habitat within the IMSMA. This reduction of risk is primarily achieved via a direct reduction of the propagule pressure associated with a particular vessel movement.

9.5. Waste Management

The petroleum activity will generate wastes from the operation of vessels (e.g., garbage), the removal of equipment from VIC/L22 and VIC/PL33, and the decontamination of the equipment onshore (if required). The nature and scale of wastes generated directly by the petroleum activity are described in Section 7.7.

Woodside and its contractors have, or will, developed waste management plans that will be implemented during the petroleum activity. These include:

- vessel-specific waste management plans
- a waste management plan for recycling and disposal of recovered equipment.

Vessel-specific waste management plans are standard requirements onboard vessels contracted by Woodside. These plans are routinely implemented by vessel contractors to meet relevant requirements, such as Marine Orders giving effect to MARPOL.

The waste management plan details how the recovered equipment will be stored and disposed of. The plan details how waste materials will be managed in a safe and environmentally responsible way. The plan will be implemented by Woodside's contractors under Woodside's supervision, which will operate the onshore equipment recovery and decontamination facilities.

Recovered Minerva subsea infrastructure will be managed through the following, in accordance with the waste management hierarchy shown in Figure 9-2:

- Reduce (note, there are no opportunities to reduce the Minerva subsea infrastructure waste)
- Reuse
- Recycle
- Waste to energy
- Disposal to landfill
- Entombment.

This hierarchy ranks disposal options from the most preferred (re-use and repurposing) to the least preferred (entombment).

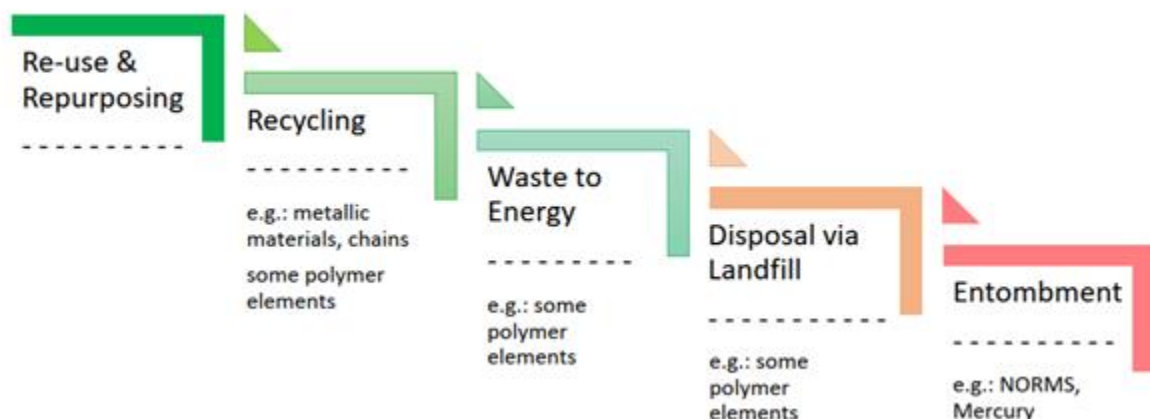


Figure 9-2: Minerva equipment removal waste management hierarchy

The final waste management strategy for each piece of recovered subsea infrastructure is being developed. The waste management hierarchy preferences have been provided to the waste management contractors during the tendering process.

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The contractor evaluation and selection process included:

- Issuing the onshore disposal/recycling sub-contract package to a variety of bidders including varying tier of company, geographic location, and core business. This was done to establish the industry capabilities in order to develop a functional execution plan.
- The evaluation criteria included:
 - offshore testing
 - logistics capability
 - provision of local yard & facilities
 - onshore cleaning (hazardous materials)
 - hazardous material disposal
 - onshore deconstruction
 - mixed material processing
 - metallic recycling
 - plastic recycling
 - manpower & equipment.

The following preferences were made during the waste management contractor tender evaluation:

- Selection of preferred onshore discharge points and dismantling and clean-up sites is:
 - primarily driven by the proximity of the onshore discharge points / port facilities to the offshore field
 - additional evaluation criteria included port facilities and capabilities, port services availability, etc.
 - number of vessel trips between field and port for Minerva subsea infrastructure removal scope
 - port locations considered
 - Port of Geelong has been selected as the preferred location.
- Selection of dismantling and clean-up sites included in item above with preference for onshore locations that are in proximity to the port to minimise overland transportation and logistics requirements.
- Woodside is targeting a 90% landfill avoidance by weight for the Minerva Decommissioning campaign (including infrastructure recovered during the plug and abandonment component).
- Preference for waste management contractors who can follow the waste management hierarchy philosophy, to reduce waste disposal to landfill.

Woodside will establish a role, the Onshore Processing and Recycling Supervisor, that will conduct onsite surveying/verification of all retrieved infrastructure. The role is responsible for obtaining key chain-of-custody documentation from the contractor regarding the end-state of wastes generated during decommissioning of the Minerva field. The Woodside Decommissioning Logistics Lead will conduct waste environmental audits on contractor and subcontractor sites prior to sites receiving retrieved infrastructure and during operations. This audit will be undertaken to confirm that the contractor has the facilities and systems to be able to manage wastes in an environmentally responsible manner and in accordance with the waste management plan.

Contaminants such as NORM and mercury may be present on the recovered production infrastructure, although monitoring indicates little radioactivity within the Minerva subsea infrastructure (Section 3.5.2.3). Once onboard the vessel, this equipment will be checked for contaminants and, if present, segregated from other waste. All equipment containing contaminants will be cleaned onshore. Clean recovered subsea infrastructure will be recycled if it meets clearance criteria. Recovered subsea infrastructure that doesn't meet clearance criteria and contaminated cleaning wastes will be disposed of at an approved facility in accordance with legislative requirements.

Woodside is committed to clear stewardship and assurance measures to verify implementation of the waste management plan under the agreement with the contractor. Woodside will maintain a register of final disposal details to maintain stewardship especially regarding hazardous wastes. Material will be tracked as they move from offshore recovery through the onshore receipt assessment, cleaning, decontamination, de-energising,

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and disposal stages. The waste management plan requires a tracking and reporting system be implemented to record details of all recovered equipment being recycled or disposed of.

Woodside is committed to re-using, repurposing and/or recycling as much of the decommissioning infrastructure as practicable. Any wastes generated during the petroleum activity, including recovery of well infrastructure, will be disposed in accordance with the Minerva Decommissioning Waste Management Plan.

Hazardous waste materials will be classified and managed in accordance with the waste management procedures. This will include ensuring hazardous materials are disposed of by suitable waste management facilities.

Decontamination of potentially hazardous material will consist of:

- testing to quantify hazardous material and confirm the removal of hazards after decontamination
- internal flushing of structures and flexibles as required for processing and disposal
- collection of the wastewater and extraction of contaminated material
- disposal of contaminated waste through authorised facilities
- relocation of cleaned equipment from hazardous to non-hazardous storage locations for handover to the disposal pathway.

Metallic material, which comprises most of the equipment to be recovered, will be processed following decontamination (if required) by breaking it down for recycling. Tooling will be developed to process mixed material to separate metallic equipment from other materials (e.g., separating plastic coatings from chemical line steel carcasses). All metallic material, including metal recovered from mixed materials, is expected to be recycled. The complexity of recovering and recycling plastics is variable depending on the nature of the plastics; some plastic material may not feasibly be recycled.

Material that cannot practicably be recycled will be disposed of in accordance with its waste classification. Non-hazardous waste, such as marine growth, general wastes, and plastics not suitable for recycling will be sent to landfill. Hazardous waste will be packaged, stored, transported, and disposed of in accordance with the Victorian Environment Protection Regulations 2021. Hazardous wastes are expected to be entombed with a dedicated long-term hazardous waste disposal facility.

The waste management plan will meet relevant requirements such as:

- classification and management of wastes in accordance with Schedule 5 of the Victorian Environment Protection Regulations 2021
- the Minamata Convention
- the Basel Convention.

9.6. Training and Competency

9.6.1. Competence, Environmental Awareness and Training

The Woodside PetDW HSE Management System Framework establishes the foundation for continual improvement through the application of consistent requirements across all aspects of petroleum activity including the establishing and maintenance of the competencies for personnel, and provision of training to promote expected behaviours.

For contractors, environmental risks in contracts are managed in accordance with the requirements outlined in Woodside PetDW HSE Management Standard. As part of the contractor management process, the vessel Contractor's Environmental Management System is assessed to confirm it is aligned with 'Our Values', the Woodside PetDW HSE Management Standard and meets all commitments made in this EP. If, and wherever, the Contractor's Management System is found to be deficient it will be required to be modified prior to mobilisation to site.

All personnel on the vessels are required to be competent and suitably trained to undertake their assigned positions. This may be in the form of 'On the Job' or external training. Contractors are responsible for identifying training needs and keeping records of training undertaken. Environmental awareness inductions

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(Section 9.6.3) are required to be undertaken by all offshore personnel as part of their induction to undertaking petroleum activity.

9.6.2. Operational Control

The petroleum activity is identified, planned, and carried out in accordance with relevant legislation, EP commitments and internal environment standards and procedures. Verification processes are in place to ensure these controls and requirements are being implemented to reduce significant risks to acceptable levels. Some of the key operational controls include:

- task specific toolbox talks, Job Safety Analysis (or equivalent), and associated procedures / checklists
- contractors' vessel-specific procedures
- scheduled Preventative Maintenance Systems, tracked through dedicated software packages
- environmental inspections by the HSE personnel.

9.6.3. Specific Environmental Awareness

Inductions are provided to all relevant personnel, including contractor personnel such as vessel crew, before mobilising to or on arriving at the activity location. This induction covers the HSE requirements and environmental information specific to the location of the petroleum activity. The induction will include environmental information about:

- description of the activity
- ecological and socio-economic values of the activity location
- regulations relevant to the activity
- Woodside's PetDW HSE Management System Framework – Out Values
- EP importance/structure/implementation/roles and responsibilities
- main environmental aspects/hazards and potential environmental impacts and related performance outcomes
- waste management requirements and process (segregation of landfill, recycle and hazardous wastes) and location of bins
- oil spill preparedness and response
- monitoring and reporting on performance outcomes and standards using MC
- incident reporting.

All personnel who undertake the induction are required to sign an attendance sheet, which is retained by the project vessel contractors.

A copy of this EP is provided to the project vessel contractor before performing the petroleum activity.

9.6.4. Contractor Management

For Woodside contractors, HSE risks in contracts are managed in accordance with the requirements outlined in the Woodside (PetDW) HSE Management Standard. As part of the contractor management process, Woodside implements pre- and post-contract award processes and activities aimed at ensuring contracts consistently and effectively cover the management of HSE in line with Woodside's HSE-related Our Requirements, the Woodside Our Values, and the Woodside (PetDW) HSE Standard.

While Woodside (PetDW) HSE Management System applies to the way Woodside execute its responsibilities under this EP, operational control of the MODU and project vessels remains the responsibility of the vessel contractor and shall be managed in accordance with Woodside Contractor Management Systems.

9.6.5. Emergency and Spill Response

Woodside's arrangements for spill response are common across its Australian operating assets and activities to ensure the controls are consistent. The overall objective of testing these arrangements is to ensure that

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Woodside maintains an ability to respond to a hydrocarbon spill, specifically to:

- ensure relevant responders, contractors and key personnel understand and practise their assigned roles and responsibilities
- test response arrangements and actions to validate response plans
- ensure lessons learned are incorporated into Woodside's processes and procedures and improvements are made where required.

If new response arrangements are introduced, or existing arrangements significantly amended, additional testing is undertaken accordingly. If the project vessels leave the field for extended periods, additional testing will be undertaken when it returns to routine operations. Additional activities or activity locations are not anticipated to occur; however, if they do, testing of relevant response arrangements will be undertaken as soon as practicable.

In addition to the testing of response capability described in Appendix E, up to eight formal exercises are planned annually, across Woodside, to specifically test arrangements for responding to a hydrocarbon spill to the marine environment.

9.6.6. Marine Operations and Assurance

Woodside's marine assurance is managed by the Marine Assurance Team of the Logistics Function in accordance with Woodside's Marine Offshore Vessel Assurance Procedure. The Woodside process is based on industry standards and consideration of guidelines and recommendations from recognised industry organisations such as Oil Companies International Marine Forum and International Maritime Contractors Association.

Woodside's Marine Offshore Assurance process is mandatory for all vessels (other than Tankers and Floating Production Storage and Offloading vessels) that are chartered directly by or on behalf of Woodside, including for short term hires (i.e., <3 months in duration). It defines applicable marine offshore assurance activities, ensuring all vessel operators operate seaworthy vessels that meet the requirements for a defined scope of work and are managed with a robust Safety Management System.

The process is multi-faceted and encompasses the following marine assurance activities:

- safety management system assessment
- DP system verification
- vessel inspections
- project support for tender review, evaluation, and pre/post contract award.

Vessel inspections are used to verify actual levels of compliance with the company's Safety Management System, the overall condition of the vessel and the status of the planned maintenance system onboard. Woodside Marine Assurance Specialist will conduct a risk assessment on the vessel to determine the level of assurance applied and the type of vessel inspection required.

Methods of vessel inspection may include, and are not limited to:

- Woodside Marine Vessel Inspection
- OCIMF OVID Inspection
- IMCA CMID Inspection
- Marine Warranty Survey

Upon completion of the marine assurance process, to confirm that identified concerns are addressed appropriately and conditions imposed are managed, the Woodside Marine Assurance Team will issue the vessel a statement of approval. Should a vessel not meet the requirements of the Woodside Marine Offshore Vessel Assurance Process and be rejected, there does exist an opportunity to further scrutinise the proposed vessel.

Where a vessel inspection and/or OVMSA Verification Review is not available and all reasonable efforts based on time and resource availability to complete a vessel inspection and/or OVMSA Verification Review are performed (i.e., short term vessel hire), the Marine Assurance Specialist Offshore may approve the use of an

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alternate means of inspection, known as a risk assessment.

9.6.7. Risk Assessment

Woodside conducts a risk assessment of vessels where either an OVMSA Verification Review and/or vessel inspection cannot be completed. This is not a regular occurrence and is typically used when the requirements of the assurance process are unable to be met or the processes detailed are not applicable to a proposed vessel(s). The Marine Vessel Risk Assessment will be conducted by the Marine Assurance Specialist, where the vessel meets the short-term hire prerequisites.

The risk assessment is a semi-quantitative method of determining what further assurance process activity, if any, is required to assure a vessel for a particular task or role. The process compares the level of management control a vessel is subject to against the risk factors associated with the activity or role.

Several factors are assessed as part of a vessel risk assessment, including:

- Management control factors:
 - Company audit score (i.e., management system)
 - Vessel HSE incidents
 - Vessel Port State Control deficiencies
 - Instances of Port State Control vessel detainment
 - Years since previous satisfactory vessel inspection
 - Age of vessel
 - Contractors' prior experience operating for Woodside.
- Activity risk factors:
 - People health and safety risks (a function of the nature of the work and the area of operation)
 - Environmental risks (a function of environmental sensitivity, activity type and magnitude of potential environment damage (e.g., largest credible oil spill scenario))
 - Value risk (likely time and cost consequence to Woodside if the vessel becomes unusable)
 - Reputation risk
 - Exposure (i.e., exposure to risk based on duration of project)
 - Industrial relations risk.

The acceptability of the vessel or requirement for further vessel inspections or audits is based on the ratio of vessel score to activity risk. If the vessel management control is not deemed to appropriately manage activity risk, a satisfactory company audit and/or vessel inspection may be required before awarding work.

The risk assessment is valid for the period a vessel is on hire and for the defined scope of work.

9.7. Monitoring, Auditing and Management of Non-Conformance and Review

9.7.1. Monitoring Environmental Performance

Woodside and its contractors will perform a program of periodic monitoring during the petroleum activity – starting at mobilisation of each activity and continuing through the duration of each activity-to-activity completion. This information will be collected using the tools and systems outlined below, developed based on the EPOs, controls, standards and MC in this EP. The tools and systems will collect, as a minimum, the data (evidence) referred to in the MC in Sections 7 and 8.

9.7.1.1. Source-based Impacts and Risks

The tools and systems to monitor environmental performance, where relevant, will include:

- daily reports which include leading indicator compliance

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- periodic review of waste management and recycling records
- use of contractor's risk identification program that requires personnel to record and submit safety and environment risk observation cards routinely (frequency varies with contractor)
- collection of evidence of compliance with the controls detailed in the EP relevant to offshore activities by the Woodside Offshore HSE Adviser (other compliance evidence is collected onshore)
- environmental discharge reports that record volumes of planned and unplanned discharges, to ocean and atmosphere
- monitoring of progress against the Subsea and Developments/Projects function scorecard for KPIs
- internal auditing and assurance program as described in Section 9.7.3.

Throughout this activity, Woodside will continuously identify new source-based risks and impacts through the Monitoring and Auditing systems and tools described above and in Section 9.7.3.

9.7.1.2. Waste Monitoring of Decommissioned Infrastructure

All recovered Minerva subsea infrastructure will be classified in accordance with Commonwealth and Victorian hazardous waste definitions and requirements and aligned with Basel Convention and Minamata Convention. The infrastructure will be transported to an onshore waste processing and treatment facility and will be properly manifested. Waste manifests will typically include the following information:

- Manifest identification number
- Quantity (m³/Kg)
- Waste description
- Waste container(s) number and description
- Date of shipment
- Final Destination Description (e.g.: recycling, landfill, etc.)
- Transporter data and waste acceptance declaration
- Receiver data and waste acceptance declaration
- DG class and UN number (for environmentally hazardous waste / NORM)
- Special handling instructions
- Any other information required by the waste contractor.

9.7.2. Record Keeping

Record keeping will be in accordance with regulation 22(5) and 22(6) of the Environment Regulations. The collection of compliance records (against the MC) will form part of the permanent record of compliance maintained by Woodside and will form the basis for demonstrating that the EPOs and standards are met, which will be summarised in a series of routine reporting documents.

9.7.3. Auditing, Assurance, Management of Non-Conformance, and Continuous Improvement

The environmental performance of Woodside activities will be reviewed in a number of ways in order to:

- confirm that all significant environmental aspects of the activity are covered in the EP
- confirm that management measures to achieve environmental performance outcomes are being implemented, reviewed and where necessary amended
- confirm that all environmental commitments have been met
- ensure that impacts and risks will be continuously identified and reduced to ALARP and an acceptable level
- identify potential non-conformances and opportunities for continuous improvement.

Woodside conducts reviews and audits of their contractors at various stages including pre-award of contract,

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pre-activity and during activity, in accordance with Woodside PetDW HSE Management System performance. The environmental performance of contractors to Woodside involved in activities will be reviewed through the following activities including (but not limited to):

- inspections of Contractor HSE Management systems and procedures
- pre-mobilisation inspection or audit
- review of reporting documentation
- monitoring of progress
- operational auditing and assurance program
- regular review of incident, audit, inspection, observation, safety meeting and daily operations reports
- action item tracking and closeout
- end of campaign reviews.

All environmental management commitments from the EP will be documented and a description of compliance with each commitment will be maintained. Environment compliance monitoring allows continuous improvement initiatives to be developed and inform the development of future EPs.

9.8. EP Review Process

9.8.1. Management of Knowledge

Review of knowledge relevant to the existing environment is undertaken in order to identify changes relating to the understanding of the environment or legislation that supports the risk and impact assessments for EPs (in-force and in-preparation). Relevant knowledge is defined as:

- environmental science supporting the description of the existing environment
- socio-economic environment and consultation information
- environmental legislation.

The frequency and record of reviews, communication of relevant new knowledge and consideration of management of change are documented in the Woodside Environment Plan Guideline.

Under the Oil Spill Scientific Monitoring Program preparedness, an annual review and update to the environmental baseline studies database is completed and documented. Periodic location-focused environmental studies and baseline data gap analyses are completed and documented. Any subsequent studies scoped and executed as a result of such gap analysis are managed by the Environment Science Team and tracked via the Corporate Environment Baseline Database.

9.8.2. Learning and Knowledge Sharing

Learning and knowledge sharing occurs via a number of different methods including:

- event investigations
- event bulletins
- after campaign review conducted, including review of environmental incidents as relevant
- ongoing communication with vessel operators
- formal and informal industry benchmarking
- cross asset learnings
- engineering and technical authorities discipline communications and sharing.

9.8.3. Review of Impacts, Risks and Controls across the life of the EP

If activities described in this EP do not occur continuously or sequentially, before recommencing activities after a cessation period greater than 12 months, impacts, risks and controls will be reviewed.

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The process will identify or review impacts and risks associated with the newly commencing activity and will identify or review controls to ensure impacts and risks remain/are reduced to ALARP and acceptable levels. Information learned from previous activities conducted under this EP will be considered. Controls which have previously been excluded on the basis of proportionality will be reconsidered. Any required changes will be managed by the MoC process outlined below (Section 9.8.4).

9.8.4. EP Management of Change

Management of changes are managed in accordance with Woodside's Environmental Approval Requirements Australia Commonwealth Guideline. Management of changes relevant to this EP, concerning the scope of the activity description (Section 3) including:

- review of advances in technology at stages where new equipment may be selected such as vessel contracting
- changes in understanding of the environment, EPBC Act listed threatened and migratory species status, EPBC Act Part 13 statutory instruments (recovery plans, threat abatement plans, conservation advice, wildlife conservation plans) and current requirements for AMPs (Section 4)
- potential new advice from external agencies (Section 5).

Risk will be assessed in accordance with the environmental risk management methodology (Section 6) to determine the significance of any potential new environmental impacts or risks not provided for in this EP. Risk assessment outcomes are reviewed in compliance with regulation 39(2) of the Environment Regulations.

Minor changes where a review of the activity and the environmental risks and impacts of the activity do not trigger a requirement for a formal revision under regulation 39(2) of the Environment Regulations, will be considered a 'minor revision'. Minor administrative changes to this EP, where an assessment of the environmental risks and impacts is not required (e.g., document references, phone numbers, etc.), will also be considered a 'minor revision'. Minor revisions as defined above will be made to this EP using Woodside's document control process. Minor revisions will be tracked in an MoC Register to ensure visibility of cumulative risk changes, as well as enable internal EP updates/reissuing as required. This document will be made available to NOPSEMA during regulator environment inspections.

9.8.5. OPEP Management of Change

Relevant documents from the OPEP (Appendix E) will be reviewed in the following circumstances:

- implementation of improved preparedness measures
- a change in the availability of equipment stockpiles
- a change in the availability of personnel that reduces or improves preparedness and the capacity to respond
- the introduction of a new or improved technology that may be considered in a response for this activity
- to incorporate, where relevant, lessons learned from exercises or events
- if national or state response frameworks and Woodside's integration with these framework changes.

Where changes are required to the OPEP, based on the outcomes of the reviews described above, they will be assessed against Regulation 39(2) to determine if EP, including OPEP, resubmission is required. Changes with potential to influence minor or technical changes to the OPEP are tracked in management of change records, project records and incorporated during internal updates of the OPEP or the five-yearly revision.

9.9. Ongoing Consultation

Although consultation for the purpose of regulation 25 is complete, in accordance with regulation 22(15) of the Environment Regulations, the implementation strategy must provide for appropriate consultation with relevant authorities of the Commonwealth, a State or Territory and other relevant interested persons or organisations.

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Woodside proposes to undertake the engagements with relevant interested persons throughout the life of the EP. Relevant new information identified during ongoing consultation will be assessed using Management of Change Process (refer to Section 9.8.4).

Relevant persons, and those who are simply interested in the activities, can otherwise remain up to date on this activity through subscribing to the Woodside website, or by reading the publicly available version of the EP on NOPSEMA's website, where available.

Should consultation feedback be received following EP acceptance that identifies relevant new information or a measure or control that requires implementation or update to meet the intended outcome of consultation (see Section 5), Woodside will apply its EP Management of Change process (refer to Section 9.8.4).

9.10. Reporting

To meet the environmental performance outcomes and standards outlined in the EP, Woodside undertakes reporting at a number of levels as described in the following sub-sections.

9.10.1. Routine Reporting (Internal)

9.10.1.1. Daily Progress Reports and Meetings

Daily reports for activities are prepared and issued to key support personnel and stakeholders, by relevant managers responsible for the field-based activities. The report provides performance information about operational activities, health, safety, and environment, and current and planned work activities.

Meetings between key personnel are used to transfer information, discuss incidents, agree plans for future activities and develop plans and accountabilities for resolving issues.

9.10.1.2. Regular HSE Meetings

The project vessels will hold regular HSE meetings which cover all crews. During these meetings, environmental incidents will be reviewed, and awareness material presented. All personnel are required to attend the HSE meetings and attendance sheets are retained by the project vessel contractor. Daily meetings held onboard the project vessels also serve to reinforce environmental awareness during the petroleum activity.

Dedicated HSE Meetings will also be held with the offshore and Perth-based management to address targeted HSE incidents and initiatives.

9.10.2. Routine Reporting (External)

9.10.2.1. External Reporting Requirements

Routine regulatory reporting requirements for the petroleum activity are summarised in Table 9-4. The requirements include that Woodside develop and submit an annual Environmental Performance Report to NOPSEMA, with the first report submitted within 12 months of the commencement of activities covered by this EP (as per the requirements of regulation 22(7) of the Environment Regulations).

Direction 6 of General Direction 831 required Woodside to submit to NOPSEMA an annual report on the progress of the decommissioning of the Minerva field. This report must be submitted annually no later than 31 December and must be published on the Woodside website within 14 days of NOPSEMA notifying Woodside that the report is satisfactory.

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Table 9-4: Routine external reporting requirements

Report / Notification	Recipient	Frequency	Communication	Comment
Start of Activity Notifications				
DoD Start of Activity Notification	DoD	Minimum of five weeks notification prior to the commencement of activities.	Written	As requested by DoD during consultation.
AHO Start of Activity Notification	AHO	No less than four weeks notification before the commencement of activities, where practicable.	Written	As requested by AMSA and AHO during consultation.
NOPSEMA Start of Activity Notification	NOPSEMA	At least ten days before the activity commences	Written	Complete NOPSEMA's Regulation 29 Start or End of Activity Notification form prior to petroleum activity
AFMA, DAFF- Fisheries, CFA, DPIRD, SIF and relevant Commercial Fishers Start of Activity Notification	AFMA, DAFF- Fisheries, CFA, DPIRD, SIF, Relevant Commercial Fisheries	Prior to activity commencement	Written	AFMA, DAFF – Fisheries, DPIRD, WAFIC, and relevant Fishery Licence Holders that have the potential to be directly impacted by planned activities in the Operational Area
AMSA JRCC Notification	AMSA	24 to 48 hours prior to activity commencement	Written	As requested by AMSA during consultation.
End of Activity Notifications				
NOPSEMA End of Activity Notification	NOPSEMA	Within ten days of completion of the activity.	Written	Complete NOPSEMA's Regulation 29 Start or End of Activity Notification form prior to petroleum activity
EP Performance Reporting				
NOPSEMA Environmental Performance Report	NOPSEMA	Annually, with the first report submitted within 12 months of the commencement of the petroleum activity covered by this EP	Written	In accordance with the Regulation 26C of the Environment Regulations, confirmation of compliance with the Performance Outcomes, Performance Standards and Measurement Criteria of this EP. Reporting period 1 July to 30 June. Report must include sufficient information to enable NOPSEMA to determine whether or not the environmental performance outcomes and performance standards in the EP have been met.

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Report / Notification	Recipient	Frequency	Communication	Comment
NOPSEMA End-of-activity EP Performance Report	NOPSEMA	Once the petroleum activities have ended and all obligations identified in this EP have been completed.	Written	The EP will end when Woodside notify NOPSEMA that petroleum activity has ended, and all of the obligations under the EP have been completed, and NOPSEMA has accepted the notification, in accordance with Regulation 25A of the Environment Regulations.

9.10.3. General Direction 831 Reporting

To meet Direction 6 in Schedule 1 of General Direction 831, Woodside will undertake the following reporting define in Table 9-5.

To meet Direction 4 and 5, Woodside will undertake surveys of the Minerva field and surrounding environment following equipment removal activities (Section 3.8.2). Data from these surveys and other operational data collected over the life of the Minerva development, will be analysed to inform what, if anything, needs to be done to provide for the conservation and protection of natural resources in the licence area, and make good any damage to the seabed or subsoil in the licence area caused by any person engaged or concerned with the operations.

Woodside will provide a report to NOPSEMA within 12 months following completion of final decommissioning activities with their demonstration for how Woodside has provided for the conservation and protection of the natural resources and made good any damage to the seabed or subsoil in the licence areas relevant to the Minerva field development (see reporting requirements in Table 9-5).

Table 9-5: General Direction 833 Reporting Requirements

Report / Notification	Recipient	Frequency	Communication	Comment
NOPSEMA Decommissioning Annual Progress Report in accordance with NOPSEMA General Direction 831	NOPSEMA	Annually, no later than 31 December each year	Written	Submit to NOPSEMA on an annual basis, until all directions have been met, a progress report detailing planning towards and progress with undertaking the actions required by Directions 1, 2, 3, 4, and 5. The report submitted under Direction 6(a) must be to the satisfaction of NOPSEMA and submitted to NOPSEMA no later than 31 December each year. Publish the report on the registered holders' website within 14 days of obtaining NOPSEMA satisfaction under Direction 6(b)
Compliance with Direction 4 & 5 of General Direction 831	NOPSEMA	Once, within 12 months following completion of final decommissioning activities	Written	Report will include results from environmental monitoring program (Section 3.8.2). Demonstrates how Woodside has provided for the conservation and protection of the natural resources in the licence area relevant to the Minerva field development. Demonstrates how Woodside has made good any damage to the seabed or subsoil in the licence area caused by any person engaged or concerned in the operations in relation to the Minerva field development.

9.10.3.1. End of the Environment Plan

The EP will end when Woodside notify NOPSEMA that petroleum activity has ended, and all of the obligations under the EP have been completed, and NOPSEMA has accepted the notification, in accordance with regulation 46 of the Environment Regulations.

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Notification will be through completion and submission of NOPSEMA's Regulation 46 – End of Operation of Environment Plan Form.

9.10.4. Incident Reporting (Internal)

Woodside classifies non-conformances with EPOs and standards in this EP as environmental incidents. Woodside employees and contractors are required to report all environmental incidents, and these are managed as per Woodside's internal event recording, investigation and learning requirements.

An internal computerised database called First Priority is used to record and report these incidents. Details of the event, immediate action taken to control the situation, investigation outcomes and corrective actions to prevent reoccurrence are all recorded. Corrective actions are monitored using First Priority and closed out in a timely manner.

Woodside uses a severity rating for classification of environmental incidents, with the significant categories having a severity level (consequence) of 3, 4 or 5 (as detailed in Section 6). Detailed investigations are completed for all incidents classified as a 3, 4 or 5 severity (consequence) level and high potential environmental incidents.

9.10.5. Incident Reporting (External)

9.10.5.1. Reportable Incidents

A reportable environmental incident is defined in regulation 5 of the Environment Regulations as:

"...reportable incident, for an activity, means an incident relating to the activity that has caused, or has the potential to cause, moderate to significant environmental damage".

A reportable incident for the petroleum activity is:

- An uncontrolled release of hydrocarbons or environmentally hazardous chemicals of more than 80 L to the marine environment
- An incident that has caused environmental damage with a severity (consequence) level of ≥ 3 , as defined in the Woodside (PetDW) HSE Risk Matrix (refer to previous Table 6-3), or
- An incident that has the potential to cause environmental damage with a severity (consequence) level of ≥ 3 , as defined in the Woodside (PetDW) HSE Risk Matrix (refer to previous Table 6-3)

In accordance with regulations 47, 48 and 49 of the Environment Regulations, Woodside will:

- Report all reportable incidents orally to NOPSEMA, as soon as practicable, and in any case not later than 2 hours after the first occurrence of the reportable incident; or if the reportable incident was not detected at the time of the first occurrence, the time of becoming aware of the reportable incident.
- Oral notifications of a reportable incident to NOPSEMA will be via telephone: 1300 674 472.
- The oral notification must contain:
 - All material facts and circumstances concerning the reportable incident known or could be obtained by reasonable search or enquiry
 - Any action taken to avoid or mitigate any adverse environment impacts of the reportable incident
 - The corrective action that has been taken, or is proposed to be taken, to stop, control or remedy the reportable incident.
- Provide a written record of the reportable incident to NOPSEMA, as soon as practicable after making the oral notification, but within three days after the first occurrence of the reportable incident unless NOPSEMA specifies otherwise. The written report should use a format consistent with NOPSEMA's Report of an Accident, Dangerous Occurrence or Environmental Incident form FM0929.
- Within 7 days of giving a written report of a reportable incident to NOPSEMA, a copy of the same written report must be provided to the National Offshore Petroleum Titles Administrator (NOPTA), and the Department of Jobs, Skills, Industry and Regions (DJSIR).

9.10.5.2. Recordable Incidents

A recordable environmental incident is defined in regulation 5 of the Environment Regulations as:

“...recordable incident, for an activity, means a breach of an environmental performance outcome or environmental performance standard, in the environment plan that applies to the activity, that is not a reportable incident”.

In terms of the activities within the scope of this EP, a recordable incident is a breach of the performance outcome or performance standards listed in Sections 7 or 8 of this EP.

In the event of a recordable in recordable incident, Woodside will report the occurrence to NOPSEMA as soon as is practicable after the end of the calendar month in which it occurs; and in any case, not later than 15 days after the end of the calendar month. If no recordable incidents have occurred, a ‘nil incident’ report will be submitted to NOPSEMA. Written reporting to NOPSEMA of recordable incidents and ‘nil incidents’ can be via completion of NOPSEMA’s Form FM0928– Recordable Environmental Incident Monthly Report. The report will contain:

- a record of all the recordable incidents that occurred during the calendar month
- all material facts and circumstances concerning the recordable incidents that are known or can, by reasonable search or enquiry, be found out
- any action taken to avoid or mitigate any adverse environmental impacts of the recordable incidents
- the corrective action that has been taken, or is proposed to be taken, to stop, control or remedy the recordable incident
- the action that has been taken, or is proposed to be taken, to prevent a similar incident occurring in the future.

9.10.5.3. Other External Incident Reporting Requirements

In addition to the notification and reporting of environmental incidents defined under the Environment Regulations and Woodside HSE Standard, the following incident reporting requirements apply.

Commonwealth Waters

In accordance with the *Navigation Act 2012*, any oil pollution incidents in Commonwealth waters will be reported by the Vessel Master to AMSA within 2 hours via the national emergency notification contacts and a written report within 24 hours of the request by AMSA.

The national 24-hour emergency notification contact details are:

- freecall: 1800 641 792
- fax: (02) 6230 6868
- email: mdu@amsa.gov.au

Any loss or discharge to sea of harmful materials is to be reported by the Vessel Master using the prescribed Pollution Report (POLREP) form to the Rescue Coordination Centre (RCC).

Director of National Parks (DNP) should be made aware of oil/gas pollution incidences that occur within a marine park or are likely to impact on a marine park as soon as possible. Notification should be made to:

- Marine Compliance Duty Officer on 0419 293 465 (24 hours).
- The notification should include:
 - titleholder details
 - time and location of the incident (including name of marine park likely to be affected)
 - proposed response arrangements as per the Oil Pollution Emergency Plan (e.g., dispersant, containment, etc.)
 - confirmation of providing access to relevant monitoring and evaluation reports when available; and
 - contact details for the response coordinator.
- In Commonwealth Waters– All suspected or known instances of introduced aquatic pests or disease

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detected in Commonwealth waters to be reported to the Department of Agriculture, Fisheries and Forest (DAAF) immediately, via the online reporting form: <https://www.agriculture.gov.au/biosecurity-trade/pests-diseases-weeds/marine-pests>

- Any harm or mortality to EPBC Act-listed threatened marine fauna, whether attributable to the activity or not, within 7 days to the DCCEEW via email at: Email: EPBC.permits@environment.gov.au
- Any vessel strikes with cetaceans or whale sharks will be reported in the National Ship Strike Database at: <https://data.marinemammals.gov.au/report/shipstrike>

Victorian State Waters

Whilst the activity is being undertaken in Commonwealth jurisdiction, where an incident has caused, or has the potential to cause moderate to catastrophic environmental consequences within State jurisdiction.

The Vessel Master (or delegate) is responsible for reporting any oil pollution incident affecting or likely to affect State waters to the State Duty Officer (SDO) via the 24-hour reporting number 0409 858 715. The Duty Officer will then advise whether the following forms are required to be submitted:

- Marine Pollution Form (POLREP) and / or
- Marine Pollution Situation Report (SITREP)

Within 3 days of oral notification provide written notification of any environmental incident that could potentially impact on any land or water in State jurisdiction via: marine.pollution@ecodev.vic.gov.au

9.11. Emergency Preparedness and Response

9.11.1. Overview

Under regulation 22(8) of the Environment Regulations, the implementation strategy must contain an oil pollution emergency plan (OPEP) and provide for the updating of the OPEP. In accordance with regulation 22(8), the sections below detail the implementation strategy for hydrocarbon spill emergency conditions during decommissioning activities.

The section outlines the response framework in the event of a hydrocarbon spill. As part of the implementation strategy, Woodside has developed a series of spill response documents, inclusive of an activity specific OPEP (Appendix E). Specific arrangements are presented to ensure that the environmental impacts and risks of spill response activities will be continuously identified and reduced to ALARP.

9.11.2. External Emergency Response Plans

The following external plans have been used to inform the development of oil pollution emergency documentation for the proposed activity:

9.11.2.1. NatPlan – National Plan for Maritime Environmental Emergencies (NatPlan)

Sets out the national arrangements, policies and principles for the management of marine oil pollution. It defines obligations the States and various industry sectors in respect of marine oil pollution prevention, preparation, response and recovery.

9.11.2.2. AMOSPlan – Australian Industry Cooperative Spill Response Arrangements

Managed by AMOSC, it details the cooperative arrangements for response to oil spills by Australian oil and associated industries.

9.11.2.3. Victorian State Emergency Management Plan (SEMP) (2021)

The SEMP provides for an integrated, coordinated and comprehensive approach to emergency management (EM) at the state level. The EM Act 2013 requires the SEMP to contain provisions providing for the mitigation of, response to and recovery from emergencies (before, during and after), and to specify the roles and responsibilities of agencies in relation to EM.

9.11.2.4. Victorian SEMP Maritime Emergencies (non-search and rescue) Sub-Plan (MENSAR) (edition 2) (2021)

This sub-plan exists to capture and agree collaboration, co-operation and resources sharing by the relevant persons and a response to a complex maritime emergency will be a shared responsibility between the agencies. The Maritime Emergencies (Non-Search and Rescue (NSR)) Subplan of the State Emergency Management Plan (SEMP) is developed in accordance with the Emergency Management Act 2013 (External link), it also serves the purposes of being the Victorian Marine Pollution Contingency Plan in accordance with the Marine (Drug, Alcohol and Pollution Control) Act 1988 (the Act) (External link).

The sub-plan is two parts:

- Part A is the Maritime Emergencies (NSR) Sub-Plan:
 - It provides an overview of the arrangements for managing maritime emergencies in Victoria.
 - It describes the integrated approach and shared responsibility between state and commonwealth governments, agencies, businesses and communities.
 - The sub-plan refers to national agreements, plans and documents, including the National Plan.
- Part B is the Maritime Emergencies (NSR) Operational Plan and contains the operational details for preparing and planning for, responding to, and recovering from maritime emergencies.
 - The sub-plan applies to maritime emergencies (NSR) including marine pollution which results or may result in a prohibited discharge of oil, oily mixtures, undesirable or hazardous and noxious substances into state waters.

9.11.2.5. Victorian SEMP Animal, Plant, Marine and Environmental Biosecurity Sub-Plan (2021)

The Animal, Plant, Marine and Environmental Biosecurity Sub-Plan ('the Plan') provides an overview of the current arrangements for the management of biosecurity emergencies (excluding human health emergencies and non-Emergency Animal Disease wildlife emergencies) in Victoria and contains information on biosecurity mitigation, preparedness, response, relief and recovery. The Department of Jobs, Skills, Industry and Regions (DJSIR) has developed this Plan consistent with national arrangements for biosecurity emergencies and with input from a range of other emergency management agencies. The Plan refers to a range of existing plans and documents but does not duplicate the information contained in these, instead providing directions to websites or other sources where the reader can obtain further information if required.

9.11.2.6. Victorian Emergency Animal Welfare Plan (VEAWP) (Revision 2, October 2019)

The Victorian Emergency Animal Welfare Plan (the Plan) is intended to be a reference for all agencies, organisations, groups and individuals with responsibility for animal welfare during emergencies. It provides principles and policy for use in emergency planning, response and recovery phases. It defines the roles and responsibilities of agencies and organisations.

The plan has the overarching objectives of:

- Contributing to enhanced human safety and community resilience through effective planning and management of animals in emergencies; and
- Ensuring animals are better considered and protected from suffering during and immediately following emergencies.

The plan was developed following extensive consultation with emergency management and animal welfare relevant persons including the Victorian Emergency Animal Welfare Committee. It has been developed in line with the National Planning Principles established by the National Advisory Committee for Animals in Emergencies.

The plan confirms that:

- DEECA is the primary state agency for the provision of welfare support for wildlife in emergencies. <https://www.wildlife.vic.gov.au/wildlife-emergencies/wildlife-emergencies>

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9.11.2.7. Industry Joint Venture Plans

Various Plans developing general and assisted Oil Spill Response Capabilities

9.11.2.8. AMSA Australian Government Coordination Arrangements for Maritime Environmental Emergencies

Provides a framework for the coordination of Australian Governmental departments and agencies in response to a maritime environmental emergency.

9.11.3. Oil Spill Response Jurisdictional Arrangements

In the event of an oil spill, Control Agencies are assigned to respond to the various levels of spills is outlined in Table 9-6. The 'Statutory Agency' and 'Control Agency' are defined as follows:

- Jurisdictional Authority: the State or Commonwealth Agency assigned by legislation, administrative arrangements or within the relevant contingency plan, to control response activities to a maritime environmental emergency in their area of jurisdiction.
- Control Agency: is the agency with operational responsibility in accordance with the relevant contingency plan to take action to respond to an oil and/or chemical spill in the marine environment.

Table 9-6: Statutory and lead control agencies for oil spill pollution incidents

Area	Spill Source	Jurisdictional Authority	Lead Control Agency	
			Level 1	Level 2 / 3
Commonwealth Waters	Offshore Petroleum Activity	NOPSEMA	Woodside	
	Vessels	AMSA	Vessel	AMSA
State Waters	Offshore Petroleum Activity	Vic DTP	Woodside / Vic DTP (SCME)	
	Marine Pollution Oil spills in Victorian Coastal waters up to three nautical miles	Vic DTP		
	Wildlife affected by marine pollution	DEECA		
Port Waters	Vessels	Port Authority	Port Authority / Vic DTP	

Note: When a wildlife response is required in State and Commonwealth waters, the Department of Energy, Environment, and Climate Action (DEECA) will act as the lead agency and follow the relevant state-based legislation.

Section 3 of the Victorian State Maritime Emergencies (non-search and rescue) (MENSAR) Subplan Edition 2 details the arrangements for the management of maritime emergencies in State jurisdiction. These arrangements are not replicated within the EP but are applicable to an oil spill response in Victorian State jurisdiction. A summary of MENSAR Plan is provided in the section below.

Further detail on Victorian State oil pollution response and jurisdictional arrangements is presented within the Victorian Joint Industry and State Oil Pollution Responses Guidance Note V2.4 2023. These arrangements are not replicated within the EP but are applicable to an oil spill response in Victorian State jurisdiction.

9.11.4. Internal Emergency Response Plans

To support this requirement, the following documents have been adopted and implemented by Woodside.

9.11.4.1. Crisis and Emergency Management Procedure

The objective of the Crisis and Emergency Management (CEM) Procedure is to describe the CEM process requirements intended to keep the Company prepared to manage incidents and crises effectively.

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The CEM process categorises incidents into three levels, based on an assessment of the current consequences and the potential for escalation (Levels 1 to Level 3). This enables clear escalation criteria to be established, so that appropriate support and resources can be quickly applied to manage the incident.

The CEM Procedure details the organisational structure to enable effective incident control, coordination, and communication at all levels and the key accountabilities for those responsible for the oversight and implementation of the CEM process.

9.11.4.2. Crisis Management Guideline

The objective of this guideline is to provide Crisis Management Team (CMT) with the appropriate resources and guidance to effectively manage a Level 3 incident. It supports the implementation of the CEM Procedure.

9.11.4.3. Corporate Incident Management Team Guideline

The objective of this guideline is to provide the Corporate Incident Management Team (CIMT) members with the resources and guidance to manage a Level 2 or 3 incident effectively. It supports the implementation of the CEM Procedure.

9.11.4.4. Activity Specific Emergency Response Plans

Activity-specific documents to be applied by Woodside in the event of an oil pollution emergency in the Otway Basin include:

Minerva Field Decommissioning Oil Pollution Response Document Framework

The following documents form the Minerva Field Decommissioning Oil Pollution Document Framework:

- *Minerva Field Decommissioning Oil Pollution Emergency Plan (OPEP)*: Detailed framework for spill response implementation inclusive of:
 - The Net Environmental Benefit Analysis (NEBA) – The NEBA process developed by IPIECA (2017) is a pre-spill planning tool to facilitate response option selection and support the development of the overall response strategies by identifying and comparing the potential effectiveness and impacts of oil spill response strategies.
 - An environmental impact and risk evaluation for the implementation of each selected response strategy
 - An evaluation of response need based upon WCD scenarios for each suitable response strategy
 - An evaluation of response capability to implement each suitable response strategy in an effective and timely manner, including an assessment of personnel, equipment, procedures both internal and from State and National resources and oil spill response organisations (OSROs)
 - An evaluation of the immediate need (first strike) and additional resource to implement an extended response
 - An evaluation of response timings for each response strategy for source control strategies
 - Spill response logistical arrangements
 - A detailed ALARP evaluation for each response strategy to demonstrate all reasonable and practicable response capability in available to implement a timely response; and
 - Environmental Performance Outcomes (EPOs), Environmental Performance Standards (EPSs) & Measurements Criteria for response preparedness.
 - Scientific monitoring framework for environmental monitoring response to Level 2 and Level 3 offshore oil spills from petroleum activity undertaken by Woodside
 - Primary Tactical Response Plans (TRPs) for the Otway Region including Aire River – Primary TRP, Curdies inlet – Primary TRP, Gellibrand River – Primary TRP and Warrnambool – Primary TRP

9.11.5. Woodside Incident Response

9.11.5.1. Categorisation of Incidents and Emergencies

Woodside categorises incidents and emergencies in relation to response requirements as defined in Table 9-7.

Table 9-7: Woodside Classifications for Incidents and Emergencies

Incident Category	Description
Level 1	Level 1 incidents are those that can be resolved using existing resources, equipment and personnel. A Level 1 incident is contained, controlled and resolved by site/regionally based teams using existing resources and functional support services.
Level 2	Level 2 incidents are characterised by a response that requires external operational support to manage the incident. It is triggered if the capabilities of the tactical level response are exceeded. This support is provided to the activity by activating all or part of the responsible Corporate Incident Management Team (CIMT).
Level 3	A Level 3 incident or crisis is identified as a critical event that seriously threatens the organisation's people, the environment, company assets, reputation, or livelihood. At Woodside, the Crisis Management Team (CMT) manages the strategic impacts in order to respond to and recover from the threat to the company (material impacts, litigation, legal and commercial, reputation etc.). The CIMT may also be activated as required to manage the operational incident response.

9.11.5.2. Woodside Response Organisation Structure

The Woodside Crisis and Emergency Management (CEM) philosophy is based on three levels of response teams (refer to Table 9-8) which allow for a flexible response with the appropriate level of leadership and support, according to the nature of the specific incident.

Table 9-8: Woodside Response Structure – teams are progressively activated depending on the severity of an incident

Team	Role
Emergency Response Team	The ERT is responsible for physically controlling incidents in the field, where possible, and communicating known facts to the relevant IMT. The RT will depend on the facility or vessel involved in the incident.
Corporate Incident Management Team (CIMT)	The CIMT's role is to provide technical and logistical support to the ERT. It is based in Perth, Australia.
Crisis Management Team (CMT)	The role of the CMT is to provide strategic leadership and support. It is based in Australia or USA.

The following sections describe the teams listed in Table 9-8 based on the worst-case spill scenarios for the Minerva Field Decommissioning petroleum activity.

Emergency Response Team

The ERT will depend on the vessel involved in the incident. The Vessel Master will be in command and will relay immediate emergency response information in the field to Woodside IMT.

The role of the ERT is to provide local and on-scene response by implementing priority objectives and attempts to control or contain the source and make appropriate emergency notifications. The ERT reports to the IMT.

Roles and responsibilities of the Woodside mobilised ERT are illustrated in Table 9-9.

Table 9-9: ERT roles and responsibilities

Team	Role
Emergency Commander / On-Scene Commander	The Emergency Commander / On-Scene Commander has overall responsibility for management of an incident and is responsible for determining the status of the emergency. This will be the Vessel Master.
Emergency Communications Coordinator	The role of the Emergency Communications Coordinator is to provide a link between all operating responders and to assist them in controlling the incident.
Emergency Coordinator	The Emergency Coordinator provides technical support during the emergency response and communicates with the Emergency Commander / On-Scene Commander.

Corporate Incident Management Team (CIMT)

The Corporate Incident Management Team (CIMT), based in Woodside’s head office in Perth, is the onshore coordination point for a Level 2 offshore emergency. The CIMT is staffed by an appropriately skilled team available on call 24-hours a day. The purpose of the team is to coordinate rescues, minimise damage to the environment and facilities, and to liaise with external agencies.

Woodside will have an Emergency Response Plan (ERP) in place relevant to the Petroleum Activities Program. The ERP provides procedural guidance specific to the asset and location of operations to control, coordinate and respond to an emergency or incident. The ERP will contain instructions for vessel emergency, medical emergency, search and rescue, reportable incidents, incident notification, contact information and activation of the contractor’s emergency centre and Woodside Communication Centre (WCC).

The CIMT is responsible for the spill response for Level 2 spills.

Table 9-10: CIMT roles and responsibilities

Role	Responsibilities
CIMT Incident Commander	CIMT leadership is provided by a CIMT Incident Commander and Deputy Incident Commander. Accountable and responsible for the performance of the CIMT upon activation, including controlling tempo and workflow to ensure CIMT process collect and process information to support good decision making.
Human Resources Officer	Responsible for end-to-end welfare of personnel involved in the incident, whilst managing communication and information flow to and from staff, families, and related stakeholders.
Planning Section Chief	Develops current and future plans. Provides longer term options for the normalisation and recovery of incident.
Operations Section Chief	Manages operational activities that are undertaken directly to resolve the incident, including the management of all resources (people and equipment) assigned under the Operations Section.
Logistics Section Chief	Ensures the resources, facilities, services, and materials required to support the incident.
Public Information Officer	Develops strategies to manage or mitigate reputational impacts of the incident. Additional responsibilities include the deployment of communication strategies and coordinating stakeholder engagements both internally and externally.
Finance Section Chief	Assesses and manages the broader business impacts resulting from incidents (both short and long term). The Finance Section considers aspects such as commercial, marketing, insurance, legal, and financial implications.

The CIMT consists of key personnel filling a number of defined roles with a broad range of disciplines (e.g., drilling, operations, engineering, maintenance, HSE, supply, external affairs, human resources, finance), together with other support service personnel as necessary. This enables Woodside to respond to a variety of incidents. To supplement training, each CIMT member participates in desktop exercises and additional minor

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and major exercises. The training “desktop” exercises are also arranged during the weekly handover sessions, to test a range of CIMT responses including oil spill response.

The CIMT has key corporate and external communications responsibilities for:

- providing tactical and strategic direction, technical expertise and support during an incident
- informing and liaising with relevant emergency services and regulatory authorities as appropriate
- managing external communications with media, relatives, contractors, customers, etc.
- managing Human Resources and Personnel Response (formerly Relative Response) activities
- documenting all aspects of the emergency response activities and communications.

If a response to an oil spill incident requires additional support, the CIMT Leader may activate external specialist contractors including the Australian Marine Oil Spill Centre (AMOSC) (including its core group members), Oil Spill Response Limited (OSRL) and Wild Well Control Inc. (WWCI), to augment the CIMT’s capacity, and request that a Deputy/technical advisor be assigned.

In addition to the Woodside CEM Advisor, AMOSC or OSRL personnel may also be assigned to the CIMT to provide additional guidance on the Incident Command Structure (ICS) process and oil spill response strategies. Guidance and support will be available via phone/video conference.

Regulation 22(4) requires that the implementation strategy includes measures to ensure that employees and contractors have the appropriate competencies and training. Woodside has conducted a risk-based training needs analysis on positions required for effective emergency response.

Table 9-11: Minimum levels of competency for key Incident Management Team positions

Position	Minimum Competency
Corporate Incident Management Team (CIMT) Incident Commander and Deputy Incident Commander	<ul style="list-style-type: none"> ▪ IMT Fundamentals Course (internal course) or equivalent ▪ ICS 100/200 ▪ IMO3 or equivalent spill response specialist level with an oil spill response organisation (OSRO) ▪ Participation in L2 activation, exercise or skills maintenance
Operations, Planning, Logistics and Finance Sections, and other rostered members of the CIMT	<ul style="list-style-type: none"> ▪ IMT Fundamentals Course or equivalent ▪ ICS 100/200 ▪ Oil spill theory ▪ Participation in L2 activation, exercise or skills maintenance
Environment Unit Leader	<ul style="list-style-type: none"> ▪ IMT Fundamentals Course ▪ ICS 100/200 ▪ IMO2 or equivalent spill response specialist level with an OSRO ▪ Participation in L2 activation, exercise or skills maintenance
Note on competency/equivalency	
<p>In 2023 Woodside undertook a review of incident and crisis systems, processes and tools to assess whether these were fit-for purpose and has rolled out a change to the Crisis and Emergency Management training and the oil spill response training requirements for CIMT roles.</p> <p>The revised IMT Fundamentals training Program aligns with the performance requirements of the <i>PMAOMIR320 – Manage Incident Response Information</i> and <i>PMAOMOR418 - Coordinate Incident Response</i>.</p> <p>In 2023, Woodside took the decision to align its global incident command arrangements to the Incident Command System (ICS). As such all rostered members of the Incident Management Team are trained up to ICS 200.</p> <p>In addition to baseline incident management training, all rostered members of the CIMT undertake a level of hydrocarbon spill response training. Depending upon the role, this may take the form of IMO training or completion of Woodside’s internal oil spill training course (OSREC) which involves the completion of two online AMSA Modules (<i>Introduction to National Plan and Incident Management</i>; and <i>Introduction to Oil Spills</i>) and face-to-face training.</p>	

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Position	Minimum Competency
Woodside Learning Services (WLS) are responsible for collating and maintaining personnel training records. The HSP Dashboard reflects the competencies required for each oil spill role (IMT/operational).	

Potential Resource Needs

Potential resource requirements for all Levels of response (per 12-hour operational period) are detailed in the [Hydrocarbon Spill Preparedness \(HSP\) Competency Dashboard](#). Woodside's response arrangements can be scaled up or down dependent on the nature and 'level' of the incident.

9.11.5.3. Additional Personnel

Additional personnel, not on the CIMT would be resourced due to their specific discipline to provide support to the IMT.

- As all events would be managed by the online Kallip system, additional resources could be sourced remotely i.e., Woodside Operations in Trinidad and Tobago, Gulf of Mexico and Houston.
- AMOSC Core group are able to provide technical support as well as personnel. Around 95 personnel are available under the joint agreement.

9.11.5.4. Victoria DTP

Woodside will be required to make available an Emergency Management Liaison Officer (EMLO) to work in the Vic DTP IMT to facilitate effective communication between Vic DTP and Woodside.

9.11.6. Oil Spill Response Organisations

In line with Woodside Crisis and Emergency Management arrangements, Woodside has established formalised third-party contracts and agreements with defined performance standards/criteria for the provision of resources, services or equipment in support of emergency response activities. These resources will be activated, dispatched and deactivated prior to and during an emergency.

Woodside maintains contracts with a number of Oil Spill Response Organisations (OSROs). The main relationships are detailed in the sub-sections.

9.11.6.1. AMOSC

AMOSC is an industry funded oil spill response facility based in Geelong, Victoria. AMOSC resources include:

- AMOSC spill response equipment stored at AMOSC and at other locations
- oil company equipment based at various locations
- trained industry response ("Core Group") personnel

AMOSC form part of Woodside's First Strike and primary response strategy to a spill and will be deployed within 12 hours of notification. Only nominated Woodside personnel can request the assistance of and this is usually conducted via the CIMT. AMOSC can be placed on the levels of advice listed in **Table 9-12**. Information regarding activation and mobilisation is outlined in the OPEP.

Table 9-12: AMOSC advice levels

AMOSC Advice Level	Status	AMOSC Requirements
Level 1	Forward notice	<ul style="list-style-type: none"> Advise a potential problem. Provide or update data on oil spill. Update information on spill and advise 4-hourly.
Level 2	Standby	<ul style="list-style-type: none"> AMOSC resources may be required. Assessment of resources and destination to be made. Update information on spill and advise 2-hourly.
Level 3	Callout	<ul style="list-style-type: none"> AMOSC resources are required.

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AMOSC Advice Level	Status	AMOSC Requirements
		<ul style="list-style-type: none">Detail required resources and destination.

AMOSC maintains a core group of trained personnel from oil industry member companies around the country who are trained and regularly exercised in oil spill response operations. Access to the Core Group is via AMOSC.

The cooperative arrangements for response to oil spills by Australian oil and associated industries are brought together under the AMOSPlan. The AMOSPlan will be activated by Woodside when the response to an oil spill incident is regarded by Woodside as requiring resources beyond those of the company itself.

In the event that the oil spill response requires the call out of AMOSC's own resources, the call out request is made directly to AMOSC by the CIMT. Should the response require mutual aid from equipment owned and personnel employed by another company, the request for assistance is made directly company to company via each company's nominated Mutual Aid Contact.

In addition, Woodside will also be required to contact AMOSC to activate the Standing Agreement and the Service Contract (for the borrowing company), in the event that Woodside require equipment from another company.

9.11.6.2. Oil Spill Response Limited

Woodside is a member of the global OSRL group.

Updates on the availability of OSRL's equipment availability is provided via a weekly Equipment Stockpile Status Report from OSRL's website at <http://www.oilspillresponse.com/activate-us/equipment-stockpile-status-report>.

The Equipment Stockpile Status Report provides a quick and timely overview of the availability of OSRL's equipment stockpile globally and is especially useful in assuring OSRL's readiness. It also provides a vital overview of the resources that Woodside would be able to access in the event of a spill. Under OSRL's Service Level Agreement, the first member who initiates mobilisation of OSRL will be entitled to a maximum 50% of the stockpile, while the second member is entitled to a maximum 50% of the remaining stockpile (and so on).

In addition to the Equipment Stockpile Status Report, OSRL provides a response equipment list that provides an overview of the size, type and ancillaries required for the equipment that is available at their bases. To ensure efficient and timely response capability, OSRL also have also pre-packaged some of the equipment into loads ready for dispatch, that are suitable for general spill situations and operating environments.

The equipment list can also be found at http://www.oilspillresponse.com/files/OSRL_Equipment_List.pdf.

In addition to providing response equipment, OSRL also supply a selection of specialist staff who have the practical skill and experience to assist and support Woodside in a spill response and are trained in using the Incident Command System (ICS) structure. Response teams will comprise:

- Team Manager
- Operations Manager
- Senior technicians/ technicians

OSRL can be called upon to provide immediate technical advice and begin to mobilise personnel if required. OSRL would be called on to lead small specialist teams and/or provide supplementary labour and equipment if ongoing response is required. Any OSRL resources being mobilised from Singapore would be expected to be on the scene in Perth following notification by the CIMT in a similar timeframe to resources being mobilised from eastern Australia. Only nominated Woodside personnel may request the assistance of OSRL via the CIMT Leader.

9.11.6.3. Technical Support (Scientific Monitoring)

Woodside maintains a list of pre-approved vendors who can be called upon at short notice to provide environmental monitoring services in the event of an oil spill.

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9.11.6.4. General Support

Woodside has arrangements in place and access to providers to supply personnel as required, for example 40-50 per provider to populate the response teams. Woodside has tested these arrangements and considers that personnel for shoreline clean-up operations can be sourced to match and maintain the consequence of a worst-case spill. Woodside will aim to mobilise shoreline crews prior to the predicted arrival of hydrocarbons. These crews will focus on pre-cleaning beach areas (e.g., removing debris such as seaweed to areas above the high tide mark) and establishing staging areas to enable a more efficient response when hydrocarbons are arriving ashore.

Additional labour resource requirements above the arrangements described for a temporary contract workforce can be drawn from the significant staff resources of Woodside's global petroleum operations. Woodside has current arrangements to mobilise and deploy up to 50 shoreline clean-up operations by Week 4. Additional resources that can be brought to a response post LD1 include the Woodside Burrup response team that consists of 27 trained responders based in Karratha.

During the first strike response phase, Woodside will rely on the skilled personnel (i.e., AMOSC Core Group, OSRL) to supervise and lead any unskilled workforce. In addition, personnel from the National Response Team (NRT), Aerial Operation staff from Aerotech 1st response will be mobilised. OSRL may also supply a selection of ground staff who have the practical skills and experience to assist and support Woodside during a spill response and are trained in using the Incident Command System (ICS) structure.

Gaps in the trained personnel numbers during the sustained response phase would be filled by providing pre-mob training (1–2 days) to responders to skill up the workforce and reduce the dependency on the current trained personnel.

9.11.7. State and National Resources

In consultation with the Vic DTP, additional personnel to assist with labour intensive aspects of a response (if required) will be sourced through the State Response Team. Depending on the level of response required, sources of labour may include the local shire and DEECA.

Under the National Plan, a National Response Team (NRT), comprising experienced personnel from operator to senior spill response manager level from Commonwealth/State/NT agencies, industry, and other organisations, has been developed.

The services of the NRT will be obtained through AMSA, which has made arrangements with the respective government and industry agencies, for the release of designated personnel for oil spill response activities. These services will be activated when it is assessed that an oil spill incident exceeds the resource availability at the state level.

During a National Plan incident, the Woodside CIMT or the Marine Pollution Controller appointed by a Control Agency may submit a request to AMSA for personnel from other States/NT to become part of the Incident Management Team or the incident response team.

A request should be made initially through the Environment Protection Duty Officer via the Joint Rescue Coordination Centre on 1800 641 792 or 02 6230 6811. This request must be followed by written confirmation (email: rccaus@amsa.gov.au) within three (3) hours of the verbal request.

The following information will be provided when making such a request:

- Roles or skills required (e.g., Planning Officer, Aerial Observer)
- Number of personnel required to fill each role
- Contact name, address, and time of where personnel are to initially report
- Brief overview of the work to be undertaken.

Suitable personnel will then be selected by AMSA from the National Response Team or the National Response Support Team (NRST) unless special circumstances exist.

9.11.8. Industry Resources

Woodside is a Full Member of AMOSC and as such has access to Industry Mutual Aid Arrangement equipment and National Plan equipment held as part of the contingency plans of the Australian Oil Industry and the Australian Government. AMOSC require confirmation from mobilisation authorities to access equipment listed under the National Plan.

All National Plan, AMOSC and those industry equipment resources that are registered with AMOSC, which are potentially available for response to an incident, are listed in the Marine Oil Spill Equipment System (MOSES) database. The MOSES database is a computer database that lists the type, quantity, location, status and availability of pollution control equipment. It is also used to manage audits, maintenance and repair of AMSA-owned equipment.

Normal requests for assistance are directed to AMOSC in Geelong to coordinate, but equipment may also be accessed through the MOSES database, or AMSA – Marine Environmental Protection Services (MEPS).

9.11.9. Government Agency Notification

Woodside response teams are hierarchical in nature, and response teams and resources are progressively activated depending on the severity of an incident. Government Agencies and Industry Organisations may also be mobilised. Additional relevant persons and organisations will be identified and reassessed for notification and ongoing communications throughout the response period.

9.11.10. Industry Joint Venture Programmes

Woodside undertake Joint Venture Programmes with other operators and organisations including, but not limited to other titleholders and AMOSC. These programmes aim to develop operational guidelines, operational tests, training processes and plans to inform and prepare oil spill response strategies. The programmes also provide guidance and training around First Strike incident plans, key operational considerations, understanding of shoreline sensitivities and lists of resources required to implement response.

9.11.11. Review and Testing of the OPEP

9.11.11.1. Control and Distribution of the OPEP

The Minerva Field Decommissioning OPEP shall be controlled as described by the Woodside PetDW Document Control Procedure. This procedure describes the process of approval, issue, and withdrawal of PetDW controlled documents. The OPEP shall be issued as per the distribution list.

9.11.11.2. Review of the OPEP

The Environment Manager is responsible for assessing any changes and deciding if the changes require a resubmission of the OPEP under regulation 39 of the Environment Regulations.

9.11.12. Emergency and Spill Response Drills and Exercises

Woodside's capability to respond to incidents will be tested periodically, in accordance with the Emergency and Crisis Management Procedure. The scope, frequency and objective of these tests is described in Table 9-13. Emergency response testing is aligned to existing or developing risks associated with Woodside's operations and activities. Corporate hazards/risks outlined in the corporate risk register, respective Safety Cases or project Risk Registers, are reference points developing and scheduling emergency and crisis management exercises. External participants may be invited to attend exercises (e.g., government agencies, specialist service providers, oil spill response organisations, or industry members with which Woodside has mutual aid arrangements).

The overall objective of exercises is to test procedures, skills and the teamwork of the Emergency Response and Command Teams in their ability to respond to major accident / major environment events. After each exercise, the team holds a debriefing session, during which the exercise is reviewed. Any lessons learned or areas for improvement are identified and incorporated into revised procedures, where appropriate.

Table 9-13: Testing of response capability

Response Category	Scope	Response Testing Frequency	Response Testing Objective
Level 1 Response	Exercises are project-/ activity-specific	At least one Level 1 OPEP drill must be conducted during an activity. For campaigns with an operational duration of greater than one month this will occur within the first two weeks of commencing the activity and then at least every 6-month hire period thereafter.	Comprehensive exercises test elements of the Oil Pollution First Strike Plan. Emergency drills are scheduled to test other aspects of the Emergency Response Plan.
Level 2 Response	Exercises are project specific	Level 2 Emergency Management exercises are relevant to activities with an operational duration of one month or greater. At least one Emergency Management exercise per campaign must be conducted within the first month of commencing the activity and then at every 6-month hire period thereafter, where applicable based on duration.	Testing both the facility IMT response and/or that of the CIMT following handover of incident control.
Level 3 Response	Exercises are relevant to all Woodside assets	The number of CMT exercises conducted each year is determined by the Chief Executive Officer, in consultation with the Vice President of Security and Emergency Management.	Test Woodside’s ability to respond to and manage a crisis level incident.

9.11.13. Hydrocarbon Spill Testing of Arrangements

There are a number of arrangements which, in the event of a spill, will underpin Woodside’s ability to implement a response across its petroleum activities. In order to ensure these arrangements are adequately tested, the Capability Development Team within Security and Emergency Management ensures tests are conducted in alignment with the Hydrocarbon Spill Testing of Arrangements Schedule.

Woodside’s arrangements for spill response are common across its Australian operating assets and activities to ensure the controls are consistent. The overall objective of testing these arrangements is to ensure that Woodside maintains an ability to respond to a hydrocarbon spill, specifically to:

- Ensure relevant responders, contractors and key personnel understand and practise their assigned roles and responsibilities.
- Test response arrangements and actions to validate response plans.
- Ensure lessons learned are incorporated into Woodside’s processes and procedures and improvements are made where required.

If new response arrangements are introduced, or existing arrangements significantly amended, additional testing is undertaken accordingly. Additional activities or activity locations are not anticipated to occur; however, if they do, testing of relevant response arrangements will be undertaken as soon as practicable.

In addition to the testing of response capability described in Table 9-13, up to eight formal exercises are planned annually, across Woodside, to specifically test arrangements for responding to a hydrocarbon spill to the marine environment.

9.11.13.1. Testing of Arrangements Schedule

Woodside’s Testing of Arrangements Schedule (Figure 9-3) aligns with international good practice for spill preparedness and response management; the testing is compatible with the International Petroleum Industry Environmental Conservation Association Good Practice Guide and the Australian Institute for Disaster Resilience (AIDR) Australian Emergency Management Arrangements Handbook. If a spill occurs, enacting these arrangements will underpin Woodside’s ability to implement a response across its petroleum activities.

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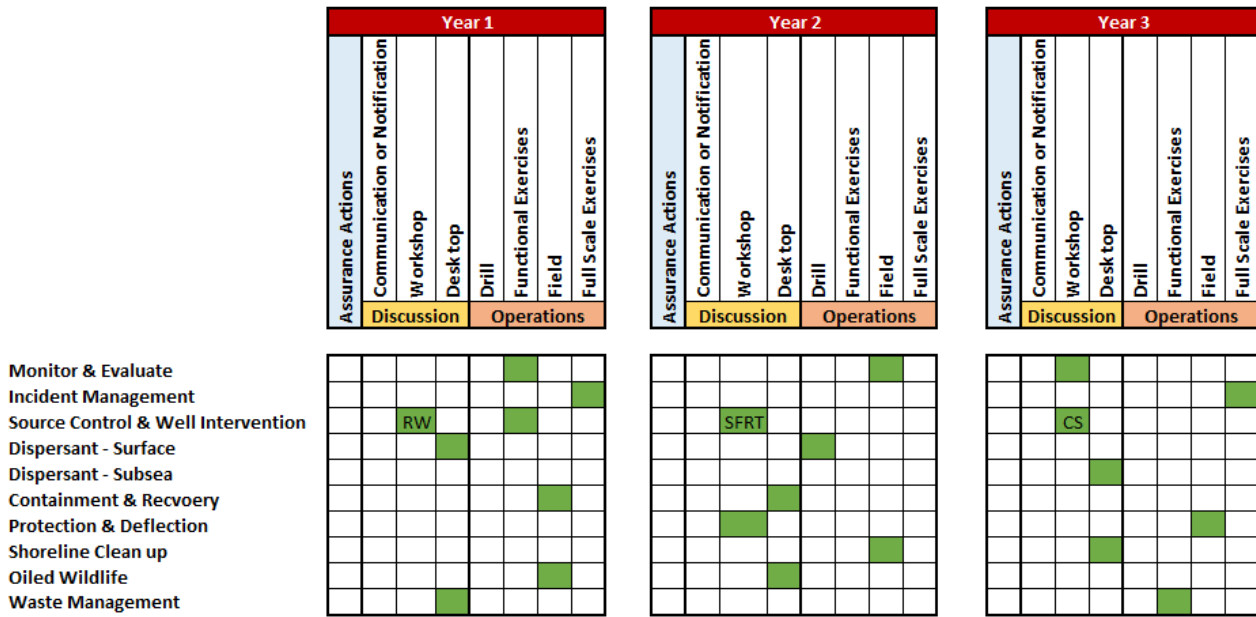


Figure 9-3: Indicative 3-yearly testing of arrangements schedule

The hydrocarbon spill arrangements shown in the rows of the schedule are tested against Woodside’s regulatory commitments. Each arrangement has a support agency/company and an area to be tested (e.g., capability, equipment and personnel). For example, an arrangement could be to test Woodside’s personnel capability for conducting scientific monitoring, or the ability of the Australian Marine Oil Spill Centre to provide response personnel and equipment.

The vertical columns relate to how hydrocarbon spill arrangements will be tested over the 3-year rolling schedule. The sub-heading for the column describes the standard method of testing likely to be undertaken (e.g., discussion exercise, desktop exercise), and the green cells indicate the arrangements that could be tested for each method.

Some arrangements may be tested across multiple exercises (e.g., critical arrangements) or via other ‘additional assurance’ methods outside the formal Testing of Arrangements Schedule that also constitute sufficient evidence of testing of arrangements (e.g., audits, no-notice drills, internal exercises, assurance drills).

9.11.14. Audits

9.11.14.1. Audits of External Oil Spill Response Organisations

A formal audit of OSROs is done by representatives of member companies annually. At the conclusion of an audit, improvement opportunities and corrective actions are formally noted, and corrective actions assigned. In some instances, changes may be required to the OPEP, but changes will only be made in accordance with the Environment Regulations.

9.11.14.2. Audits of Internal Actions

Following an emergency spill incident there may be a requirement for legal and/ or other regulatory or formal HSE incident investigations to be conducted in accordance with the Woodside (PetDW) HSE Management System.

In addition to this, it is essential that the IMT response actions are reviewed as soon as practicable after an incident. The aim of the incident review is to identify any particular lessons that should be shared across the Company, and that can be used to improve the plans or response actions in the future.

Post-spill debriefs address:

- Spill causes, if known
- Spill response

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- Speed
- Operation
- Effectiveness
- Equipment suitability
- Health and safety issues, as appropriate
- Integration of plan and procedures with other response organisations, consultants, and or agencies

9.11.15. Incident Reporting Requirements

Woodside employees and contractors are required to report all environmental incidents and non-conformance with commitments made in the EP. A computerised database is used for the recording and reporting of these incidents. Detailed investigations are completed for all actual and high potential environmental incidents. The classification, reporting, investigation and actioning of environmental incidents are undertaken in accordance with Woodside (PetDW) HSE Management System. Incident corrective actions are monitored and closed out in a timely manner. In addition to the internal notification and reporting requirements outlined above, the reporting requirements for environmental incidents are outlined in Section 9.10.5.

9.11.16. OPEP Consultation

The Woodside Hydrocarbon Spill Preparedness team shall consult with the Victoria Department of Planning and Transport (Vic DTP), Port of Portland and the Australian Maritime Safety Agency (AMSA) during the development of the First Strike Plan to ensure appropriateness of selected response techniques. Following regulatory approval of the whole EP, copies of the First Strike Plan shall be forwarded to the following key Response Agencies:

- Vic DTP
- AMSA
- Port of Portland
- AMOSC
- OSRL

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Appendix A Our Values

OUR VALUES

One team

We are inspired by our common purpose.

We challenge, respect, and back each other.

We are inclusive, value diversity, and can be ourselves.

We care

We keep each other safe.

We listen and respond with humility.

We respect the environment, operate responsibly, and care for communities.

We adapt to the world's expectations of us.

Innovate every day

We explore ideas, find creative solutions, and try new ways of doing things to provide the energy the world needs today and low-cost, lower-carbon energy for tomorrow.

Results matter

We go after opportunities and show courage by taking the right risks and learning from our mistakes.

We spend and invest as if it's our money.

We are proud of our achievements.

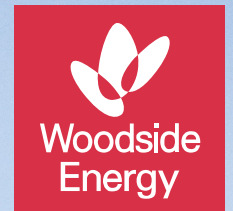
Build and maintain trust

Trust takes time and effort and will not be taken for granted.

We nurture relationships and act with integrity – doing what we say and doing it well.



PART OF
A BETTER
FUTURE



Appendix B Environment & Biodiversity Policy

OBJECTIVE

Woodside recognises the intrinsic value of nature and the importance of conserving biodiversity and ecosystem services to support the sustainable development of our society. We are committed to doing our part. We understand and embrace our responsibility to undertake activities in an environmentally sustainable way.

PRINCIPLES

Woodside commits to:

- Implementing a systematic approach to the management of the impacts and risks of our operating activities on an ongoing basis, including emissions and air quality, discharge and waste management, water management, biodiversity and protected areas.
- Applying the mitigation hierarchy principle (avoid, minimise, restore) and a continuous improvement approach to ensure we maintain compliance, improve resource use efficiency and reduce our environmental impacts.
- Embedding environmental and biodiversity management, and opportunities, in our business planning and decision making processes.
- Complying with relevant laws and regulations and applying responsible standards where laws do not exist.
- Not undertaking new exploration or development of hydrocarbons within the boundaries of natural sites on the UNESCO World Heritage List (as specified at 1 December 2022). Existing activity may continue if compatible with maintenance of the listed outstanding universal values.
- Not undertaking new exploration or development of hydrocarbons within IUCN Protected Areas (as specified at 1 December 2022) unless compatible with management plans in place for the area. Existing activity may continue if compatible with management plans in place for the area.
- Achieving net zero deforestation¹ associated with new projects that take a Final Investment Decision (FID) after 1 December 2022.
- Developing Biodiversity Action Plans for all new major projects (CAPEX >USD\$2 billion) that take a FID after 1 December 2022.
- Supporting positive biodiversity outcomes in regions and areas in which we operate.
- Setting targets and publicly reporting on our environmental and biodiversity performance.

APPLICABILITY

Responsibility for the application of this Policy rests with all Woodside employees, contractors and joint venturers engaged in activities under Woodside operational control. Woodside managers are also responsible for promotion of this Policy in non-operated joint ventures.

This Policy will be reviewed regularly and updated as required.

Approved by the Woodside Energy Group Ltd Board in December 2022.

¹ Definition of Forest: 'trees higher than 5 metres and a canopy cover of more than 10 percent on the land to be cleared'.

Appendix C Relevant Legislation

Commonwealth Legislation

Legislation or Regulation	Description	Relevance
<i>Australian Maritime Safety Authority Act 1990</i>	AMSA is a Commonwealth agency responsible for regulation of maritime safety, search and rescue, and ship sourced pollution prevention functions under the <i>Navigation Act 1912</i> (Cth), protection of the sea legislation, including the <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> (Cth) and subordinate legislation made pursuant to these Acts.	Applies to the use of any vessel associated with operations and is relevant to the activity in regard to the unplanned pollution from ships.
Australian Ballast Water Management Requirements (Commonwealth of Australia, 2020), Version 8	The Australian Ballast Water Management Requirements (Version 8) set out the obligations on vessel operators with regards to the management of ballast water and ballast tank sediment when operating within Australian seas.	Applies to all internationally sources vessels operating in Australian Waters which could have the potential for the introduction of IMS and potential ballast water exchange.
<i>Biosecurity Act 2015</i>	This Act is about managing diseases and pests that may cause harm to human, animal or plant health or the environment. The proposed amendments also strengthen Australia's ability to manage ballast water in ships. They will provide additional protection for coastal environments from the risk of marine pest incursions by fostering new ballast water treatment technologies and phasing out ballast water exchange.	Applies to all internationally sources vessels operating in Australian Waters which could have the potential for the introduction of IMS and potential ballast water exchange.
Biosecurity Regulation 2016	The Biosecurity Regulation prescribes a number of measures and obligations that are common between the <i>Biosecurity Act</i> . Pre-arrival reporting, cost recovery and the isolation and export power provisions all support business as usual activities that were available under the <i>Quarantine Act</i> and therefore represent no substantive change.	Applies to all internationally sources vessels operating in Australian Waters which could have the potential for the introduction of IMS and potential ballast water exchange.
<i>Corporations Act 2001</i>	This Act is the principal legislation regulating matters of Australian companies, such as the formation and operation of companies, duties of officers, takeovers and fundraising.	The titleholder has provided ACN details within the meaning of the Act.

Legislation or Regulation	Description	Relevance
<p><i>Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act)</i></p> <p>Environment Protection and Biodiversity Conservation Regulations 2000</p>	<p>Commonwealth Department of Sustainability, Environment, Water, Population & Communities administers Act that provides legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places—defined in the EPBC Act as matters of national environmental significance (NES). These include nationally threatened species and ecological communities, migratory species and Commonwealth marine areas. The Act regulates assessment and approval of proposed actions likely to have a significant impact on a matter of NES. The approval decision is made by a delegate of the Australian Government Environment Minister.</p> <p>Regulations provide for a wide range of detail essential for the operation of the Act, including regulations relating to management of Commonwealth reserves, information requirements for assessment processes, enforcement, granting of various permits, publication requirements and criteria that need to be met in relation to a wide variety of decision-making processes provided for under the Act.</p>	<p>This Act applies to all aspects of the activity that have the potential to impact MNES. NOPSEMA manages compliance with the relevant regulations and plans under the Act for this EP.</p> <p>Where activities have existing approvals under the Act, these will continue to apply.</p>
<p><i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i></p>	<p>Relates to controls over import and export of hazardous waste material. Permits are required to import waste into Australia.</p>	<p>Activity does not involve transboundary movement of hazardous wastes.</p>
<p><i>Navigation Act 2012</i></p>	<p>This Act establishes framework for controls on navigation, marine safety and shipping for ships in Australian waters or territories primarily proceeding on international or interstate voyages.</p>	<p>Vessel movements will be governed by marine safety regulations and Marine Orders under the Act</p>
<p>Marine Orders</p>	<p>Marine Orders are subordinate rules made pursuant to the <i>Navigation Act 1912</i> and <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> affecting the maritime industry. They are a means of implementing Australia's international maritime obligations by giving effect to international conventions in Australian law.</p>	<p>Vessel movements, safety, discharges and emissions will be governed by the Marine Orders</p>

Legislation or Regulation	Description	Relevance
Marine Order 91 – Marine Pollution Prevention – Oil	MO91 gives effect to Annex I of the International Convention for the Prevention of Pollution from Ships 1973, as amended by the Protocol of 1978 (MARPOL 73/78).	Applies to pollution prevention on vessels.
Marine Order 95 - Marine Pollution Prevention - Garbage	MO95 gives effect to Regulation 8 of Annex V (dealing with port State control on operational requirements) and prescribes matters in relation to Regulation 9 of Annex V (dealing with placards, garbage management plans and garbage record-keeping) to the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78).	Applies to operational discharges and waste management on vessels.
Marine Order 96 Marine Pollution Prevention – Sewage	MO96 sets out MARPOL requirements in relation to survey and certification requirements; how sewage should be treated or held aboard ship; and the circumstances in which discharge into the sea may be allowed.	Applies to operational discharges from vessels.
Marine Order 97 – Marine Pollution Prevention – Air Pollution	MO96 sets out MARPOL requirements in relation to air pollution.	Applies to air pollution from vessels.
<i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i>	<p>Legislation concerning Australian offshore petroleum exploration & production in Commonwealth Waters. National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is an independent safety and environmental management Authority funded by levies on industry participants and regulates matters with powers conferred directly from OPGGS Act and via Regulations concerned with:</p> <ul style="list-style-type: none"> • occupational health & safety law at facilities and offshore operations under Schedule 3 • environmental management • structural integrity of Wells under Resource management regulations. 	Applies to the activity assessed under this Environment Plan.

Legislation or Regulation	Description	Relevance
	NOPSEMA may also declare a 500 metre petroleum safety zone around wells associated with drilling operations.	
Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023	<p>Regulations administered by NOPSEMA to ensure offshore petroleum activity is carried out in a manner consistent with the principles of ecologically sustainable development and in accordance with an accepted environment plan, in particular:</p> <ul style="list-style-type: none"> • assessment of EPs, including associated OPEPs (previously oil spill contingency plans) • investigation of accidents, occurrences and circumstances with regard to deficiencies in environmental management. 	Applies to the activity assessed under this Environment Plan.
<i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i>	Act administered by AMSA, deals with the protection of the marine environment from ship-sourced pollution. The Act implements the International Convention for the Prevention of Pollution from Ships 1973 and the subsequent 1978 Protocol to the Convention (collectively MARPOL 73/78) and setting operational and construction standards for ships to prevent pollution and regulating normal operational discharges from ships. MARPOL 73/78 annexes regulate the discharge of oil (Annex I), noxious liquid substances (Annex II), the disposal from ships of sewage (Annex IV) and garbage (Annex V) and prohibit the disposal of harmful substances carried by sea in packaged forms (Annex III).	This Act applies to vessel discharges and movements associated with the activity.
<i>Underwater Cultural Heritage Act 2018</i>	The Act replaces the <i>Historic Shipwrecks Act 1976</i> with a modernised framework for protecting and managing Australia underwater culture heritage. The Act protects shipwrecks, sunken aircraft that are at least 75 years old, whether their location is known or unknown, and associated relics. It also enables the Minister to protect shipwrecks that have been sunk for less than 75 years if they are of historic significance, such as ships wrecked	Anyone who finds the remains of a vessel or aircraft, or an article associated with a vessel or aircraft, needs to notify the relevant authorities, as soon as possible but ideally no later than after one week, and to give them information about what has been found and its location.

Legislation or Regulation	Description	Relevance
	<p>during World War II. All relics associated with historic shipwrecks are protected both while associated with the shipwreck and after their removal, provided that they went down with the ship. The Act also enables the Minister to declare protected zones around historic shipwrecks. A permit is required to carry out prescribed activities, such as trawling, diving or mooring or using ships in a protected zone. The Act prohibits conduct that may interfere with protected shipwrecks and their associated relics.</p>	

International Conventions

International Convention	Description
Agreement between the Government of Australia and the Government of Japan for the Protection of Migratory Birds in Danger of Extinction and their Environment, 1974 (commonly referred to as JAMBA)	JAMBA provides for cooperation between Japan and Australia to minimise harm to major areas used by birds that migrate between the two countries. The EPBC Act gives effect to JAMBA by listing migratory birds recognised by the agreement as migratory under the EPBC Act. Migratory species are MNES.
Agreement between the Government of Australia and the Government of the People's Republic of China for the Protection of Migratory Birds and their Environment, 1986 (commonly referred to as CAMBA)	CAMBA provides for cooperation between China and Australia to minimise harm to major areas used by birds that migrate between the two countries. The EPBC Act gives effect to CAMBA by listing migratory birds recognised by the agreement as migratory under the EPBC Act. Migratory species are MNES.
Agreement between the Government of Australia and the Government of the Republic of Korea for the Protection of Migratory Birds and their Environment, 2002 (commonly referred to as ROKAMBA)	ROKAMBA provides for cooperation between the Republic of Korea and Australia to minimise harm to major areas used by birds that migrate between the two countries. The EPBC Act gives effect to ROKAMBA by listing migratory birds recognised by the agreement as migratory under the EPBC Act. Migratory species are MNES.
Convention on the Conservation of Migratory Species of Wild Animals, 1979 (Bonn Convention)	The Bonn Convention aims to conserve migratory species within their migratory ranges. The Bonn Convention provides specific protection for migratory species threatened with extinction or requiring international cooperation to conserve effectively. The EPBC Act gives effect to the Bonn Convention through listing species as migratory under Part 3 of the Act. Migratory species are MNES.
Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001	The convention prohibits the use of harmful organotins in anti-fouling paints used on ships and establishes a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems. The Commonwealth <i>Protection of the Sea (Harmful Anti-fouling Systems) Act 2006</i> and subsidiary Marine Order give effect to the Convention.
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (London Convention)	The London Convention is an agreement to control pollution of the sea by dumping. The Commonwealth <i>Environment Protection (Sea Dumping) Act 1981</i> gives effect to the London Convention.
Convention on Wetlands of International Importance (Ramsar Convention)	The Ramsar Convention provides for the conservation and sustainable use of wetlands. The EPBC Act gives effect to the Ramsar Convention by providing specific protection for wetlands recognised by the Convention under Part 3 of the EPBC Act. These wetlands are termed "wetlands of international importance" and are MNES.
International Convention for the Control and Management of Ships' Ballast Water and Sediment, 2004	The Convention aims to prevent the spread of harmful aquatic organisms from one region to another via ballast water and sediment. The Commonwealth <i>Biosecurity Act 2015</i> gives effect to the Convention.

International Convention	Description
International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978 (MARPOL 73/78)	<p>MARPOL 73/78 aims to minimise pollution of the sea from ships. All ships flagged under countries that are signatories to MARPOL 73/78 are subject to its requirements, regardless of where they sail. Member nations are responsible for vessels registered on their national ship registry. Several Annexes apply directly to offshore petroleum activities:</p> <ul style="list-style-type: none"> • MARPOL 73/78 Annex I (Prevention of pollution by oil), • MARPOL 73/78 Annex II (Control of pollution by noxious liquid substances in bulk), • MARPOL 73/78 Annex III (Prevention of pollution by harmful substances carried by sea in packaged form), • MARPOL 73/78 Annex IV (Pollution by sewage from ships), • MARPOL 73/78 Annex V (Pollution by garbage from ships), • MARPOL 73/78 Annex VI (Prevention of air pollution from ships). <p>The Commonwealth <i>Protection of the Sea (Prevention of Pollution from Ships) Act 1983</i> and subsidiary Marine Orders give effect to MARPOL 73/78.</p>
International Convention for the Safety of Life at Sea 1974 (SOLAS Convention)	<p>The SOLAS Convention sets minimum safety standards for construction, equipment and operation of merchant ships. The convention requires signatory flag states to ensure that ships flagged by them comply with these standards as a minimum. The Commonwealth <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the convention.</p>
International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW Convention)	<p>The STCW Convention sets out minimum standards for masters, officers and watch personnel on merchant vessels. The Commonwealth <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the convention.</p>
International Regulations for Preventing Collisions at Sea 1972 (COLREGS)	<p>The COLREGS outline internationally recognised navigation rules to be used by vessels at sea to avoid collisions. The regulations are published by the International Maritime Organization (IMO). The Commonwealth <i>Navigation Act 2012</i> and subsidiary Marine Orders give effect to the regulations.</p>
Minamata Convention on Mercury (Minamata Convention)	<p>The Minamata Convention on Mercury requires parties to address adverse effects of mercury to protect human health and the environment. Australia is a signatory to, and has ratified, the Convention. No specific federal legislation has been introduced to give effect to the Minamata Convention, with effect given by existing Commonwealth, state and territory legislation.</p>
The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, 1972 (Basel Convention)	<p>The Basel Convention reduces the movement of hazardous wastes (excluding radioactive wastes) between nations, particularly from developed to less developed countries. The Commonwealth <i>Hazardous Waste (Regulation of Exports and Imports) Act 1989</i> gives effect to the convention.</p>

Appendix D Existing Environment & Protected Matters Search

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1. Introduction

BHP Petroleum (Victoria) Pty Ltd (BHP) is the titleholder for the VIC/L22 petroleum title, also known as the Minerva Field. Since the merger completion on 1 June 2022, BHP Petroleum (Victoria) Pty Ltd and its parent company BHP Petroleum International Pty Ltd are owned 100% by Woodside Energy Group Ltd.

This document describes the existing environment that may be affected (EMBA) by petroleum activities undertaken within the Minerva field and includes details of the relevant values and sensitivities of that environment as required by the Commonwealth *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*.

The EMBA encompasses the environmental values and sensitivities that have the potential to be contacted by low hydrocarbon thresholds in the event of worst-case release from petroleum activities in the Otway Basin.

This document describes the environmental values and sensitivities within the operational area, and the EMBA that may be contacted by either a marine diesel oil (MDO) release from a project vessel, or a worst-case loss of well control (LOWC) event from a gas-condensate well within the Minerva Field (permit area VIC/L22).

This document is informed by a search of the EPBC Act protected matters search tool (PMST) provided by the Department of Agriculture, Water and the Environment (DAWE) in May 2022, as well as published scientific literature and studies where applicable.

2. Geographic Extent

The EMBA is presented in Figure 2-1, noting the spatial extent of the EMBA is an over-representation of a single potential worst-case spill scenario.

The spatial extent of the EMBA has been defined using stochastic hydrocarbon fate and transport modelling of the worst-case hydrocarbon spills, based on the hydrocarbon exposure values (concentrations) for two scenarios: a subsea release of condensate from a LOWC from the Minerva-4 well, and a MDO surface spill at the Minerva-1 well arising from a vessel-to-vessel or vessel-to-MODU collision.

Each scenario consisted of 200 individual oil spill simulations based upon five years of historical hydrodynamic and wind data and covering both summer and winter seasonal variations.

The oil spill modelling considered four key hydrocarbons phases that pose differing environmental and socio-economic risks: surface (floating) oil, total submerged hydrocarbons (entrained oil droplets in the water column), dissolved oil in the water column, and shoreline accumulated oil. The modelling used defined oil exposure values (concentrations) to aid interpretation of the modelling, to identify when and where areas might be contacted by oil and to inform the subsequent environmental risk evaluation and spill response planning. The oil exposure values used to define the EMBA were guided by NOPSEMA's *Environment Bulletin – Oil Spill Modelling Guideline* (NOPSEMA, 2019) and are provided in Table 2-1.

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Table 2-1: Hydrocarbon exposure values

Hydrocarbon phase	Exposure Value		
	Low	Moderate	High
Surface (floating) oil	1 g/m ²	10 g/m ²	50 g/m ²
Shoreline (accumulated) oil	10 g/m ²	100 g/m ²	1,000 g/m ²
Total submerged oil in the water column (a combination of entrained and dissolved oil components)	10 ppb	100 ppb	-
Dissolved oil in the water column	10 ppb	50 ppb	400 ppb

The LOWC spill EMBA presented in Figure 2-1, shows the combined stochastic modelling outputs for the worst-case condensate spill and marine diesel oil (MDO) spills, based on 200 individual spills for each spill scenario. By overlaying all of the individual spills onto a single figure, the stochastic modelling shows all the potential areas that could be affected in the event of a spill. While the EMBA represents the area that could be contacted in the event of a spill, a single spill event would have a much smaller spatial extent.

Description of Environment for the Minerva Field

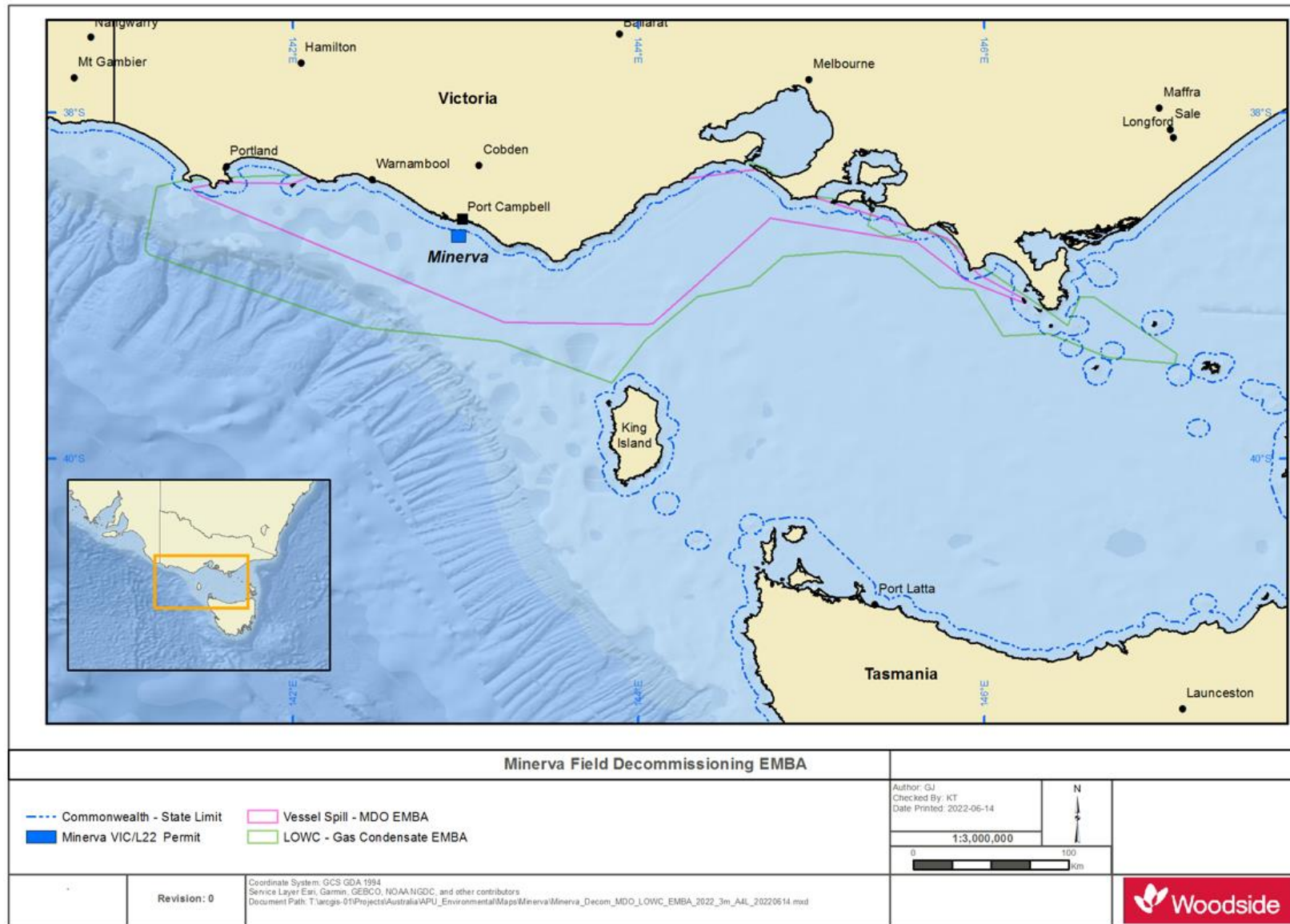


Figure 2-1: Environment that May Be Affected (EMBA) by the petroleum activity

3. South East Marine Region

Australia's offshore waters have been divided into six marine regions to facilitate their management by the Australian Government under the EPBC Act. The EMBA intersects the South East Marine Region (SEMR), which extends from the south coast of New South Wales to Kangaroo Island in South Australia and around Tasmania (DNP, 2013). The SEMR shows significant variation in seafloor features and water depth, contributing to the high level of species diversity in the region (DoE, 2015). There are areas of continental shelf, which includes Bass Strait and Otway Shelf, where rocky reefs and soft sediments support a wide range of species. The shelf break increases currents, eddies and upwelling, and the area is especially biodiverse, including species that are fished recreationally and commercially. There are seafloor canyons along the continental shelf which provide habitat for sessile invertebrates such as temperate corals (DNP, 2013).

Compared to other marine areas, Australia's South East Marine Region is relatively low in nutrients and primary productivity; however, in some locations, water bodies converge and mix to create areas of relatively high biological productivity (DNP, 2013). One of these is the Bonney Upwelling Key Ecological Feature (KEF) (Section 14.14.1.10) in south-eastern South Australia which occurs during autumn and summer. This season of higher primary productivity attracts whale species and other species (including EPBC Act-listed species) to the area to feed on the plankton swarms (krill) (DoE, 2015).

The SEMR is recognised as a major marine biogeographic region with a high diversity of species and also a large number of endemic species (DNP, 2013). There is an abundance of fish species in the region of approximately 600 species, of which 85% are thought to be endemic. Additionally, approximately 95% of molluscs, 90% of echinoderms, and 62% of macroalgae (seaweed) species are endemic to these waters (DNP, 2013).

The SEMR is further regionalised by the Integrated Marine and Coastal Regionalisation of Australia (IMCRA) version 4.0, with the Minerva field located in the Otway mesoscale region (Figure 3-1). The Otway bioregion extends from Cape Otway (Victoria) to Cape Jaffa (South Australia) and includes the western islands of Bass Strait such as King Island (NOO, 2002).

Description of Environment for the Minerva Field

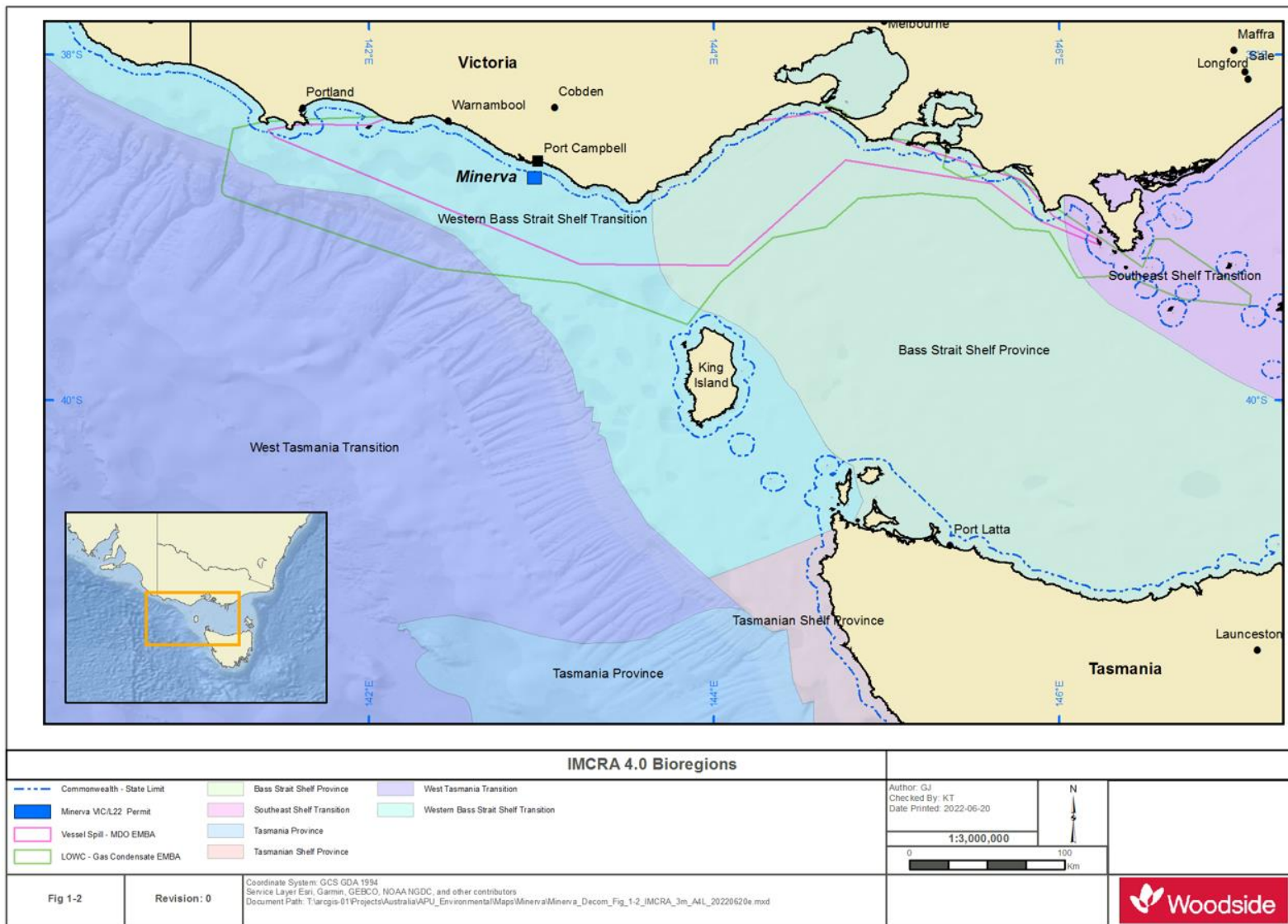


Figure 3-1: IMCRA 4.0 Bioregions in the South East Marine Region

4. Values and Sensitivities

Regulation 13(2) of OPGGS(E) Regulations (Cwth) and Sub-regulation 15(2) of the OPGGS Regulations (2021) (Vic State) states that “the environment plan must:

(2)(a) Describe the existing environment that may be affected by the activity; and

(2)(b) Include details of the particular relevant values and sensitivities (if any) of that environment”.

Regulation 13(3) of the OPGGS (E) Regulations (Cwth) states that “Without limiting paragraph 13(2)(b), particular relevant values and sensitivities may include any of the following:

13(3)(f) Any values and sensitivities that exist in, or in relation to, part or all of:

(i) A Commonwealth marine area within the meaning of that Act; or

(ii) Commonwealth land within the meaning of that Act”.

This section summarises environmental values and sensitivities, including physical, biological, socio-economic and cultural features in the marine and coastal environment that are relevant to the operational area and the EMBA. Searches for matters of national environmental significance (MNES) and other matters protected by the EPBC Act were undertaken for the operational area and the EMBA using the Protected Matters Search Tool (PMST).

4.1 Matters of National National Environmental Significance (EPBC Act)

A number of EPBC Act areas and species within the operational area and EMBA boundaries are protected under state and federal legislation.

Table 4-1 summarises the MNES areas identified as potentially occurring within the operational area and EMBA, as determined by the PMST results. Table 4-2 highlights the Australian IUCN reserve management principles for the relevant IUCN categories associated with the marine parks identified by the PMST results.

The EPBC Act protected species that may be present and affected by planned and unplanned events within the operational area and EMBA are presented in Table 4-4.

Additional information on identified MNES are provided in the following sections.

Table 4-1: Summary of protected areas in waters within the EMBA

Area Type	Title	IUCN Classification	Operational Area	MDO EMBA	LOWC EMBA	Relevant Section
World Heritage Areas	N/A	-	-	-	-	N/A
Wetlands of International Importance (RAMSAR)	Western Port	-	-	✓	✓	Section 4.1.5
	Port Phillip Bay	-	-	✓	✓	
Wetlands of National Importance	Western Port	-	-	✓	✓	Section 4.1.6
	Swan Bay and Swan Island	-	-	-	✓	
	Aire River	-	-	✓	✓	
	Yambuk Wetlands	-	-	-	✓	
	Tower Hill	-	-	✓	✓	

Description of Environment for the Minerva Field

Area Type	Title	IUCN Classification	Operational Area	MDO EMBA	LOWC EMBA	Relevant Section
	Princetown Wetlands	-	-	✓	✓	
	Lake Connewarre State Wildlife Reserve	-	-	-	✓	
	Lower Aire River Wetlands	-	-	✓	✓	
	Lower Merri River Wetlands	-	-	✓	✓	
National Heritage Places	Point Napean Defence	-	-	✓	✓	Section 4.1.3
Commonwealth Heritage Places	N/A	-	-	-	-	N/A
Threatened Ecological Communities (TEC)	Subtropical and Temperate Coastal Saltmarsh	-	-	✓	✓	Section 4.1.7
	Karst springs and associated alkaline fens of the Naracoorte Coastal Plain Bioregion	-	-	-	✓	
	Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	-	-	✓	✓	
	Natural Damp Grassland of the Victorian Coastal Plains	-	-	✓	✓	
	Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains	-	-	✓	✓	
	Giant Kelp Marine Forests of South East Australia	-	-	✓	✓	
Key Ecological Features (KEF)	West Tasmania Canyons	-	-	✓	✓	Section 4.1.10

Description of Environment for the Minerva Field

Area Type	Title	IUCN Classification	Operational Area	MDO EMBA	LOWC EMBA	Relevant Section
	Bonney Coast Upwelling	-	-	✓	✓	
Australian Marine Parks (AMP)	Apollo	Multiple Use Zone (IUCN VI)	-	✓	✓	Section 4.1.8
	Beagle	Multiple Use Zone (IUCN VI)	-	-	✓	
State Marine Parks	Bunurong Marine National Park	National Park (IUCN II)	-	✓	✓	Section 4.1.9
	Churchill Island Marine National Park	National Park (IUCN II)	-	-	✓	
	Discovery Bay Marine National Park	National Park (IUCN II)	-	-	✓	
	Point Addis Marine National Park	National Park (IUCN II)	-	✓	✓	
	Port Phillip Heads Marine National Park	National Park (IUCN II)	-	✓	✓	
	Twelve Apostles Marine National Park	National Park (IUCN II)	-	✓	✓	
	Wilsons Promontory Marine National Park	National Park (IUCN II)	-	✓	✓	
	Marengo Reefs Marine Sanctuary	Natural Monument or Feature (IUCN III)	-	✓	✓	
	The Arches Marine Sanctuary	Natural Monument or Feature (IUCN III)	-	✓	✓	
	Barwon Bluff Marine Sanctuary	Natural Monument or Feature (IUCN III)	-	-	✓	
Eagle Rock Marine Sanctuary	Natural Monument or Feature (IUCN III)	-	✓	✓		

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Area Type	Title	IUCN Classification	Operational Area	MDO EMBA	LOWC EMBA	Relevant Section
	Merri Marine Sanctuary	Natural Monument or Feature (IUCN III)	-	✓	✓	
	Mushroom Reef Marine Sanctuary	Natural Monument or Feature (IUCN III)	-	✓	✓	
	Point Danger Marine Sanctuary	Natural Monument or Feature (IUCN III)	-	-	✓	

Note: the PMST also identified several protected areas which were deemed to be irrelevant to petroleum activities in the Otway Basin due to their terrestrial location and have been excluded.

Table 4-2: Australian IUCN Reserve Management Principles

IUCN Classification	Description	IUCN Principles	Applicable Marine Parks / Sanctuaries
National Park (IUCN II)	Natural area of land and/or sea, designated to: (a) protect the ecological integrity of one or more ecosystems for this and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area, and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible.	The reserve or zone should be protected and managed to preserve its natural condition according to the following principles.	Bunurong Marine National Park Churchill Island Marine National Park Discovery Bay Marine National Park
		Natural and scenic areas of national and international significance should be protected for spiritual, scientific, educational, recreational or tourist purposes.	Point Addis Marine National Park Port Phillip Heads Marine National Park Twelve Apostles Marine National Park
		Representative examples of physiographic regions, biotic communities, genetic resources, and native species should be perpetuated in as natural a state as possible to provide ecological stability and diversity.	Wilsons Promontory Marine National Park
		Visitor use should be managed for inspirational, educational, cultural and recreational purposes at a level that will maintain the reserve or zone in a natural or near natural state.	
		Management should seek to ensure that exploitation or	

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IUCN Classification	Description	IUCN Principles	Applicable Marine Parks / Sanctuaries
		<p>occupation inconsistent with these principles does not occur.</p> <p>Respect should be maintained for the ecological, geomorphologic, sacred and aesthetic attributes for which the reserve or zone was assigned to this category.</p> <p>The needs of Indigenous people should be taken into account, including subsistence resource use, to the extent that they do not conflict with these principles.</p> <p>The aspirations of traditional owners of land within the reserve or zone, their continuing land management practices, the protection and maintenance of cultural heritage and the benefit the traditional owners derive from enterprises, established in the reserve or zone, consistent with these principles should be recognised and taken into account.</p>	
<p>Natural Monument or Feature (IUCN III)</p>	<p>Area containing one or more specific natural or natural / cultural feature which is of outstanding value because of its inherent rarity, representative or aesthetic qualities or cultural significance.</p>	<p>The reserve or zone should be protected and managed to preserve its natural or cultural features based on the following principles.</p> <p>Specific outstanding natural features should be protected or preserved in perpetuity because of their natural significance, unique or representational quality or spiritual connotations.</p> <p>Opportunities for research, education, interpretation and public appreciation should be provided to an extent consistent with these principles.</p> <p>Management should seek to ensure that exploitation or occupation inconsistent with</p>	<p>Marengo Reefs Marine Sanctuary</p> <p>The Arches Marine Sanctuary</p> <p>Barwon Bluff Marine Sanctuary</p> <p>Eagle Rock Marine Sanctuary</p> <p>Merri Marine Sanctuary</p> <p>Mushroom Reef Marine Sanctuary</p> <p>Point Danger Marine Sanctuary</p>

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IUCN Classification	Description	IUCN Principles	Applicable Marine Parks / Sanctuaries
		these principles does not occur.	
		People with rights or interests in the reserve or zone should be entitled to benefits derived from activities in the reserve or zone that are consistent with these principles.	
Multiple Use Zone (IUCN VI)	Area containing predominantly unmodified natural systems, managed to ensure long-term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs.	The reserve or zone should be managed mainly for the sustainable use of natural ecosystems based on the following principles.	Apollo AMP Beagle AMP
		The biological diversity and other natural values of the reserve or zone should be protected and maintained in the long-term.	
		Management practices should be applied to ensure ecologically sustainable use of the reserve or zone.	
		Management of the reserve or zone should contribute to regional and national development to the extent that this is consistent with these principles.	

Source: Environment Australia, 2002

4.1.1 Commonwealth and International Marine Areas

The operational area and EMBA are within the Australia's exclusive economic zone (EEZ) and Territorial Sea which is a Commonwealth Marine Area, and the wider EMBA also includes the extended continental shelf to Indonesian EEZ. The Commonwealth marine area is any part of the sea, including the waters, seabed, and airspace, within Australia's EEZ and/or over the continental shelf of Australia, that is not State or Northern Territory waters. The Australian Commonwealth marine area stretches from 3 to 200 nautical miles (nmi) from the coast. Similarly Indonesian territorial waters extend 12 nmi from coastline.

4.1.2 World Heritage Properties

World Heritage Properties represent the best examples of the world's cultural and natural heritage. There are no World Heritage Properties within the operational area or EMBA.

Note: heritage properties that are terrestrial and not linked to the shoreline EMBA, have been excluded as they are not relevant to consideration of potential affects from marine hydrocarbon spills.

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4.1.3 National Heritage Places

National Heritage Places are natural, historic and Indigenous places of outstanding significance to the nation. The Point Nepean National Heritage Property is located along the Victorian coastline which intersects the EMBA. Point Nepean is the site of the oldest, surviving, purpose-built, barracks-style, quarantine accommodation buildings in Australia, as well as fortifications demonstrating the primary importance of coastal defence to the Australian colonies. As an island-nation, quarantine has played an important part in controlling the impact of ship-borne diseases on Australia from the early 1800s (DAWE, 2006). Point Nepean is an historic landscape, which features a range of values relating to both Victorian and national quarantine processes from the 1850s and to the history of coastal defence from the 1870s (DAWE, 2006).

Point Nepean is recognised for its broad historic landscape, featuring a considerable array of historic values relating to national quarantine and defence (DAWE, 2006). The historic fabric at Point Nepean includes mid-nineteenth century archaeological remains and over one hundred year's evidence of quarantine processes and defensive fortifications, which contribute to a richly layered historic cultural landscape (DAWE, 2006).

4.1.4 Commonwealth Heritage Places

The Commonwealth Heritage list is a list of the historic, cultural and natural heritage places on Commonwealth land, in Commonwealth waters, or owned or managed by the Commonwealth Government. These include places connected to defence, maritime safety, communications, customs and other government activities that also reflect Australia's development as a nation. No Commonwealth Heritage Places exist within the operational area or EMBA.

Heritage places that are terrestrial and not linked to the shoreline, but occur in the EPBC Act Protected Matters search of the EMBA, have been excluded as they are not relevant to consideration of potential effects from marine hydrocarbon spills. Refer to complete EPBC Act Protected Matters searches results.

4.1.5 Wetlands of International Importance

There are no Ramsar Wetlands that intersect the operational area. However, there are two coastal Ramsar Wetlands sites located within the EMBA: Western Port and Port Phillip Bay. Another site is located within 10 km of the EMBA, Glenelg Estuary and Discovery Bay Wetlands, but outside the extent of the EMBA. Refer to complete EPBC Act Protected Matters searches results.

Western Port

Western Port is a large bay in southern Victoria incorporating around 260 kilometres of coastline, connected to Bass Strait by a wide channel between Flinders and Phillip Island, and a narrow channel between San Remo and Phillip Island (DAWE, 2019a).

The Ramsar site has a wide variety of habitat types ranging from deep channels, seagrass flats, intertidal mudflats, extensive mangrove thickets and saltmarsh vegetation (DAWE, 2019a). The site is one of the three most important areas for waders in Victoria and supports numerous migratory species listed under international migratory bird conservation agreements (DAWE, 2019a). High numbers of eastern curlew, whimbrel, bar-tailed godwit, grey-tailed tattler, greenshank and terek sandpiper have been recorded at the site (DAWE, 2019a). Many threatened species utilise Western Port and include the fairy tern, orange-bellied parrot, swift parrot, helmeted honeyeater, little tern, and southern right whale (DAWE, 2019a).

Western Port is also recognised for a number of Indigenous cultural heritage sites and is used for commercial fishing and recreational activities (DAWE, 2019a).

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Port Phillip Bay

The Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site is located in the western portion of Port Phillip Bay, near the city of Geelong in Victoria (DAWE, 2019a). The Ramsar site is a low-lying area and a natural discharge point for the rivers in southern central Victoria (DAWE, 2019a).

The site includes freshwater lakes, estuaries, some with White Mangrove, saltmarshes, intertidal mudflats and seagrass beds (DAWE, 2019a). This Ramsar site is the sixth most important area in Australia for migratory waders and the most important in Victoria. Large numbers of bird species including Pied Oystercatchers, Banded Stilts, Red-necked Stint, Sharp-tailed Sandpiper, Fairy Tern, Australasian Shoveler, Red-necked Avocets, Blue-billed Duck, and Freckled Duck, have been recorded at the site (DAWE, 2019a). The site also provides important habitat for threatened species such as the Little Tern and, in particular, large numbers of the nationally threatened Orange-bellied Parrot who utilise Port Phillip Bay during the winter after their summer migration to Tasmania to breed (DAWE, 2019a).

4.1.6 Wetlands of National Importance

Wetlands of national importance are wetlands that are a good example in a particular area, an important habitat for native species, or that have outstanding heritage or cultural significance. The operational area does not overlap any nationally important wetlands, however, the MDO spill EMBA overlaps six wetlands of national importance with two having connectivity with the marine environment: Western Port and Aire River, and the LOWC spill EMBA overlaps nine wetlands of national importance with only three having connectivity with the marine environment: Western Port, Swan Bay and Swan Island, and Aire River. These wetlands have been described below.

Wetlands that are not linked to the shoreline, but occur in the EPBC Act Protected Matters search of the EMBAs, have been excluded from the descriptions below as they are not relevant to consideration of potential affects from marine hydrocarbon spills. Refer to complete EPBC Act Protected Matters searches results.

Western Port

See Section 4.1.5 for details on Western Port.

Swan Bay and Swan Island

Swan Bay is a shallow marine embayment partly enclosed by spits and barrier islands such as Swan Island. It is generally less than two metres in depth, with 700 - 1000 hectares (ha) of mudflats exposed at low tide, and has extensive seagrass beds (DAWE, 2019b).

The area is a high value wetland for its ecological, recreational and educational features. With an unusual shallow embayment and a mixture of relatively undisturbed seagrass species, it is of high value for avifauna and flora. It is very productive for birds, molluscs and fish (DAWE, 2019b).

Aire River

The Aire River is one of the largest rivers in south-western Victoria and is part of the Otway Coast catchment (DAWE, 2019b). Originating in the Otway Ranges, south-east of the township of Beech Forest, it has high water quality and low turbidity providing a high value habitat for a variety of flora and fauna species, some of which are considered threatened species (DAWE, 2019b).

The area is popular for recreational activities such as fishing, picnicking, camping and sight-seeing. There are also approximately 18 archaeological sites in the area, most of which are Aboriginal shell middens (DAWE, 2019b).

4.1.7 Threatened Ecological Communities

Threatened Ecological Communities (TECs) provide wildlife corridors and / or habitat refuges for many plant and animal species, and listing a TEC provides a form of landscape or systems-level conservation (including for threatened species). The PMST Report did not identify any TEC within the operational area. Although several TECs were identified with a presence in the MDO and LOWC spill EMBA only three have coastal connections and include:

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- Giant kelp marine forests of South East Australia – listed as Endangered and may occur in the area,
- Subtropical and temperate coastal saltmarsh – listed as Vulnerable and likely to occur in the area, and
- Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community – listed Endangered and likely to occur in the area.

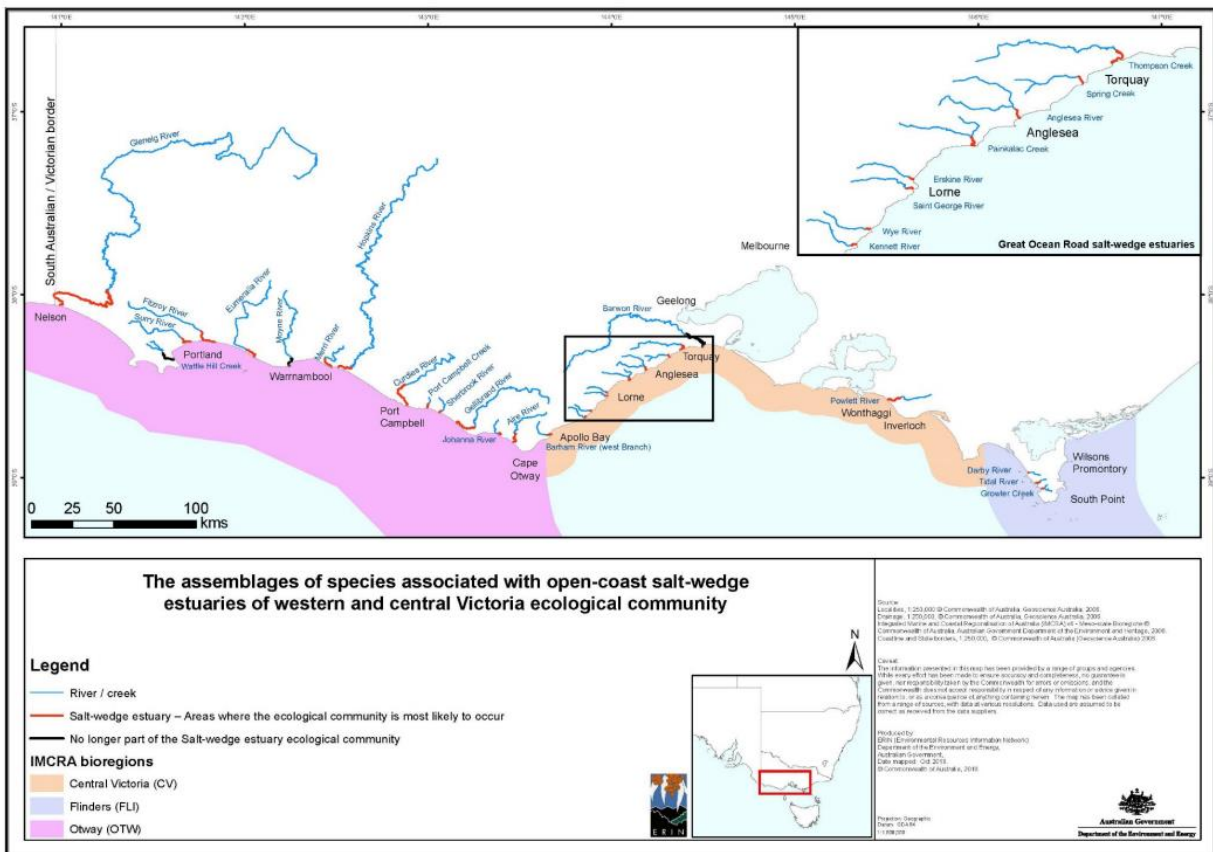
TECs that are not linked to the shoreline, but occur in the EPBC Act Protected Matters search of the EMBA, have been excluded from the description below as they are not relevant to consideration of potential affects from marine hydrocarbon spills. Refer to complete EPBC Act Protected Matters searches results.

The three TECs of relevance are described below.

Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community

This ecological community is the assemblage of native plants, animals and micro-organisms associated with the dynamic salt-wedge estuary systems that occur within the microtidal (<2 m) coastline of western and central Victoria (DoEE, 2018). The ecological community currently encompasses 25 estuaries in the region defined by the border between South Australia and Victoria and the most southerly point of Wilsons Promontory (Figure 4-1) (DoEE, 2018).

Salt-wedge estuaries are usually highly stratified, with saline bottom waters forming a ‘salt-wedge’ below the inflowing freshwater layer of riverine waters (DoEE, 2018). The wedge of heavier marine waters is introduced into the estuary by high wave energy and tides. The dynamic nature of salt-wedge estuaries has important implications for their inherent physical and chemical parameters, and ultimately for their biological structure and ecological functioning (DoEE, 2018). Some species are dependent on the dynamics of these salt-wedge estuaries for their existence, refuge, increased productivity and reproductive success. This ecological community is characterised by a core component of obligate estuarine taxa, with associated components of coastal, estuarine, brackish and freshwater taxa that may reside in the estuary for periods of time and/or utilise the estuary for specific purposes (e.g. reproduction, feeding, refuge, migration) (DoEE, 2018).



Source: DoEE, 2018

Figure 4-1: Distribution of Salt-wedge Estuaries in the SEMR

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Giant Kelp Marine Forests of South East Australia

The ecological community is defined by the species *Macrocystis pyrifera*, or Giant Kelp, which grows in the nutrient rich waters of the temperate south east of Australia (DSEWPaC, 2012). Giant Kelp are defined by the 'forest-like' structures it forms from the rocky sea floor to the sea surface (DSEWPaC, 2012). However, the kelp species itself is not protected, rather, it is communities of closed or semi-closed giant kelp canopy at or below the sea surface that are protected (DSEWPaC, 2012).

Giant Kelp is the largest and fastest growing marine plant. Their presence on a rocky substrate adds vertical structure to the water column and altering the immediate light and hydrological environment that creates significant habitat for marine fauna, thereby increasing local marine biodiversity (DSEWPaC, 2012). Species known to shelter within the kelp forests include weedy sea dragons (*Phyllopteryx taeniolatus*), six-spined leather jacket (*Mesuschenia freycineti*), brittle stars (*ophiuroids*), sea urchins, sponges, blacklip abalone (*Tosia* spp) and southern rock lobsters (*Jasus edwardsii*) (TSSC, 2012). The high primary and secondary productivity of the giant kelp forests create and provide a number of ecosystem services to the coastal environment, including habitat for juvenile life stages of commercially important fishes, improvements in local water quality, and coastal protection by acting as a buffer for strong waves (DSEWPaC, 2012).

James *et al.* (2013) undertook extensive surveys of macroalgal communities along the Otway Shelf from Warrnambool to Portland in south-west Victoria. Sites were adjacent to shore or on offshore rocky reefs covering a depth range of 0 to 36 metres water depth. These surveys did not locate giant kelp at any site but identified that other brown algae species (*Durvillaea*, *Ecklonia*, *Phyllospora*, *Cystophora*, and *Sargassum*) are prolific to around 20 m water depth. Brown algae tend to be replaced by red algae in deeper waters.

Surveys of the Arches Marine Sanctuary (Edmunds *et al.*, 2010) and Twelve Apostles Marine National Park (Holmes *et al.*, 2007 cited in Barton *et al.*, 2012) have not located Giant Kelp. The species has been recorded in Discovery Bay National Park forming part of a mixed brown algae community (Ball and Blake, 2007) (not part of the TEC), on basalt rocky reefs. An assemblage dominated by the species has been recorded from Merri Marine Sanctuary occupying a very small area (0.2 ha) of rocky reef (Barton *et al.*, 2012).

Subtropical and Temperate Coastal Saltmarsh

The Subtropical and Temperate Coastal Saltmarsh TEC consists of organisms including and associated with saltmarsh in coastal regions of sub-tropical and temperate Australia (DSEWPaC, 2013). The ecological community spans six state jurisdictions: Queensland (southern), New South Wales, Victoria, Tasmania, South Australia and Western Australia (south-western) (DSEWPaC, 2013). Occupying a relatively narrow strip along the Australian coast, in areas which have an intermittent or regular tidal influence.

The coastal saltmarsh community consists mainly of salt-tolerant vegetation including grasses, herbs, sedges, rushes and shrubs. Succulent herbs, shrubs and grasses generally dominate and vegetation is generally less than 0.5 m in height (Adam, 1990). In Australia, the vascular saltmarsh flora may include many species, but is dominated by relatively few families, with a high level of endism at the species level (Saintilan, 2009a,b).

A wide range of infaunal and epifaunal invertebrates and low and high tide visitors such as fish, birds and prawns also inhabit the TEC (DSEWPaC, 2013). It is reported as an important nursery habitat for fish and prawn species. The dominant marine residents are benthic invertebrates, including molluscs and crabs (Ross *et al.*, 2009) with insects also abundance and considered an important food source for fauna (DSEWPaC, 2013).

The coastal saltmarsh community provides extensive ecosystem services such as the filtering of surface water, coastal productivity and the provision of food and nutrients for a wide range of adjacent marine and estuarine communities and stabilising the coastline and providing a buffer from waves and storms (DSEWPaC, 2013). Most importantly, the saltmarshes are one of the most efficient ecosystems globally in sequestering carbon, due to the biogeochemical conditions in the tidal wetlands being conducive to long-term carbon retention and loss of saltmarsh habitat could release stored carbon to the atmosphere (DSEWPaC, 2013).

4.1.8 Australian Marine Parks

Australian Marine Parks (AMPs) are recognised under the EPBC Act for protecting and maintaining biological diversity and contributing to a national representative network of marine protected areas.

Commonwealth Marine Reserves Network was established in 2012 for the purpose of protecting the biological diversity and sustainable use of the marine environment. There are six management plans – one for each of

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the five marine park networks. The operational area and EMBA are within the South-east Commonwealth Marine Reserves Network.

The South-east Commonwealth Marine Reserves Network has been established to protect and maintain marine biodiversity, while allowing for the sustainable use of natural resources in some areas within the Commonwealth waters of the South-east Region and forms part of Australia's National Representative System of Marine Protected Areas (DNP, 2013). The South-east Marine Reserves Network comprises 14 Commonwealth marine reserves (DNP, 2013).

Under the various network management plans, AMPs are allocated conservation objectives (IUCN Protected Area Category) based on the Australian IUCN reserve management principles in Schedule 8 of the EPBC Regulations 2000. The relevant principles for each IUCN category identified within the EMBA is described in Table 4-2.

The operational area does not intersect any AMPs. While the MDO spill EMBA overlaps the Apollo AMP and the LOWC spill EMBA overlaps the Apollo and Beagle AMPs (Figure 4-2). Information on the AMPs is provided below.

Apollo AMP

The Apollo AMP is located in Bass Strait south of Cape Otway and Apollo Bay in western Victoria, and north-west of King Island in waters 80 m to 120 m deep on the continental shelf (DNP, 2013). The reserve covers 1,184 km² of Commonwealth ocean territory and is considered a Multiple Use Zone (IUCN VI) (DNP, 2013). This classification allows mining activities subject to approval in accordance with an Environment Plan accepted under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 by NOPSEMA.

The Apollo AMP is a relatively shallow reserve with waters less than 50 m deep near Cape Otway and up to 100 m at the Otway Depression, an undersea valley that joins the Bass Basin to the open ocean (DNP, 2013). The reserve is a part of the continental shelf ecosystem that extends from South Australia to the west of Tasmania where the region is exposed to big waves and strong tidal flows (DNP, 2013). The sea floor has many rocky reef patches interspersed with areas of sediment and, in places, has rich, benthic fauna dominated by sponges providing ideal foraging for seabirds, dolphins, seals and white sharks (DNP, 2013). Various whale species are also known to migrate through the region.

The major conservation values of the Apollo AMP include:

- Ecosystems, habitats and communities associated with the Western Bass Strait Shelf Transition and the Bass Strait Shelf Province and associated with the seafloor features: deep/hole/valley and shelf.
- Important migration area for blue, fin, sei and humpback whales.
- Important foraging area for black-browed and shy albatross, Australasian gannet, short-tailed shearwater and crested tern.
- Cultural and heritage site – wreck of the *MV City of Rayville* (DNP, 2013).

Beagle AMP

The Beagle AMP lies entirely within Bass Strait, with its north-western edge abutting Victorian waters south-east of Wilson's Promontory (DNP, 2013). It is a shallow-water reserve in an area of shallow continental shelf with depths of about 50 m to 70 m (DNP, 2013). Beagle AMP covers an area of 2,928 km² and is also considered a Multiple Use Zone (IUCN VI) where mining activities are subject to approval in accordance with an Environment Plan accepted under the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 by NOPSEMA.

The reserve includes the fauna of central Bass Strait; an area known for its high biodiversity. The reserve includes islands that are important breeding colonies for seabirds and the Australian fur seal, and waters that are important foraging areas for these species. The species-rich waters also attract top predators such as killer whales and great white sharks (DNP, 2013).

The major conservation values of the Beagle AMP include:

- Ecosystems, habitats and communities associated with the Southeast Shelf Transition and associated with the seafloor features: basin, plateau, shelf and sill.

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- Important migration and resting areas for southern right whales.
- Provides important foraging habitat for the Australian fur-seal, killer whale, great white shark, shy albatross, Australasian gannet, short-tailed shearwater, Pacific and silver gulls, crested tern, common diving petrel, fairy prion, black-faced cormorant and little penguin.
- Cultural and heritage sites including the wreck of the steamship *SS Cambridge* and the wreck of the ketch *Eliza Davies* (DNP, 2013).

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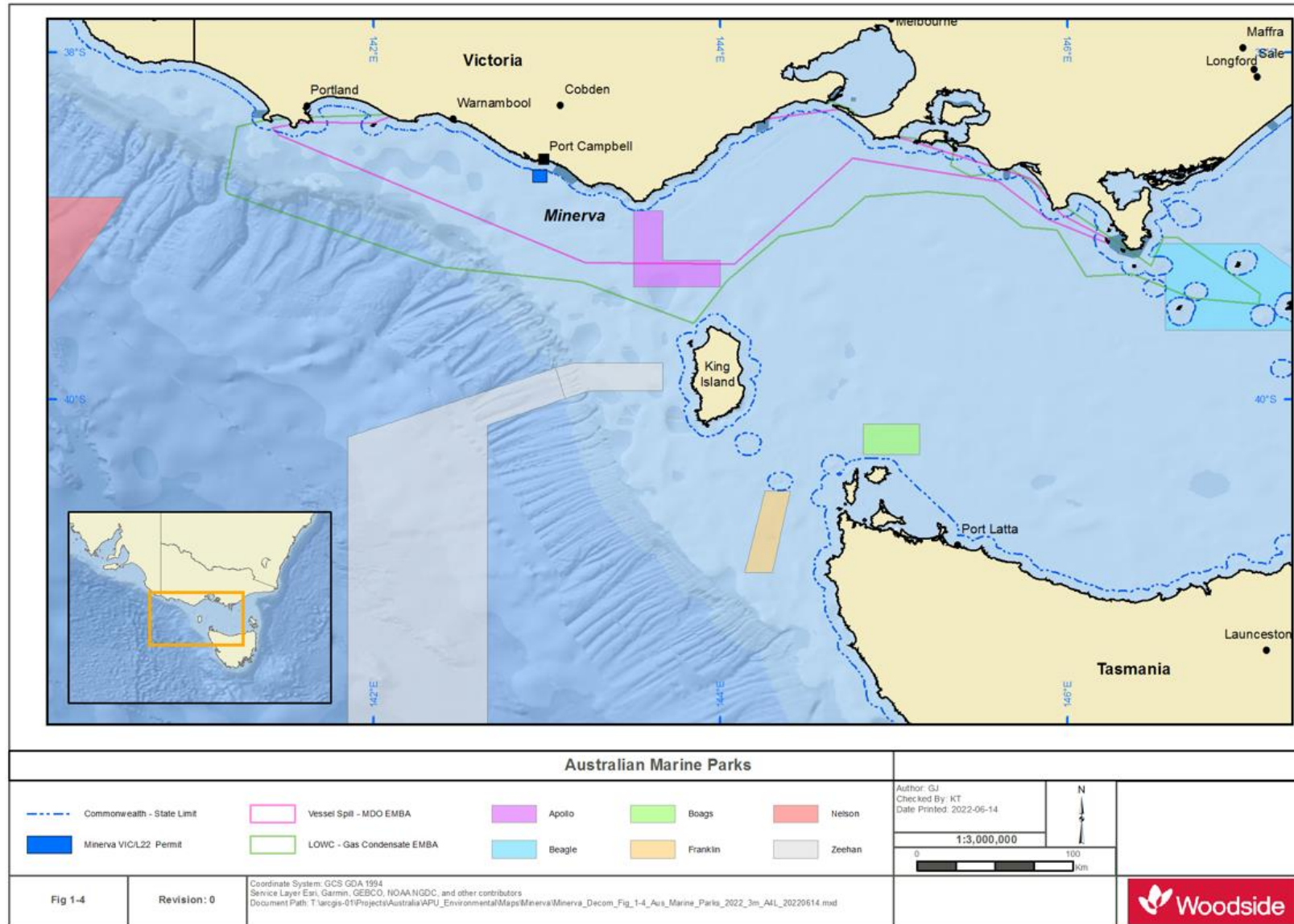


Figure 4-2: Australian Marine Parks within the Operational Area and EMBA

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4.1.9 Victorian State Marine Protected Areas

The operational area does not intercept any Victorian State Marine Protected Areas. The MDO spill EMBA overlaps ten Victorian State Marine Protected Areas and the LOWC spill EMBA overlaps 14 (Figure 4-3). These are described below.

Table 4-2 shows the relevant principles for each IUCN category for the protected state marine areas identified within the EMBA.

Terrestrial State Reserves that occur in the EPBC Act Protected Matters search of the EMBA, have been excluded from the descriptions below as they are not relevant to consideration of potential affects from marine hydrocarbon spills. Refer to complete EPBC Act Protected Matters searches results.

Bunurong Marine National Park

The Bunurong Marine National Park is classified as IUCN II (National Parks) and the Bunurong Marine Park as IUCN IV (Habitat / species management area) and both are managed through the Bunurong Marine National Park Management Plan (Parks Victoria, 2006a). The Plan identifies the key values of the Parks as:

Natural Values

- The largest continuous marine protected area in the Central Victorian Marine Bioregion.
- Extensive intertidal rock platforms and subtidal rocky reefs with a geology and form that is uncommon along the Victorian coast.
- Abundant and diverse marine flora and fauna including over 22 species of marine flora and fauna recorded, or presumed to be, at their eastern or western distributional limits.
- Highest diversity of intertidal and shallow subtidal invertebrate fauna recorded in Victoria on sandstone.
- A high proportion of the common invertebrates occurring along the Victorian coast.
- High diversity of vegetation communities, many of which are considered rare, depleted or endangered within the region.
- Important coastal habitat for several threatened species.
- Spectacular coastal scenery, featuring rugged sandstone cliffs, rocky headlands, intertidal rock platforms and sandy cove.
- Eagles Nest, a prominent rock stack, recognised as a site of national geological and geomorphological significance.
- One of the richest Mesozoic fossil areas in Victoria.

Cultural Values

- Landscape and seascape of cultural significance to Indigenous people.
- Numerous places and objects of significance to Indigenous people.
- A European history rich in diversity, including sites associated with shipping, coal mining, holidaying and living on the coast.
- Two historical shipwrecks listed on the Victorian Heritage Register.
- Opportunities for cultural values investigation in an area protected from human disturbance.

Tourism and Recreational Values

- Extensive subtidal reefs with magnificent underwater seascapes, offering numerous opportunities for diving and snorkelling.
- Highly accessible intertidal rock platforms offering opportunities for rock-pooling, marine education and interpretation.
- Spectacular coastal drive, with numerous lookouts and panoramic views of the coast and surrounding waters.

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- Coastline offering opportunities for swimming, surfing, boating, fishing and rock-pooling in a natural setting.

Churchill Island Marine National Park

Churchill Island is located south of Rhyll, on the eastern shore of Phillip Island extending from Long Point to the north point of Churchill Island (Visit Victoria, 2019a). The park is part of the Western Port RAMSAR site (Section 4.1.5) and includes numerous marine habitats such as mangroves, sheltered intertidal mudflats, seagrass beds, subtidal soft sediments and rocky intertidal shores (Visit Victoria, 2019a).

Churchill Island is an important habitat for many bird species with migratory waders roosting and feeding within the Marine National Park including the bar-tailed Godwit and the red-necked stint (Visit Victoria, 2019a). The seagrass beds are major food sources for many commercially viable species such as King George whiting, black bream and yellow-eyed mullet (Visit Victoria, 2019a).

Discovery Bay Marine National Park

The Discovery Bay Marine National Park is situated 20 km west of Portland and covering 2,770 ha and is considered the marine gateway to the Great Australian Bight (PTA, 2020). This park protects part of a large coastal basalt formation in Western Victoria and the deep water (30 – 60 m) houses low reefs forms from ancient shorelines or dunes (PTA, 2020). There is a rich diversity of marine life within this park due to the cold, nutrient rich waters of the area. The deep calcarenite reefs support diverse sponge gardens whilst the shallower reefs support the brown alga *Ecklonia radiata*. The offshore waters support a diverse array of invertebrates including Southern Fish and invertebrates such as the Southern Rock Lobster and Black Lip Abalone are supported by deep sponge gardens and shallow reefs (PTA, 2020). The waters also provide for great white shark populations and see blue whales during the summer breeding season.

The Discovery Bay National Park is protected as part of the Ngootyoong Gunditj Ngootyoong Mara South West Management Plan (Parks Victoria, 2015) which covers over 116,000 ha of public land and freehold Gunditjmaraland in south-western Victoria. The Plan (Parks Victoria, 2015) describes some key values of the Discovery Bay (which includes the National Park and the coastal reserve), namely:

- Recognised roosting, feeding and nesting area for birds such as the hooded plover.
- Important habitat for the orange-bellied parrot.
- Subtidal reefs with giant kelp forest communities (TEC).
- A foredune and dune complex that was formerly recognised on the National Estate.
- Surfing, boating and passive recreation.
- Tourism such as dune buggy tours.

Point Addis Marine National Park

Point Addis Marine National Park lies on the eastern side of the EMBA and covers 4,600 hectares. This park protects representative samples of subtidal soft sediments, subtidal rocky reef, rhodolith beds and intertidal rocky reef habitats. Providing a suitable environment for a range of invertebrates, fish, algae, birds and other wildlife. The world-famous surfing destination of Bells Beach is within Point Addis Marine National Park.

It is managed under the Management Plan for Point Addis Marine National Park, Point Danger Marine Sanctuary and Eagle Rock Marine Sanctuary (Parks Victoria, 2005) and is classified as IUCN II. The Plan identifies the following environmental, cultural and social values for the parks and sanctuaries:

Natural Values

- Sandy beaches, subtidal soft sediments, subtidal rocky reefs, rhodolith beds and intertidal reefs.
- A high diversity of algal, invertebrate and fish species.
- A high diversity of sea slugs (opisthobranchs) and other invertebrates.

Cultural Values

- Evidence of a long history of Indigenous use, including many Indigenous places and objects adjacent to the park and sanctuaries near dunes, headlands, estuaries and creeks.

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- Coastal seascapes of significance for many who live in the area or visit.

Tourism and Recreational Values

- Surf breaks, including those at Bells Beach.
- Spectacular underwater scenery for snorkelling and scuba diving.
- Intertidal areas for exploring rock pools.
- Opportunities for a range of recreational activities.
- A spectacular seascape complementing well-known visitor experiences on the Great Ocean Road.

Port Phillip Heads Marine National Park

Port Phillip Heads Marine National Park is located at the southern end of Port Phillip bay and occupies an area of 3,580 ha. The park is divided into six separate areas and protects a wide range of marine habitats, including rocky intertidal and subtidal reef, underwater gorges, sponge gardens, kelp forests, and seagrass beds (Parks Victoria, NA). These habitats support a high diversity and abundance of marine flora and fauna that provides a migratory site for wader birds (Visit Victoria, 2019b). The park also presents a range of recreational opportunities including internationally recognised dive sites (Parks Victoria, NA).

Twelve Apostles Marine National Park

The Twelve Apostles Marine National Park covers 75 km² and showcases the iconic pillars of the Twelve Apostles. Located 7 km east of Port Campbell, the marine park covers 16 km of coastline from east of Broken Head to Pebble Point and extends offshore to 5.5 km (Plummer *et al.*, 2003).

The area is representative of the Otway Bioregion and is characterised by a submarine network of canyons, caves, arches and walls housing a variety of seaweed and sponge gardens (Visit Victoria, NA). The underwater structures providing habitat for resident schools of reef fish as well as the greatest diversity of intertidal and sub-tidal invertebrates in Victoria (Visit Victoria, NA).

The park also includes large sandy sub-tidal areas consisting of predominantly fine sand with some medium to coarse sand and shell fragment (Plummer *et al.*, 2003). Benthic sampling undertaken within the park in soft sediment habitats at 10 m, 20 m and 40 m water depths identified 31, 29 and 32 species respectively based upon a sample area of 0.1 m². These species were predominantly polychaetes, crustaceans and nematodes with the mean number of individuals decreasing with water depth (Heisler & Parry, 2007). No visible macroalgae species were present within these soft sediment areas (Plummer *et al.*, 2003; Holmes *et al.*, 2007). These sandy expanses support high abundances of smaller animals such as worms, small molluscs and crustaceans; larger animals are less common.

Wilson's Promontory Marine National Park

Wilson's Promontory National Park is in South Gippsland, about 200 km south-east of Melbourne and at 15,550 ha is Victoria's largest Marine Protected Area (Parks Victoria, 2006b). It extends along 17 km of mainland coastline around the southern tip of Wilson's Promontory and is managed through the Wilson's Promontory Marine National Park and Wilson's Promontory Marine Park Management Plan May 2006 (Parks Victoria, 2006b) and is classified as IUCN II (National Parks). The Plan describes the key environmental, cultural and social values as:

Natural Values

- Granite habitats, which are unusual in Victorian marine waters, including extensive heavy reefs with smooth surfaces, boulders and rubble and low-profile reefs.
- Biological communities with distinct biogeographic patterns, including shallow subtidal reefs, deep subtidal reefs, intertidal rocky shores, sandy beaches, seagrass and subtidal soft substrates.
- Abundant and diverse marine flora and fauna, including hundreds of fish species and invertebrates such as sponges, ascidians, sea whips and bryozoans.
- 68 species of marine flora and fauna recorded, or presumed to be, at their eastern or western distributional limits.
- Important breeding sites for a significant colony of Australian fur seals.

Description of Environment for the Minerva Field

- Important habitat for several threatened shorebird species, including species listed under international migratory bird agreements.
- Outstanding landscapes, seascapes and spectacular underwater scenery.

Cultural Values

- Seascape, cultural places and objects of high traditional and cultural significance to Indigenous people.
- Indigenous cultural lore and interest maintained by the Gunai / Kurnai and Boonwurrung people.
- Important maritime and other history.
- Historic shipwrecks, many of which are listed on the Victorian Heritage Register (Parks Victoria, 2006a).
- Opportunities for cultural values investigation and learning in an area with minimal human disturbance.

Tourism and Recreational Values

- Underwater seascapes presenting numerous opportunities for diving and snorkelling.
- Opportunities for passive recreation, relaxation and reflection on a wild and remote coastline.
- Boat-based camping in a remote and unique setting.

Marengo Reefs Marine Sanctuary

The Marengo Reefs Marine Sanctuary is located 150 m offshore from Apollo Bay in Victorian State waters and covers 12 ha (Parks Victoria, 2007a). The sanctuary protects two small reefs and a wide variety of microhabitats. The two sections of reef, known as the Inner Reef and the Outer Reef, are usually exposed and are separated by a narrow channel known as 'The Gap' (Parks Victoria, 2007a). This area supports many reefs species including sea snails, tubeworms, abalone, corals, sponges and sea urchins, while deeper waters allow for dense growths of bull kelps and other seaweed. There is an abundance of soft corals, sponges, and other marine invertebrates, and over 56 species of fish have been recorded in and around the sanctuary. Seals rest on the outer island of the reef and there are two shipwrecks (the *Grange* and the *Woolamai*) in the sanctuary (Parks Victoria, 2007a).

The Marengo Reefs Marine Sanctuary Management Plan (Parks Victoria, 2007a) identifies the environmental, cultural and social values as:

Natural Values

- Subtidal soft sediments, subtidal rocky reefs and intertidal reefs.
- High diversity of algal, invertebrate and fish species.
- Australian fur seal haul out area.

Cultural Values

- Evidence of a long history of Indigenous use, including many Indigenous places and objects nearby.
- Wrecks of coastal and international trade vessels in the vicinity of the sanctuary.

Tourism and Recreational Values

- Spectacular underwater scenery for snorkelling and scuba diving.
- Intertidal areas for exploring rock pools.
- Opportunities for a range of aquatic recreational activities including seal watching.

The Arches Marine Sanctuary

The Arches Marine Sanctuary protects 45 ha of ocean directly south of Port Campbell. Approximately 5-25 m below the water surface is a labyrinth of limestone formations, rocky arches and canyons that have been formed over time by high-energy waves (Parks Victoria, 2016). The complex limestone structures provide a foundation for seaweeds and sponges to grow in turn providing additional habitat to support schools of reef fish, seals and a range of invertebrates such as lobster, abalone and sea urchins (Parks Victoria, 2016). The

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Arches Marine Sanctuary is managed in conjunction with the Twelve Apostles Marine Park under the Management Plan for Twelve Apostles Marine National Park and The Arches Marine Sanctuary.

Barwon Bluff Marine Sanctuary

Barwon Bluff Marine Sanctuary is located at Barwon Heads, approximately 100 km south-west of Melbourne and occupies 17 ha (Parks Victoria, 2007b). The Barwon Bluff Marine Sanctuary Management Plan (Parks Victoria, 2007b) identifies the environmental, cultural and social values as:

Natural Values

- Intertidal reef platforms with a high diversity of invertebrate fauna and flora.
- Subtidal reefs that support diverse and abundant flora, including kelps, other brown algae, and green and red algae.
- Calcarene and basalt reefs extending from The Bluff that are of regional geological significance.
- Intertidal habitats that support resident and migratory shorebirds, including threatened species.
- Subtidal habitats that support sedentary and mobile fish and are also used by migratory marine mammals.
- Marine habitats and species that are of scientific interest and valuable for marine education.

Cultural Values

- An important landmark and area for gathering fish and shellfish for the Wathaurong people.
- A strong historic and ongoing connection with marine education.
- Remnants from the *Earl of Charlemont*, a heritage-listed shipwreck.

Tourism and recreational Values

- Opportunities for underwater recreation, including visits to subtidal communities that are easily accessible from the shore.
- Outstanding coastal vistas, seascapes and underwater scenery.

Eagle Rock Marine Sanctuary

Eagle Rock Marine Sanctuary is approximately 40 km south-west of Geelong, and covers 17 ha of sea (Parks Victoria, 2016b). The sanctuary extends offshore for about 300 m and includes Eagle Rock and Table Rock. Within the marine park are limestone cliffs and ledges, with the intertidal and subtidal reefs providing habitat for many species such as Neptune's necklace (*Hormosira banksia*), a brown seaweed unique to Australia and New Zealand (Parks Victoria, 2016b). Formations of bull kelp, sea tulips and sponges provide habitat for wrasse, cat sharks, Port Jackson sharks, skates and rays (Parks Victoria, 2016). Several resident and migratory seabirds and shorebirds use the sanctuary, including the Caspian tern, white-bellied sea eagle and short-tailed shearwater (Parks Victoria, 2016b).

Merri Marine Sanctuary

The Merri Marine Sanctuary is on the Victorian south-west coast near Warrnambool, approximately 260 km west of Melbourne and occupies 25 ha (Parks Victoria, 2007c). Located at the mouth of the Merri River, west of Warrnambool Harbour, the sanctuary is characterised by cold water, high wave energy, a steep offshore gradient, and nutrient upwellings associated with the edge of the continental shelf. Host to a mixture of habitats, including intertidal reefs, sand, shallow reefs and rocky overhangs, these areas provide a nursery for a variety of fish species and a habitat for many algae species, hardy invertebrates and shorebirds (Parks Victoria, 2007c). Bottlenose dolphins and fur seals are regular visitors to the coastal waters (Parks Victoria, 2007c).

The Sanctuary is protected with the Merri Marine Sanctuary Management Plan (Parks Victoria, 2007c) and identifies the environmental, cultural and social values as:

- Culturally significant to indigenous communities that have a long association with the area.
- Merri River, wetlands and islands and headlands provide a variety of habitats.
- Provision of nursery for many fish species and habitat for algal species, invertebrates and shorebirds.

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Mushroom Reef Marine Sanctuary

The Mushroom Reef Marine Sanctuary is on the Bass Strait coast at Flinders near the western entrance to Western Port. The sanctuary occupies 80 ha and abuts the Mornington Peninsula National Parkland extending from the high-water mark to approximately 1 km offshore (Parks Victoria, 2007d). The sanctuary protects a system of ancient basalt platforms and reefs on the southern Mornington Peninsula coast that form a rich variety of marine microhabitats supporting diverse flora and fauna (Parks Victoria, 2007d). The beaches and intertidal area within the sanctuary also provide significant roosting, feeding and breeding areas for migratory and threatened bird species (Parks Victoria, 2007d).

The sanctuary is protected under the Mushroom Reef Marine Sanctuary Management Plan (Parks Victoria, 2007d) which identifies the environmental, cultural and social values as:

Natural Values

- Numerous subtidal pools and boulders in the intertidal area that provide a high complexity of intertidal basalt substrates and a rich variety of micro-habitats.
- Subtidal reefs that support diverse and abundant flora including kelps, other brown algae, and green and red algae.
- Sandy bottoms habitats that support large beds of *Amphibolis* seagrass and patches of green algae.
- Diverse habitats that support sedentary and migratory fish species.
- A range of reef habitats that support invertebrates including gorgonian fans, seastars, anemones, ascidians, barnacles and soft corals.
- A distinctive basalt causeway that provides habitat for numerous crabs, seastars and gastropod species.
- Intertidal habitats that support resident and migratory shorebird species including threatened species.

Cultural Values

- An important landmark and area for gathering fish and shellfish for the Boonwurrung people.

Tourism and Recreational Values

- Excellent opportunities for underwater recreation activities such as diving and snorkelling among accessible subtidal reefs.

Point Danger Marine Sanctuary

Point Danger Marine Sanctuary is located 20 km south-west of Geelong, close to the township of Torquay and occupies 25 ha of marine environment. It extends from the high-water mark at Point Danger offshore for approximately 600 m east and 400 m south, encompassing an offshore rock platform. It is managed in conjunction with Point Addis Marine National Park and Eagle Rock Marine Sanctuary (Parks Australia, 2005).

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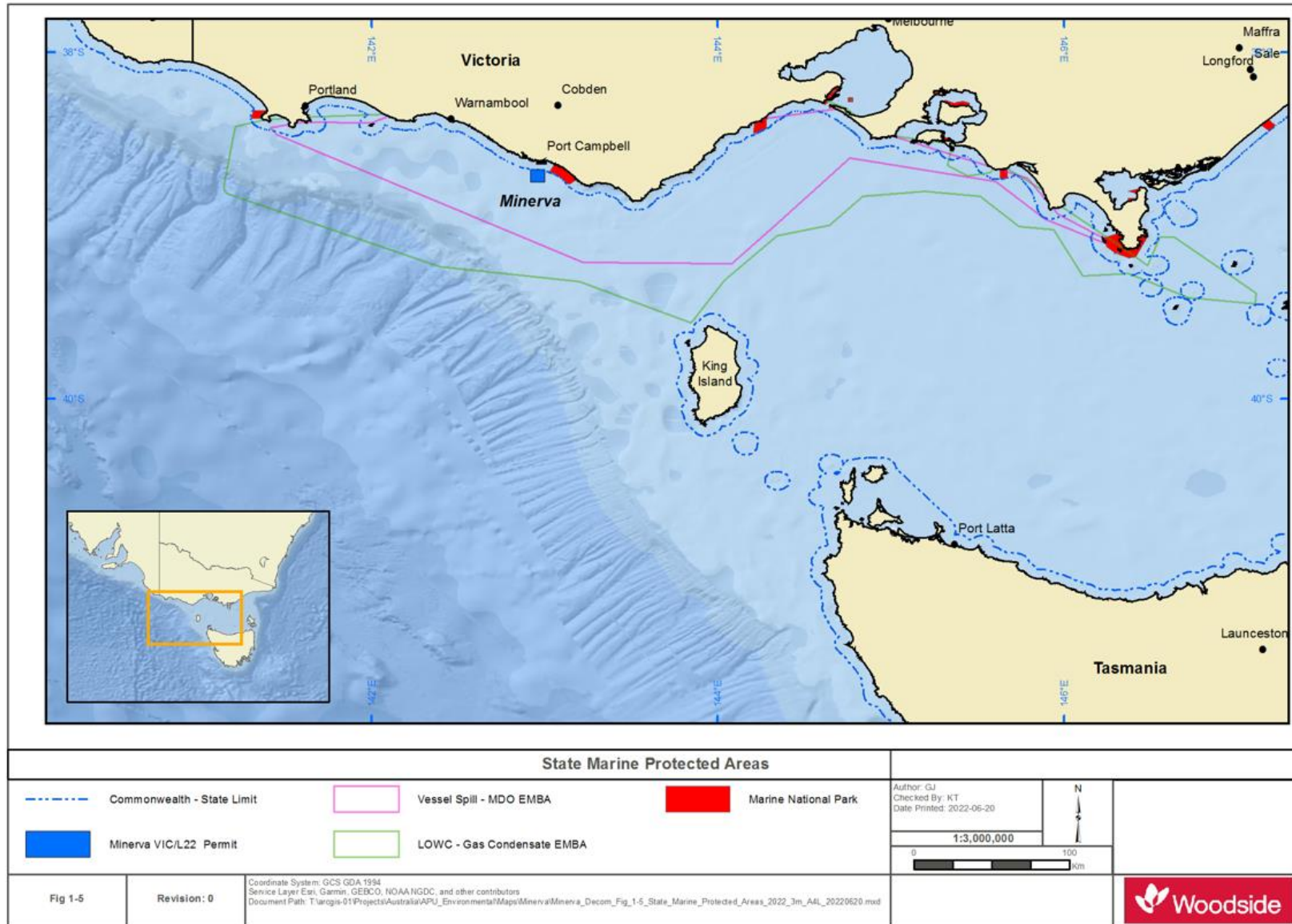


Figure 4-3: State marine management areas within the Operational Area and EMBA

Description of Environment for the Minerva Field

4.1.10 Key Ecological Features

Key Ecological Features (KEFs) are elements of the Commonwealth marine environment that based on current scientific understanding, are considered to be of regional importance for either the region's biodiversity or ecosystem function and integrity.

The PMST Report indicates that the EMBA's overlap two KEFs: the West Tasmania Canyons and the Bonney Coast Upwelling (Figure 4-4). The operational area does not overlap any KEFs. Information on the relevant KEFs has been extracted from the DAWE (2022) Species Profile and Threats Database and is summarised below.

Bonney Coast Upwelling

The Bonney Coast Upwelling KEF is one of the largest and most predictable upwellings in south-eastern Australia and is recognised for the high productivity and aggregations of marine life (DAWE, 2022). Located on the continental shelf between Cape Jaffa, South Australia and Portland (Figure 4-4), the KEF is an annual phenomenon that generally starts in the eastern part of the Great Australian Bight in November / December and spreads eastwards to the Otway Basin around February, declining in April (Gill *et al.*, 2011).

The upwelling occurs via Ekman dynamics, where the ocean surface experiences a steady wind stress resulting in a net transport of water at right angles to the left of the wind direction moving ringing cool, nutrient-rich deep waters closer to the surface where there is enough sunlight for primary production to take place (Hosack and Dambacher, 2012). This phenomenon is an attractive feeding ground for several whale species, in particular Pygmy Blue Whales where the Bonney Upwelling is recognised as one of 12 known areas worldwide where blue whales are known to feed in relatively high numbers (DAWE, 2022). In addition to whales, many endangered and listed species frequent the area, possibly also relying on the abundance of krill that provide a food source to many seabirds and fish (DAWE, 2022). The high productivity of the Bonney Upwelling is then capitalised on by other higher predator species such as little penguins and Australian fur seals feeding on baitfish.

West Tasmanian Canyons

The West Tasmanian Canyons are a series of submarine canyons whose size, complexity and configuration is able to affect currents, act as sinks for rich organic sediments and debris, and can trap waters or create upwellings that result in productivity and biodiversity hotspots (DAWE, 2022). This movement therefore influences local nutrients, prey, dispersal of eggs, larvae and juveniles and benthic diversity with subsequent effects which extend up the food chain.

Situated on the relatively narrow and steep continental slope west of Tasmania (Figure 4-4), this location has the greatest density of canyons within Australian waters where 72 submarine canyons have incised a 500 km-long section of slope (Heap & Harris 2008). Sponges are concentrated near the canyon heads, with the greatest diversity between approximately 200 m and 350 m depth (DAWE, 2022). Sponges are associated with abundance of fishes and the canyons support a diversity of sponges comparable to that of seamounts (DAWE, 2022). Based upon this enhanced productivity, the West Tasmanian canyon system includes fish nurseries (blue wahoo and ocean perch), foraging seabirds (albatross and petrels), white shark and foraging blue and humpback whales.

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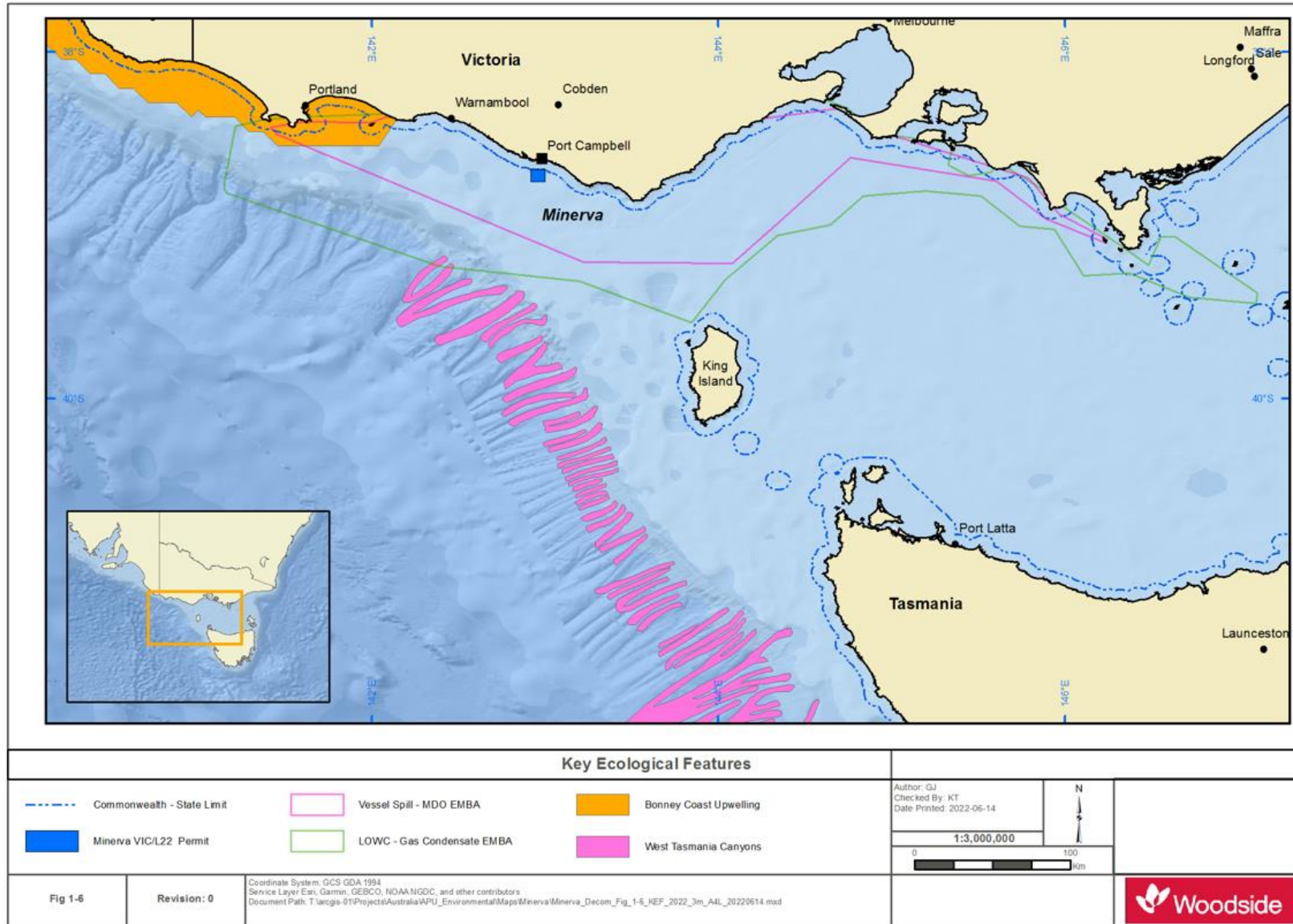


Figure 4-4: Key ecological features within the Operational Area and EMBA

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4.2 Physical Environment

4.2.1 Climate and Meteorology

The Otway bioregion is typical of a cool temperate region with cold, wet winters and warm dry summers (NOO, 2002). The area experiences a mean maximum temperature of 21.5°C (February) and a mean minimum temperature of 7.6°C (July) (Table 4-3). The annual average rainfall is 895 mm with the predominate rainfall occurring between June and August (Table 4-3).

Sub-tropical high-pressure systems dominate this region in the summer with sub-polar low-pressure systems in the winter. The low-pressure systems are accompanied by strong westerly winds and rain-bearing cold fronts that move from south-west to north-east across the region, producing strong winds from the west, north-west and south-west. Meanwhile, the day-to-day variation in weather conditions is caused by the continual movement of the highs from west to east across the Australian continent roughly once every 10 days.

The Bass Strait is located on the northern edge of the westerly wind belt known as the Roaring Forties. In winter, when the subtropical ridge moves northwards over the Australian continent, cold fronts generally create sustained west to south-westerly winds and frequent rainfall in the region (McInnes & Hubbert, 2003). In summer, frontal systems are often shallower and occur between two ridges of high pressure, bringing more variable winds and rainfall.

Winds in this section of the Otway basin and western Bass Strait generally exceed 13 knots (23.4 km/hr) for 50% of the time and are typically between the range of 10-30 km/hr. Winds contribute to the predominant moderate to high wave-energy environment of area and are predominantly south-westerly cycling to north-westerly. Occasionally, intense mesoscale low-pressure systems occur in the region, bringing very strong winds, heavy rain, and high seas. These events are unpredictable in occurrence, intensity, and behaviour, but are most common between September and February (McInnes & Hubbert, 2003).

Table 4-3: Meteorological conditions representative of the operational area within the Otway Region

Month	Mean Maximum Monthly Temperature (°C)	Mean Minimum Monthly Temperature (°C)	Mean Rainfall (mm)
January	21.4	13.4	44.7
February	21.5	14.0	41.3
March	20.4	13.3	55.7
April	18.0	11.7	70.4
May	15.6	10.1	91.5
June	13.7	8.5	96.6
July	13.0	7.6	106.2
August	13.8	7.9	104.1
September	15.2	8.5	90.2
October	17.0	9.6	80.4
November	18.3	10.8	62.6
December	19.9	12.1	52.2
Annual Average	17.3	10.6	895.0

Source: BOM, 2022

Description of Environment for the Minerva Field

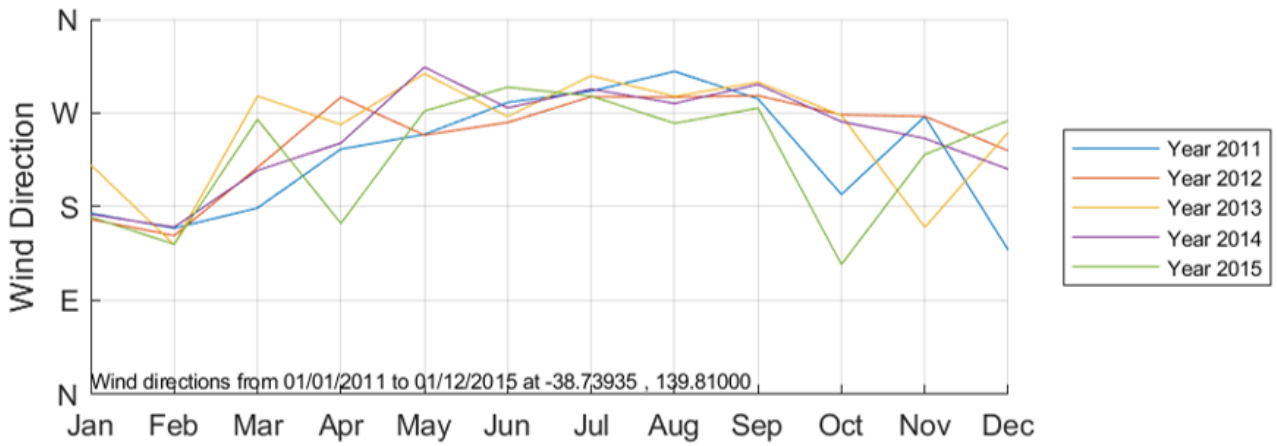


Figure 4-5: Average monthly wind direction (GHD, 2022)

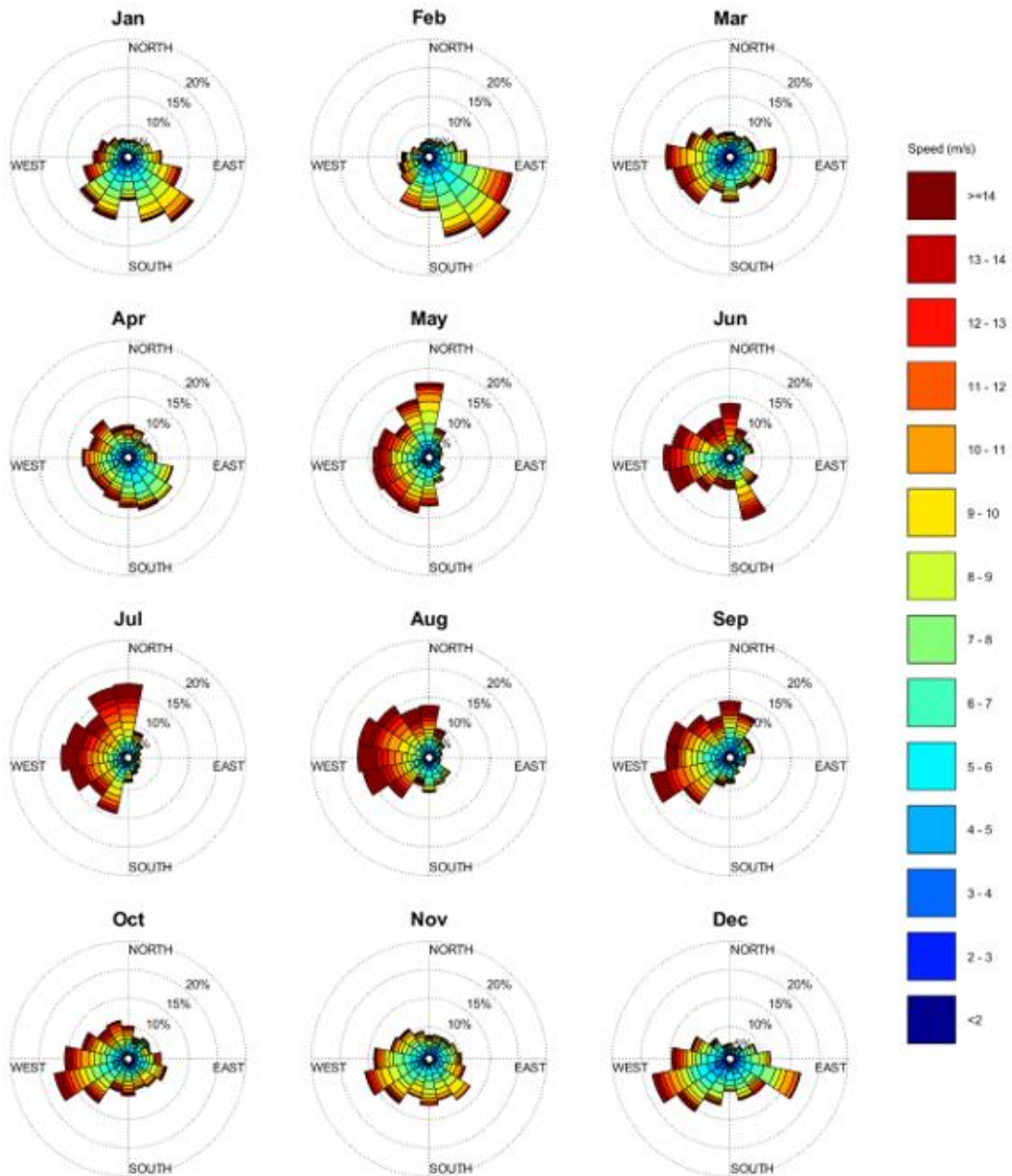


Figure 4-6: Average monthly wind roses (GHD, 2022)

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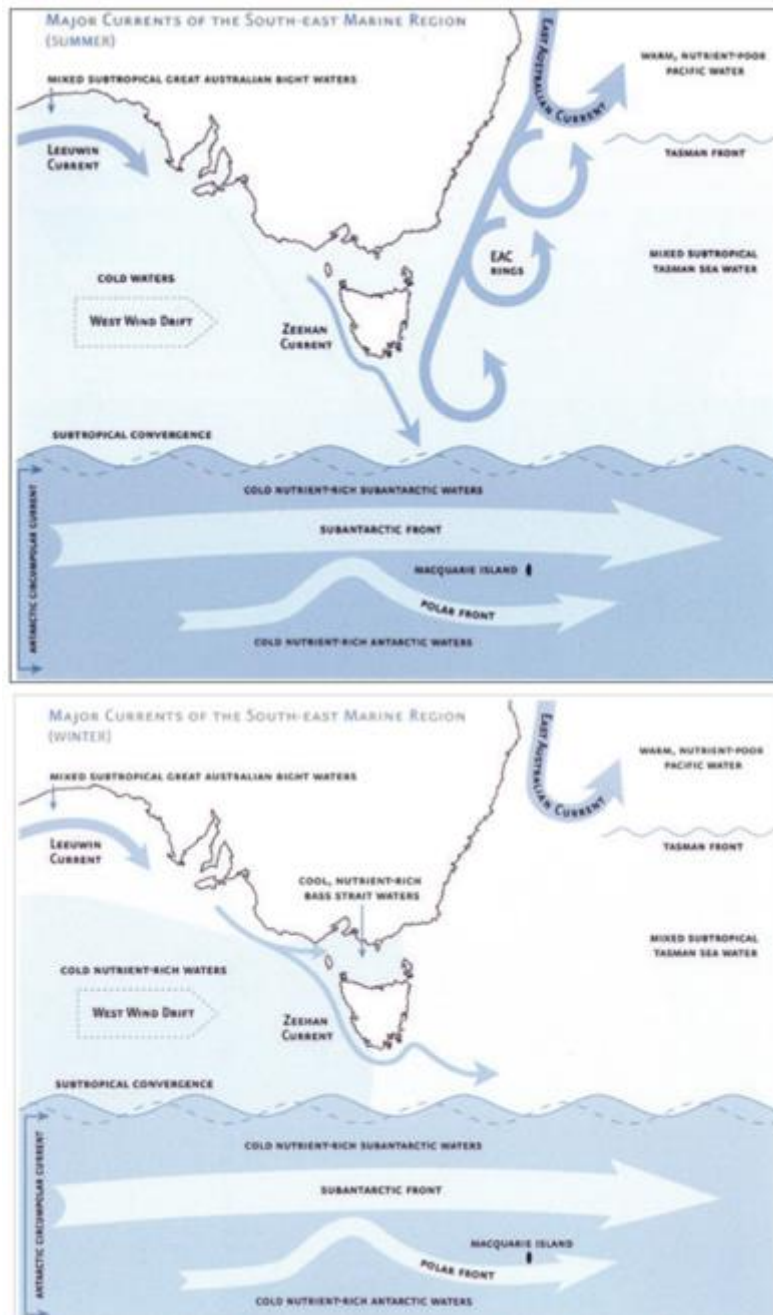
4.2.2 Oceanography

Currents and Tides

Currents and oceanic properties, such as temperature and nutrients, play a vital role in the ecosystems of the Region. Ocean currents link marine systems, while fronts and upwellings drive the productivity of open ocean environments (DNP, 2013). The western reserves of the South-east Marine region, including the Otway, are predominantly influenced by the Leeuwin and Zeehan currents where there is a slow easterly flow of waters in the Bass Strait and a large anti-clockwise circulation (DNP, 2013). The Leeuwin Current transports warm, sub-tropical water southward along the Western Australian (WA) coast and then eastward into the Great Australian Bight (GAB), where it mixes with the cool waters from the Zeehan Current running along Tasmania's west coast (DNP, 2013). The Leeuwin and Zeehan currents are stronger in winter than in summer, with the latter flowing into Bass Strait during winter (Figure 4-7).

Tides in this region are semi-diurnal with some diurnal inequalities (Jones and Padman, 2006; Easton, 1970), generating tidal currents along a north-east/south-west axis with speeds generally ranging from 0.1 to 2.5 m/s (Baines and Fandry, 1983). The tides in the Otway are considered microtidal with a range of approximately 0.8 to 1.2 m, however the tidal ranges and velocities vary rapidly in the western entrance to Bass Strait (DNP, 2013).

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Source: DoE, 2015

Figure 4-7: Major ocean currents influencing Southern Australia (Summer and Winter)

Waves

The Otway coast has a predominantly south-westerly aspect and is highly exposed to swell from the Southern Ocean.

There are two principal sources of wave energy in the Otway Basin:

- Westerly swell from the Great Australian Bight and Southern Ocean; and
- Locally generated winds, generally from the west and east.

This region is typically one of high energy and is fully exposed to wave heights ranging from 1.5 m to 2 m with periods of 8 s to 13 s. Although waves heights up to 10 m can occur during storm events and a combination of wind forcing against tidal currents can cause greater turbulence.

Water Temperature and Salinity

The South East Marine Region (SEMR) is oceanographically complex, with subtropical influences from the north and subpolar influences from the south (Hosack & Dambacher 2012). Sea surface water temperatures in this region vary seasonally from a minimum of 12.6°C to a maximum of 18.4°C (APASA, 2013). While salinity remains at approximately 35.0 practical salinity units (PSU) year-round when tested at a water depth range of 30 m (RPS, 2020). During winter, the South Australian current moves dense, salty warmer water eastward from the Great Australian Bight into the western margin of Bass Strait. In winter and spring, waters within the strait are well mixed with no obvious stratification, while during summer the central regions of the strait become stratified (RPS, 2020). The southwest region of Victorian area has significant upwelling of colder, nutrient rich deep water during summer that can cause sea surface temperatures to decrease by 3°C compared with offshore waters (Butler *et al.*, 2002).

Bathymetry and Geomorphology

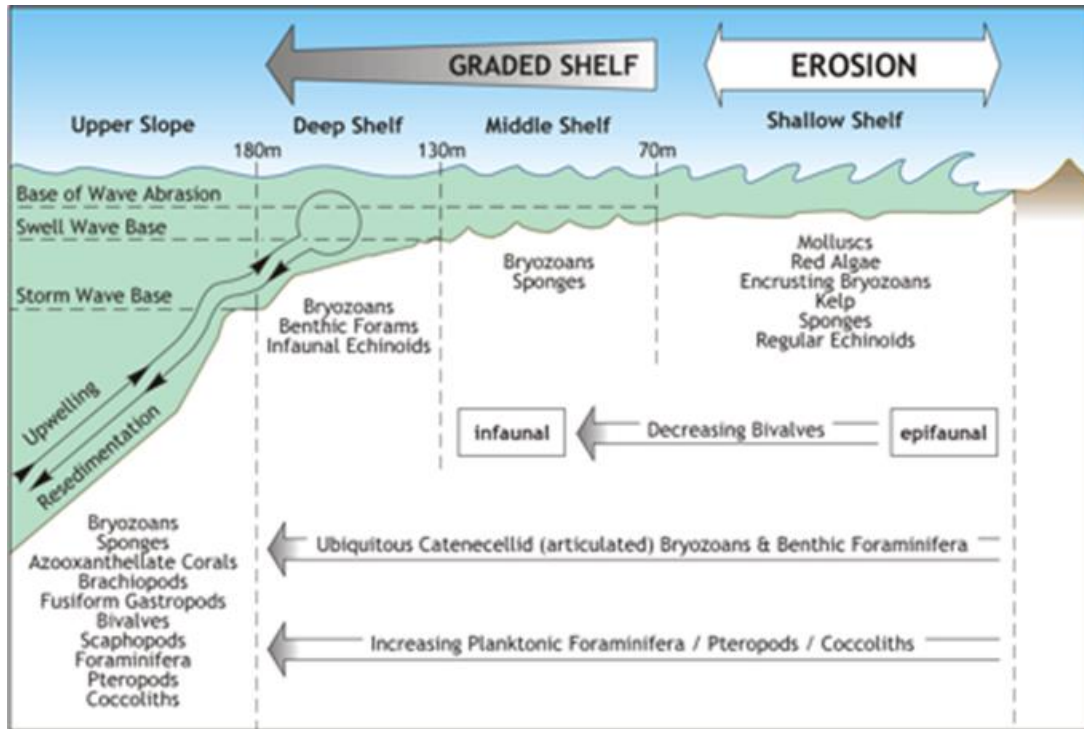
The SEMR shows significant variation in water depth and sea floor features (DNP, 2013). Included is the south-eastern section of Australia's continental margin comprising the Otway Shelf and the Bonney Coast, Bass Strait, and the western shelf of Tasmania. The Minerva field is located within the 400 km long Otway shelf, which lies between 37° and 43.5°S and 139.5°E (Cape Jaffa) and 143.5°E (Cape Otway).

The narrowest point is off Portland, where the shelf is less than 20 km wide. It broadens progressively westward, to 60 km off Robe, SA, and eastward to 80 km off Warrnambool (James *et al.*, 2013). The Otway shelf is comprised of Miocene limestone below a thin veneer of younger sediments.

Boreen *et al.* (1993) examined 259 sediment samples collected over the Otway Basin and the Sorell Basin of the west Tasmanian margin. Samples were taken during two research cruises (January/February 1987 and March/April 1988) on the RV *Rig Seismic* using dredges, corers, grabs and a heatflow probe. Based on assessment of the sampled sediments the authors concluded the Otway continental margin is a swell-dominated, open, cool water, carbonate platform. A conceptual model was developed that divided the Otway continental margin into five depth-related zones – shallow shelf, middle shelf, deep shelf, shelf edge and upper slope (Figure 4-8).

The shallow shelf consists of exhumed limestone substrates that host dense encrusting mollusc, sponge, bryozoan and red algae assemblages. The middle shelf is a zone of swell-wave shoaling and production of mega-rippled bryozoan sands. The deep shelf is described as having accumulations of intensely bioturbated, fine, bioclastic sands. At the shelf edge and top of slope, nutrient-rich upwelling currents support extensive, aphotic bryozoan/sponge/coral communities. The upper slope sediments are a bioturbated mixture of periplatform bioclastic debris and pelleted foraminiferal/nanno-fossil mud. The lower slope is described as cross-cut by gullies with low accumulation rates, and finally, at the base of the slope the sediments consist of shelf-derived, coarse grain turbidites and pelagic ooze.

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Source: Boreen *et al.*, 1993

Figure 4-8: Model of the Geomorphology of the Otway Shelf

4.2.3 Air Quality

Air quality in the offshore Otway region is expected to be high given that air flow originates in the Southern Ocean, and there are no intervening land masses that could influence the quality of air from any anthropogenic or natural terrestrial sources. However, offshore anthropogenic activities (shipping, industry developments) would contribute to local variation in air quality.

Air quality data for the region is available from the Environment Protection Authority (EPA) Victoria air quality monitoring stations, and Cape Grim Baseline Air Pollution Station on Tasmania's west coast, which is one of the three premier baseline air pollution stations in the World Meteorological Organisation-Global Atmosphere Watch (WMO-GAW) network, measuring greenhouse and ozone depleting gases and aerosols in clean air environments.

The Victorian air quality data is collected at 15 performance monitoring stations representing predominantly urban and industrial environments in the Port Phillip and Latrobe Valley regions of Victoria. Results are assessed against the requirements of the National Environment Protection (Ambient Air Quality) Measure for the pollutants carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), lead (Pb), particles less than 10 micrometres in diameter (PM₁₀) and particles less than 2.5 micrometres in diameter (PM_{2.5}). Air monitoring reports shows Victoria's air quality is generally good with AAQ NEPM goals and standards being met, however, there were some exceedances for particles.

It is expected that air quality within the vicinity of the operational area and EMBA's will be typical of the Victorian offshore marine environment (i.e. high).

4.2.4 Ambient Noise

Ambient noise within the offshore Otway region is expected to be dominated by natural physical (e.g. wind, waves, rain) and biological (e.g. echolocation and communication noises generated by cetaceans and fish) sources. The southern ocean is also subject to iceberg calving, shoaling and disintegration which is identified as a dominant source of low-frequency (<100 Hz) noise.

Ambient ocean noise levels can vary considerably due to prevailing metocean conditions. For example, wind is a major contributor to noise between 100 Hz and 30 kHz (WDCS, 2004) and can reach 85-95 dB re 1µPa²/Hz under extreme conditions. Rain may also produce short periods of high underwater sound with a flat frequency

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spectrum to levels of 80 dB re 1 $\mu\text{Pa}^2/\text{Hz}$. In exposed areas of ocean, ambient noise levels are frequently around 90–110 dB re 1 μPa (APPEA, 2005) and can vary on a daily basis by 10 to 20 dB re 1 μPa (Richardson *et al.*, 1995).

Anthropogenic noise sources is also expected in the region with the SEMR supporting a range of marine industries including commercial fishing and aquaculture, offshore oil and gas production, shipping, ports, as well as recreation and tourism activities (DoE, 2015). Many vessels are expected, with the SEMR considered one of the busiest shipping regions in Australia (DoE, 2015). This anthropogenic influence is expected to affect ambient noise levels.

4.2.5 Sediment Quality

Marine sediment quality within the vicinity of the Minerva field and broader Otway region is expected to be representative of the typically pristine offshore Victorian waters. Variations to this state (e.g. increased metal concentrations) may occur closer to coastal regions that are subject to large tidal ranges, terrestrial run-off or anthropocentric factors (i.e. ports, industrial discharges, etc.).

4.2.6 Water Quality

Marine water quality considers chemical, physical and biological characteristics with respect to its suitability to support marine life, or for a purpose such as swimming or fishing. Marine water quality can be measured by several factors, such as the concentration of dissolved oxygen, the salinity, the amount of material suspended in the water (turbidity or total suspended solids) as well as the concentration of contaminants such as hydrocarbons and heavy metals.

The nutrient concentrations are considered to be relatively low in the South-east Marine Region with the exception of localised areas of high productivity (DoE, 2015). It is hypothesised that this could be due to the biological demands of the Bass Strait waters consuming much of the nutrients before moving into Central Bass Strait (Gibbs, 1992). The Otway coastline is known for high energy wave activity and strong ocean currents (NOO, 2002), and therefore water column turbidity in this region is subject to high natural variability. Weather conditions in the coastal environment around Port Campbell and Port Ferry are known to influence offshore hydrodynamic conditions and are a driver of sediment dynamics, impacting benthic and pelagic habitats and changing water column turbidity. Wave-driven sediment resuspension generates high turbidity levels within coastal zones, commonly exceeding 50 mg/L (Larcombe *et al.*, 1995; Whinney, 2007; Browne *et al.*, 2013), but coastal communities appear generally well adapted to deal with these extrinsic stresses.

Marine water quality within the vicinity of the Minerva field and broader Otway region is expected to be representative of typical offshore Victorian waters. Variations to this state (e.g. increased metal concentrations) may occur closer to coastal regions that are subject to large tidal ranges, terrestrial run-off or anthropocentric factors (i.e. ports, industrial discharges, etc.).

4.3 Ecological Environment

4.3.1 Benthic Habitats and Infauna

Benthic communities are biological communities that live in or on the seabed. These communities typically contain light-dependent taxa such as algae, seagrass and corals, which obtain energy primarily from photosynthesis, and/or animals such as molluscs, sponges and worms that obtain their energy by consuming other organisms or organic matter. Benthic habitats are the seabed substrates that benthic communities grow on or in; these can range from unconsolidated sand to hard substrates (e.g. limestone) and occur either singly or in combination.

Benthic communities across the Bass Strait are determined by the seafloor habitat and have a wide distribution with high diversity. A series of benthic surveys were conducted by the Victorian Museum on the continental shelf of the Bass Strait between 1979 and 1984 (Poore *et al.*, 1985; Wilson and Poore, 1987).

The Otway continental margin is a swell-dominated, open, cool-water carbonate platform which was divided into five depth-related zones by Boreen *et al.* (1993) (Figure 4-8):

- Shallow shelf: consisting of exhumed limestone substrates that host encrusting mollusc, sponge, bryozoan and red algae assemblages.
- Middle shelf: a zone of swell wave shoaling and production of mega-rippled bryozoan sands.

Description of Environment for the Minerva Field

- Deep shelf: accumulations of intensely bioturbated, fine bioclastic sands.
- Shelf edge and top of slope: nutrient-rich upwelling currents support extensive, aphotic bryozoan / sponge / coral communities.

The dominant benthic habitat throughout the continental shelf, as described by the SEMR profile (DoE, 2015) is rocky reef and soft sediment.

Soft Sediment

Unvegetated soft sediments are a widespread habitat in both intertidal and subtidal areas, particularly in areas beyond the photic zone. Factors such as depth, light, temperature and the type of sediment present can vary the biodiversity and productivity of soft sediment habitat.

The Middle Otway Shelf (70-130 m depth) is a zone of large tracts of open sand with little or no epifauna to characterise the area: infaunal communities and bivalves, polychaetes and crustaceans dominate in the open sand habitat. The Deep Otway Shelf (130 – 180 m) sediments consist of accumulations of intensely bioturbated, fine, bioclastic sands. The Upper Slope of Otway Shelf (>180 m) incorporates the edge/ top of the shelf which displays nutrient-rich upwelling currents support extensive, aphotic bryozoan / sponge / coral communities. The upper slope is dominated by bioturbated mixture of periplatform bioclastic debris and pelleted foraminiferal / nannofossil mud. Turbidites and re-sedimentation features are common. Bioturbation and shelf-derived skeletal content decrease progressively downslope and pelagic muds dominate below 500 m.

Scientific surveys have shown that some shallow Victorian sandy environments have the highest levels of animal diversity ever recorded (Parks Victoria, 2016a). Some of the larger animals found associated with these soft sediment environments in Victoria include smooth stingray (*Dasyatis brevicaudata*), pipi (*Plebidonax deltoids*), dumpling squid (*Euprymna tasmanica*), common stargazer (*Kathetostoma leave*) and heart urchin (*Echinocardium cordatum*) (Parks Victoria, 2016a).

Seagrass

Seagrasses are marine flowering plants, with around 30 species found in Australian waters (Huisman, 2000). While seagrass meadows are present throughout southern and eastern Australia, the proportion of seagrass habitat within the south-eastern sector is not high compared to the rest of Australia (in particular with parts of South Australia and Western Australia) (Kirkham, 1997).

Seagrass generally grows in soft sediments within intertidal and shallow subtidal waters where there is sufficient light and are common in sheltered coastal areas such as bays, lees of islands and fringing coastal reefs (McClatchie *et al.*, 2006; McLeay *et al.*, 2003). Known seagrass meadows within the spill EMBA include Corner Inlet, Port Phillip Bay and Western Port Bay. Seagrass meadows are important in stabilising seabed sediments, and providing nursery grounds for fish and crustaceans, and a protective habitat for the juvenile fish and invertebrates species (Huisman, 2000; Kirkham, 1997).

Seagrass is expected in the EMBA's along the Victorian coastline.

Algae

Benthic microalgae are present in areas where sunlight reaches the sediment surface. Benthic microalgae are important in assisting with the exchange of nutrients across the sediment-water interface; and in sediment stabilisation due to the secretion of extracellular polymeric substances (Ansell *et al.*, 1999). Benthic microalgae can also provide a food source to grazers such as gastropod and amphipods (Ansell *et al.*, 1999).

Macroalgae communities occur throughout the Australian coast and are generally found on intertidal and shallow subtidal rocky substrates. Macroalgal systems are an important source of food and shelter for many ocean species; including in their unattached drift or wrack forms (McClatchie *et al.*, 2006).

Macroalgae are divided into three groups: *Phaeophyceae* (brown algae), *Rhodophyta* (red algae), and *Chlorophyta* (green algae). Brown algae are typically the most visually dominant and form canopy layers (McClatchie *et al.*, 2006). The presence and growth of macroalgae are affected by the principal physical factors of temperature, nutrients, water motion, light, salinity, substratum, sedimentation and pollution (Sanderson, 1997). Macroalgal assemblages vary, but *Ecklonia radiata* and *Sargassum* sp. are typically common in deeper areas. Macroalgae is expected in the EMBA's along the Victorian coastline.

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Coral

Corals are generally divided into two broad groups: the zooxanthellate ('reef-building', 'hermatypic' or 'hard') corals, which contain symbiotic microalgae (zooxanthellae) that enhance growth and allow the coral to secrete large amounts of calcium carbonate; and the azooxanthellate ('ahermatypic' or 'soft') corals, which are generally smaller and often solitary (Tzioumis and Keable, 2007). Hard corals are generally found in shallower (<50 m) waters while the soft corals are found at most depths, particularly those below 50 m (Tzioumis and Keable, 2007).

Corals do not occur as a dominant habitat type within the EMBA, however their presence has been recorded around areas such as Wilsons Promontory National Park and Cape Otway. Reef development by hard corals does not occur further south than Queensland (Tzioumis and Keable, 2007). Soft corals are typically present in deeper waters throughout the continental shelf, slope and off-slope regions, to well below the limit of light penetration.

Reproduction methods for cold water corals are not as well understood as warm water corals such as those of the Great Barrier Reef, but it is likely that some are still broadcast spawners (like their tropical counterparts), while others brood and release formed larvae (Roberts *et al.*, 2009).

Carbonate sands and exposed limestone

Boreen *et al.*, (1993) reported that carbonate sands in the Otway middle shelf support a benthic fauna dominated by bryozoans, infaunal echinoids and assemblages of sponges. Other components include bivalves (commonly *Mysella donaciformis* and *Legrandina bernadi*), *Chlamys sp.* scallops and small gastropods. The sand octopus (*Octopus kaurna*) also inhabits sandy sediments.

Within the inner shelf, Boreen *et al.* (1993) reported that the benthic communities associated with hard limestone substrates were comprised of sponges, encrusting and branching coralline algae, poisonellid algae, bryozoa, benthic forams, robust sarpullids, brachiopods, bivalves, gastropods, fleshy red algae and kelp.

A benthic survey of inner shelf sediments in the vicinity of the Minerva Gas Field development, found that the seafloor was composed of course, well-sorted sand (Currie and Jenkins, 1994). This survey identified 196 species and a total of 5,035 individuals comprised of 63% crustaceans, 15% polychaetes, 8% molluscs and 5% echinoderms. The most abundant species were the bivalve *Katlysia sp.* (12.4 individuals/m²), the sarconid *Triloculina affinis* (8.9 individuals/m²), the tanaid isopod *Apsuedes sp.* (8.3 individuals/m²) and the spionid polychaete *Prionospio coorilla* (4.8 individuals/m²) (Currie, 1995).

Demersal fishes likely to be associated with carbonate sands on the middle and inner shelf include (LCC, 1993) eastern stargazer (*Kathetostoma laeue*), elephant shark (*Callorhynchus milli*), greenback flounder (*Rhombosolea taarina*), gummy shark (*Mustelus antarcticus*), long-snouted flounder (*Ammotretis rostratus*), saw shark (*Pristiophorus nudipinnis*), southern sand flathead (*Platycephalus bassensis*) and southern school whiting (*Sillago bassensis*).

Basalt rises

There is no published information on the species assemblages of the basalt rises in the south-east and east of the EMBA, other than general information on their importance as a southern rock lobster fishing area. Following the classification system of Hutchinson *et al.* (2010), these rises can be classified as deep reefs, defined as rocky habitat at depths greater than 20 m.

In general, deep reef biota is typified by invertebrate animals rather than algae, usually in the form of sessile, filter feeding fauna. Organisms such as sponges, octocorals, bryozoans and ascidians usually dominate rock faces on deep reefs (Hutchinson *et al.*, 2010). This is partly due to the ability of species such as sponges to survive in low light conditions that algae are unable to survive in. The most common algae present on deep reefs are encrusting coralline red algae which is able to tolerate low levels of penetrating light (Hutchinson *et al.*, 2010).

The distribution of fish fauna is governed by biologically formed habitat structure as well as by food. Fish assemblages typically begin to change at depths greater than 20 m, with the loss of the kelp-associated wrasses and leatherjackets, and the appearance of deeper water fishes such as boarfishes (family *Pentacerotidae*), splendid perch (*Callanthias australis*) and banded seaperch (*Hypoplectrodes nigroruber*). Schools of barber perch (*Caesioperca razor*) are replaced by the related butterfly perch (*Caesioperca lepidoptera*) (O'Hara *et al.*, 1999). While fish present on shallow subtidal reefs include algavores, omnivores and carnivores, those on deep reefs are typically carnivorous as algae are typically not abundant at depth.

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Although common on rocky reefs, sponges, hydrozoans, anthozoans, bryozoans, and ascidians are thought to be largely unpalatable to reef fish. It is therefore likely that fish at these depths are feeding on associated mobile invertebrate fauna. Edmunds *et al.* (2006) suggests that mobile invertebrate organisms play an ecologically significant role, providing food for carnivorous fishes on deep reefs in Port Phillip Bay, and are likely to include a variety of crustaceans and molluscs.

Information from the few specific studies of specific deep reef habitats in Bass Strait can be assessed to draw broad conclusions about the species assemblages likely to occur on the basalt rises, noting that assemblages of reef species are likely to differ based on geology, habitat structure, exposure to tidal and wave motion and nutrient availability. These studies are generally limited to one off video surveys with little or no temporal replication. More generally little is known about deep reefs in the Bass Strait, or the biology and ecology of organisms that live on them, due in part to difficulties associated with conducting observational work or manipulative experiments *in situ*.

Beaman *et al.* (2005) undertook video surveys of the New Zealand Star Bank in the eastern Bass Strait. This feature is comprised of granite outcrops between approximately 30 to 40 m water depth, rising from the surrounding relatively flat seabed of mainly unconsolidated quartz sands with variable amounts of shell debris. Underwater video footage revealed a structurally complex surface of crevices and steep slopes, which is densely covered in erect large and small sponges and encrusting calcareous red algae. Encrusting red algae are usually the greatest occupier of space due to tolerance of low light conditions (< 1% of surface) found at these depths (Andrew, 1999). Mobile benthos observed were crinoids within crevices and the black sea urchin (*Centrostephanus rodgersii*) in low numbers on high slope surfaces and dense encrustations on low relief lower slopes. Underwater video showed a draughtboard shark (*Cephaloscyllium laticeps*) cruising above the crevices of high-relief granite outcrop as well as schools of butterfly perch feeding on plankton in the water column above the bank.

This study demonstrated a significant difference between communities that live on hard-ground granite outcrops of the New Zealand Star Bank and those which exist on soft substrate surrounding the rocky bank. These granite outcrops support a diverse sessile fauna of large and small sponges, bryozoans, hydroids and ascidians which prefer stable attachment surfaces (Underwood, 1991; Andrew 1999; Andrew and O'Neill, 2000). It is likely that similar species assemblages occur within the EMBA's between the flat carbonate sands of the seabed and the basalt rises.

Edmunds *et al.* (2006) investigated assemblages of benthic fauna at near shore deep reefs within Central Victoria (Point Addis and Wilsons Promontory) and Port Phillip Bay. The Port Phillip Bay deep reef assemblages were dominated by sponges, occupying 70 to 90% of the rocky substratum. The Point Addis assemblage was dominated by upright sponges (arborescent, massive and flabellate growth forms), but cnidarians including hydroids were entirely absent. Wilsons Promontory had a low coverage of encrusting sponges and hydroids, with high abundances of red and brown algae and the gorgonian fan (*Pteronisis sp.*). The Port Phillip Head assemblage was dominated by encrusting sponges, hydroids, ascidians and bryozoans.

In summary, the species assemblages associated with the basalt rises in the south-east and east of the EMBA's are likely to be significantly different to the species assemblages of the surrounding flat seabed supporting carbonate sands. The depth of the basalt rises is likely to preclude significantly algal growth, with red algae likely to be most abundant. Sponges, hydrozoans, anthozoans, bryozoans, and ascidians are likely to occur though the relative abundances of these groups are not known. Targeting of the rises for rock lobster fishing indicates presence of this species in relatively high densities. The trophic effects of long-term targeting of this species at these rises is not known. Site attached fishes are not likely to include kelp-associated wrasses and leatherjackets. Further statements cannot be made with sufficient confidence as site specific data for these rises are not available.

4.3.2 Shoreline Habitats

The coastal environment throughout southern and eastern Australia is varied, and includes areas of rocky cliffs, sandy beaches, and tidal flats. Each of these shoreline types has the potential to support different flora and fauna assemblage due to the different physical factors (e.g. waves, tides, light etc.) influencing the habitat.

Mangroves

Mangroves grow in intertidal mud and sand, with specially adapted aerial roots (pneumatophores) that provide for gas exchange during low tide (McClatchie *et al.*, 2006). Mangrove forests are important in helping stabilise coastal sediments, providing a nursery ground for many species of fish and crustacean, and providing shelter or nesting areas for seabirds (McClatchie *et al.*, 2006).

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The mangroves in Victoria are the most southerly extent of mangroves found in the world and are located mostly along sheltered sections of the coast within inlets or bays (MESA, 2015). There is only one species of mangrove found in Victoria, the white or grey mangrove (*Avicennia marina*), which is known to occur at Western Port and Corner Inlet within the spill EMBA (Figure 4-9).

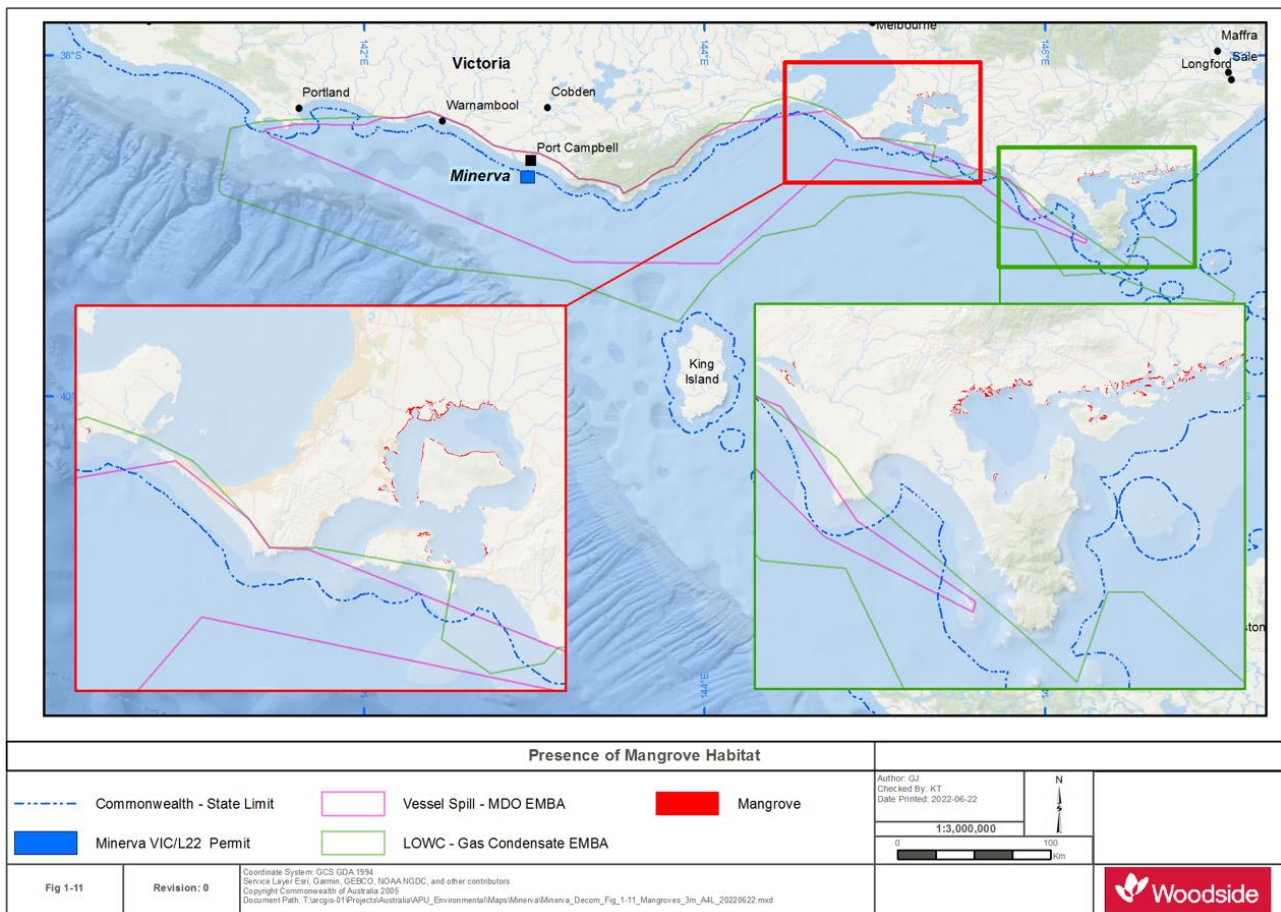


Figure 4-9: Presence of mangrove habitat within the EMBA

Sandy Beaches

Sandy beaches are dynamic environments, naturally fluctuating in response to external forcing factors (e.g. waves, currents etc). Sandy beaches can support a variety of infauna and provide nesting habitat to birds and turtles. Sand particles vary in size, structure and mineral content; this in turn affects the shape, colour and inhabitants, of the beach. Sandy beaches within the EMBA are expected to vary in length, width and gradient, and to be interspersed among areas of hard substrate (for example, sandstone) that form intertidal platforms and rocky outcrops. There is a wide range of variation in sediment type, composition, and grain size along the EMBA.

Sandy beaches are present along the Victorian coastline and intercept the EMBA. The following areas have known stretches of sandy beach:

- Portland to Port Fairy
- Port Fairy to Lady Bay (Warrnambool) coastline
- Small sections of sandy beach between Warrnambool and Cape Otway
- Marengo east to Anglesea

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Rocky Shores and Limestone Platforms

Hard and soft rocky shores, including bedrock outcrops, platforms, low cliffs (less than five metres), and scarps. Depending on exposure, rocky shores can be host to a diverse range of flora and fauna, including barnacles, mussels, sea anemones, sponges, sea snails, starfish and algae.

Rocky shore habitats are present along the Victorian coastline and intercept the EMBA's. The following areas have known stretches of rocky shore:

- The Cape Nelson to Portland coastline
- The section of coast between Warrnambool and Cape Otway (covering a distance of ~100 km)
- Intertidal rocky shores stretch east to Marengo
- Interspersed areas between Marengo east to Anglesea

Wetlands

Wetlands are areas of land where water covers the soil – all year or just at certain times of the year. Wetlands may be natural or artificial and the water within a wetland may be static or flowing, fresh, brackish, saline or underground.

Wetlands perform an important range of environmental, social and economic services, such as protecting our shores from wave action, reducing the impacts of floods, absorbing pollutants and improving water quality. They also provide habitat for a variety of plants and animals, including nurseries for fish and other freshwater and marine life, and are critical to Australia's commercial and recreational fishing industries.

The operational area does not overlap any wetlands, however, the EMBA's overlap two wetlands of international importance (Ramsar wetlands): Western Port and Port Phillip Bay (Section 4.14.1.5). The MDO spill EMBA also overlaps six wetlands of national importance but only two have connectivity with the marine environment, while the LOWC spill EMBA overlaps nine wetlands of national importance with three having connectivity to the marine environment; Western Port, Swan Bay and Swan Island, and Aire River (Section 4.14.1.6).

Saltmarsh

Saltmarshes are terrestrial halophytic (salt-adapted) ecosystems that mostly occur in the upper-intertidal zone and are widespread along the coast. Saltmarshes are typically dominated by dense stands of halophytic plants such as herbs, grasses and low shrubs. In contrast to mangroves, the diversity of saltmarsh plant species increases with increasing latitude. The vegetation in these environments is essential to the stability of the saltmarsh, as they trap and bind sediments. The sediments are generally sandy silts and clays and can often have high organic material content. Saltmarshes provide a habitat for a wide range of both marine and terrestrial fauna, including infauna and epifaunal invertebrates, fish and birds.

Saltmarsh is found along many parts of the Victorian coast, although is most extensive in western Port Phillip Bay, northern Western Port, within the Corner Inlet-Nooramunga complex, and behind the sand dunes of Ninety Mile Beach in Gippsland (Figure 4-10) (Boon *et al.*, 2011).

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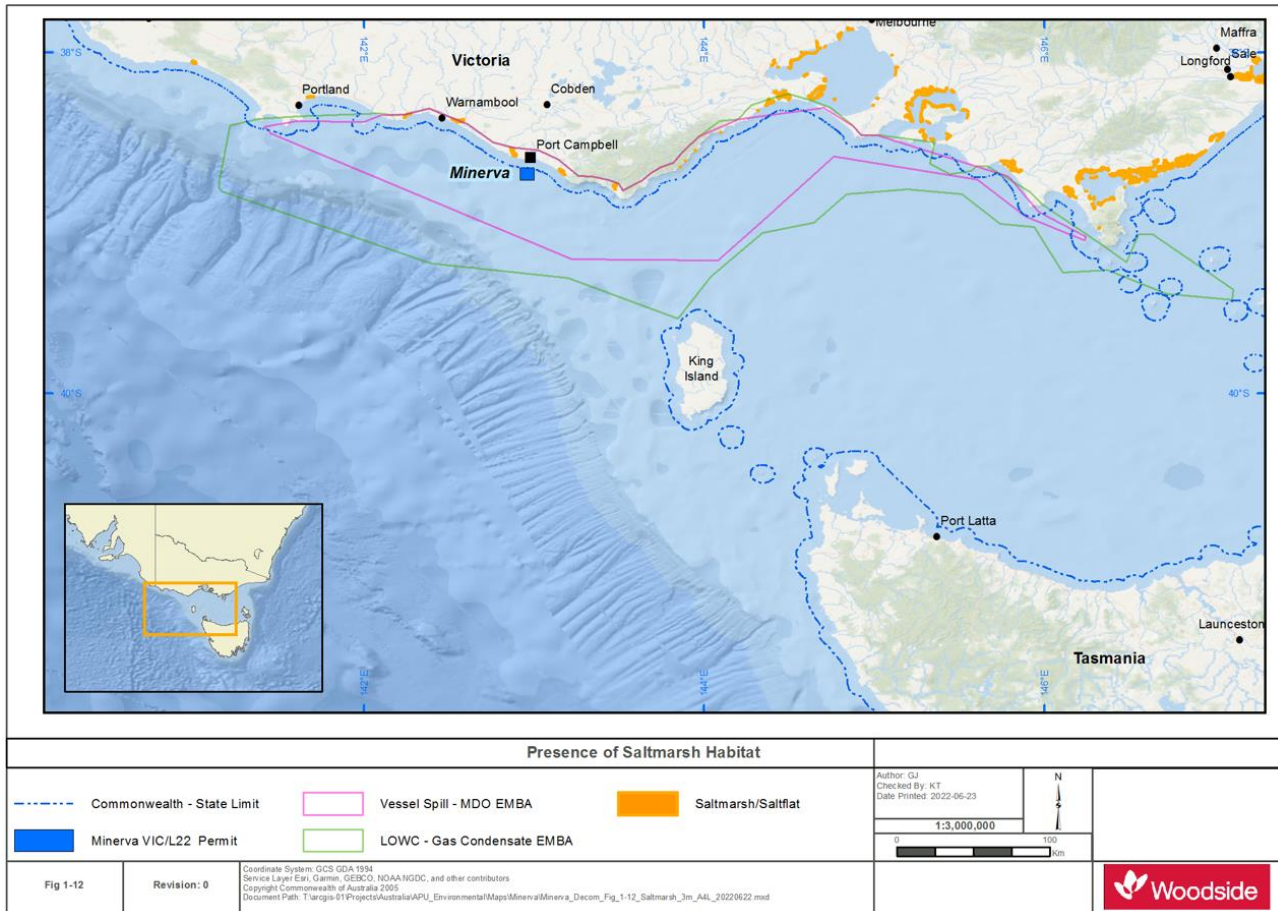


Figure 4-10: Presence of saltmarsh habitat within the EMBA

4.3.3 Plankton

Plankton consists of microscopic organisms typically divided into phytoplankton (algae) and zooplankton (fauna including larvae). Plankton play a major role in the trophic system with phytoplankton being a primary producer and zooplankton a primary consumer. They are both in turn consumed by other fauna species.

Phytoplankton are autotrophic planktonic organisms living within the photic zone and spend either part or all of their lifecycle drifting with the ocean currents. Phytoplankton are dependent on oceanographic processes (e.g. currents and vertical mixing), that supply nutrients needed for photosynthesis. Thus, phytoplankton biomass is typically variable (spatially and temporally) (Evans *et al.*, 2016), but greatest in areas of upwelling, or in shallow waters where nutrient levels are high. Peak primary productivity, however, varies on a local and regional scale.

The carrying capacity of marine ecosystems (the mass of fish resources) and recruitment of individual stocks is strongly related to plankton abundance, timing and composition. The Bonney coast upwelling, located within the EMBA, is a productivity hotspot, with high densities of zooplankton and are important for fish and whales. Of particular importance in the region is the coastal krill, *Nyctiphanes australis*, which swarms throughout the water column of continental shelf waters primarily in summer and autumn, feeding on microalgae and providing an important link in the blue whale food chain.

There have been relatively few studies of plankton populations in the Otway and Bass Strait regions, with most concentrating on zooplankton. Watson and Chaloupka (1982) reported a high diversity of zooplankton in eastern Bass Strait, with over 170 species recorded. However, Kimmerer and McKinnon (1984) reported only 80 species in their surveys of western and central Bass Strait.

Plankton distribution is dependent upon prevailing ocean currents including the East Australia Current, flows into and from Bass Strait and Southern Ocean water masses. Plankton distribution in the region is expected to be highly variable both spatially and temporally and are likely to comprise characteristics of tropical, southern Australian, central Bass Strait and Tasman Sea distributions.

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4.3.4 Invertebrates

There is a very large number of marine invertebrates in deep waters around Australia. Knowledge of the species in different habitats is extremely patchy; the number of deep-water benthic fauna is large but almost unknown. Throughout the region, a variety of seabed habits support a range of animal communities such as sparse sponges to extensive ‘thickets’ of lace corals and sponges, polychaete worms and filter feeders (DNP, 2013).

Characteristics of large species of crustacea, such as lobster, prawn and crab, which are significant commercial species in southern Australia, are well known. Mollusc species, such as oysters, scallops and abalone are also commercially fished, and their biology and abundance are well known. Major fisheries for the blacklip and to a lesser extent, greenlip abalone and scallops have been founded. The cooler waters of southern Australia also support the Maori octopus commercial fishery, which is one of the largest octopuses in Australia (with arm spans longer than 3 m and weighing more than 10 kg. Other molluscs are abundant in southern Australia and Tasmania such as the sea slug with more than 500 species. Volutes and cowries represent a relic fauna in southern Australia, with several species being very rare and can be highly sought after by collectors.

Echinoderms, such as sea stars, sea urchins and sea cucumbers are also an important fauna species of the southern Australian and Tasmanian waters, with several species at risk of extinction (DPIPWE, 2016).

Studies by the Museum of Victoria found that invertebrate diversity was high in southern Australian waters although the distribution of species was patchy, with little evidence of any distinct biogeographic regions (Wilson and Poore, 1987). Results of sampling in shallower inshore sediments reported high diversity and patchy distribution (Parry *et al.*, 1990). In these areas, crustaceans, polychaetes and molluscs were dominant.

4.3.5 Invasive / Introduced Marine Species

Invasive marine species are marine plants or animals that have been introduced into a region beyond their natural range and have the ability to survive, reproduce and establish. More than 200 non-indigenous marine species including fish, molluscs, worms and a toxic alga have been detected in Australian coastal waters (AMSA, NA).

It is widely recognised that IMS can become pests and cause significant impacts on economic, ecological, social and cultural values of marine environments. Impacts can include the introduction of new diseases, altering ecosystem processes and reducing biodiversity, causing major economic loss and disrupting human activities (Brusati and Grosholz, 2006).

In the South-east Marine Region, 115 marine pest species have been introduced and an additional 84 have been identified as possible introductions, or ‘cryptogenic’ species (NOO, 2002). Several introduced species have become pests either by displacing native species, dominating habitats or causing algal blooms.

Key known pest species in the South-East Marine Region include (NOO, 2001):

- Northern pacific sea star (*Asterias amurensis*);
- Fan worms (*Sabella spallanzanii* and *Euchone* sp.);
- Bivalves (*Crassostrea gigas* (Pacific oyster), *Corbula gibba* and *Theora fragilis*);
- Crabs (*Carcinus maenas* (European shore crab) and *Pyromaia tuberculata* (spider crab));
- Macroalgae (*Undaria pinnatifida* (Japanese giant kelp) and *Codium fragile* ssp. *tormentosoides*; and
- The introduced New Zealand screw shell (*Maoricolpus roseus*), known to form extensive and dense beds on the sandy sea-floor in eastern Bass Strait spreading to the 80 m depth contour off eastern Victoria and NSW (Patil *et al.*, 2004).

Other introduced species tend to remain confined to sheltered coastal environments rather than open waters (Hayes *et al.*, 2005).

The Marine Pests Interactive Map (DAFF, 2016) indicates that the ports likely to be used by support vessels (Warrnambool, Apollo Bay or Port Fairy) do not currently harbour any marine pests.

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4.3.6 Threatened and Migratory Species

Table 4-4 presents the environmental values and sensitivities (threatened and migratory species) within the EMBA. These include all relevant Matters of National Environmental Significance (MNES) protected under the EPBC Act 1999 as identified in the PMST search for the EMBA. For each species identified, the extent of likely presence is provided.

The BIAs and habitats critical to the survival of a species are which overlap the EMBA are shown in Table 4-6. BIAs such as an aggregation, breeding, resting, nesting or feeding areas or known migratory routes for these species are shown in Figure 4-11 to Figure 4-27.

Note that terrestrial species (such as terrestrial mammals, reptiles and bird species) that appear in the EPBC Act protected matters search of the EMBA and do not have habitats along shorelines are not relevant to the activity impacts and risks have been excluded from Table 4-4.

Relevant conservation advices, recovery plans and management plans for marine fauna identified in the PMST for the EMBA are provided in Table 4-5.

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Table 4-4: EPBC Act threatened and migratory species potentially occurring within the EMBA

Scientific Name	Common Name	EPBC Act Threatened Status	Migratory	Presence in the Operational Area	Presence in the MDO EMBA	Presence in the LOWC EMBA	Website
FISH							
Sharks, Fish and Rays							
<i>Carcharodon carcharias</i>	White Shark	V	✓(M)	KO	FKO	BKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64470
<i>Centrophorus zeehaani</i>	Southern Dogfish	CD	-		LO	LO	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82679
<i>Galeorhinus galeus</i>	Eastern School Shark	CD	-	MO	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=68453
<i>Hoplostethus atlanticus</i>	Orange Roughy	CD	-		LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=68455
<i>Isurus oxyrinchus</i>	Shortfin Mako	-	✓(M)		LO	LO	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=79073
<i>Lamna nasus</i>	Porbeagle	-	✓(M)	LO	LO	LO	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=83288
<i>Protoroctes maraena</i>	Australian Grayling	V	-	LO	KO	KO	http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=26179
<i>Rhincodon typus</i>	Whale Shark	V	✓(M)		-	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=66680
<i>Seriolella brama</i>	Blue Warehou	CD	-	KO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=69374
<i>Thunnus maccoyii</i>	Southern Bluefin Tuna	CD	-	LO	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=69402
BIRDS							
<i>Actitis hypoleucos</i>	Common Sandpiper	-	✓(W)	KO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59309
<i>Anous stolidus</i>	Common Noddy	-	✓(M)	-	-	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=825
<i>Apus pacificus</i>	Fork-tailed Swift	-	✓(M)	LO	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=678
<i>Ardenna carneipes</i>	Flesh-footed Shearwater	-	✓(M)	FLO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82404
<i>Ardenna grisea</i>	Sooty Shearwater	-	✓(M)	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82651
<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	-	✓(M)	-	BKO	BKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82652
<i>Arenaria interpres</i>	Ruddy Turnstone	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=872
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	-	LO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1001
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	-	✓(W)	MO	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=874
<i>Calidris alba</i>	Sanderling	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=875
<i>Calidris canutus</i>	Red Knot	E	✓(W)	MO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=855
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE	✓(W)	MO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=856
<i>Calidris melanotos</i>	Pectoral Sandpiper	-	✓(W)	MO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=858

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Scientific Name	Common Name	EPBC Act Threatened Status	Migratory	Presence in the Operational Area	Presence in the MDO EMBA	Presence in the LOWC EMBA	Website
<i>Calidris ruficollis</i>	Red-necked Stint	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=860
<i>Calidris tenuirostris</i>	Great Knot	CE	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=862
<i>Charadrius bicinctus</i>	Double-banded Plover	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=895
<i>Charadrius leschenaultii</i>	Greater Sand Plover	V	✓(W)	-	LO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=877
<i>Charadrius mongolus</i>	Lesser Sand Plover	E	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=879
<i>Diomedea antipodensis</i>	Antipodean Albatross	V	✓(M)	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64458
<i>Diomedea antipodensis gibsoni</i>	Gibson's Albatross	V	-	-	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82270
<i>Diomedea epomophora</i>	Southern Royal Albatross	V	✓(M)	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=89221
<i>Diomedea exulans</i>	Wandering Albatross	V	✓(M)	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=89223
<i>Diomedea sanfordi</i>	Northern Royal Albatross	E	✓(M)	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64456
<i>Eudyptula minor</i>	Little Penguin	-	-	BKO	BKO	BKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1085
<i>Fregetta grallaria</i>	White-bellied Storm-Petrel	V	-	-	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64438
<i>Gallinago hardwickii</i>	Latham's Snipe	-	✓(W)	LO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=863
<i>Gallinago megala</i>	Swinhoe's Snipe	-	✓(W)	-	RLO	RLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=864
<i>Gallinago stenura</i>	Pin-tailed Snipe	-	✓(W)	-	RLO	RLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=841
<i>Halobaena caerulea</i>	Blue Petrel	V	-	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1059
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=842
<i>Limosa lapponica</i>	Bar-tailed Godwit	-	✓(W)	LO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=844
<i>Limosa lapponica baueri</i>	Nunivak Bar-tailed Godwit	V	-	MO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=86380
<i>Limosa limosa</i>	Black-tailed Godwit	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=845
<i>Macronectes giganteus</i>	Southern Giant Petrel	E	✓(M)	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1060
<i>Macronectes halli</i>	Northern Giant Petrel	V	✓(M)	MO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1061
<i>Morus serrator</i>	Australasian Gannet	-	-	-	BKO	BKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1020
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	CE	-	MLO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=747

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Scientific Name	Common Name	EPBC Act Threatened Status	Migratory	Presence in the Operational Area	Presence in the MDO EMBA	Presence in the LOWC EMBA	Website
<i>Numenius madagascariensis</i>	Eastern Curlew	CE	✓(W)	MO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=847
<i>Numenius minutus</i>	Little Curlew	-	✓(W)	-	RLO	RLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=848
<i>Numenius phaeopus</i>	Whimbrel	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=849
<i>Pachyptila turtur</i>	Fairy Prion	-	-	KO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1066
<i>Pachyptila turtur subantarctica</i>	Fairy Prion (southern)	V	-	KO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64445
<i>Pandion haliaetus</i>	Osprey	-	✓(W)	-	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=952
<i>Pelecanoides urinatrix</i>	Common Diving-Petrel	-	-	-	BKO	BKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1018
<i>Phalacrocorax fuscescens</i>	Black-faced Cormorant	-	-	BKO	BKO	BKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59660
<i>Phalaropus lobatus</i>	Red-necked Phalarope	-	✓(W)	-	-	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=838
<i>Phoebastria fusca</i>	Sooty Albatross	V	✓(M)	LO	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1075
<i>Pluvialis fulva</i>	Pacific Golden Plover	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=25545
<i>Pluvialis squatarola</i>	Grey Plover	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=865
<i>Pterodroma leucoptera</i>	Gould's Petrel	E	-	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=26033
<i>Pterodroma mollis</i>	Soft-plumaged Petrel	V	-	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1036
<i>Rostratula australis</i>	Australian Painted Snipe	E	-	LO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=77037
<i>Sternula albifrons</i>	Little Tern	-	✓(M)	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82849
<i>Sternula nereis nereis</i>	Australian Fairy Tern	V	-	BLO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82950
<i>Thalassarche bulleri</i>	Buller's Albatross	V	✓(M)	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64460
<i>Thalassarche bulleri platei</i>	Northern Buller's Albatross	V	-	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=82273
<i>Thalassarche cauta</i>	Shy Albatross	E	✓(M)	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=89224
<i>Thalassarche carteri</i>	Indian Yellow-nosed Albatross	V	✓(M)	LO	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64464
<i>Thalassarche chrysostoma</i>	Grey-headed Albatross	E	✓(M)	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=66491
<i>Thalassarche impavida</i>	Campbell Albatross	V	✓(M)	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64459

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Scientific Name	Common Name	EPBC Act Threatened Status	Migratory	Presence in the Operational Area	Presence in the MDO EMBA	Presence in the LOWC EMBA	Website
<i>Thalassarche melanophris</i>	Black-browed Albatross	V	✓(M)	MO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=66472
<i>Thalassarche salvini</i>	Salvin's Albatross	V	✓(M)	FLO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64463
<i>Thalassarche steadi</i>	White-capped Albatross	V	✓(M)	FLO	FKO	FKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64462
<i>Thalasseus bergii</i>	Greater Crested Tern	-	✓(W)	-	BKO	BKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=83000
<i>Thinornis cucullatus</i>	Eastern Hooded Plover	V	-	MO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=90381
<i>Tringa brevipes</i>	Grey-tailed Tattler	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=851
<i>Tringa incana</i>	Wandering Tattler	-	✓(W)	-	-	FKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=831
<i>Tringa nebularia</i>	Common Greenshank	-	✓(W)	LO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=832
<i>Tringa stagnatilis</i>	Marsh Sandpiper	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=833
<i>Xenus cinereus</i>	Terek Sandpiper	-	✓(W)	-	RKO	RKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59300
MARINE REPTILES							
<i>Caretta caretta</i>	Loggerhead Turtle	E	✓(M)	BLO	FKO	FKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1763
<i>Chelonia mydas</i>	Green Turtle	V	✓(M)	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1765
<i>Dermochelys coriacea</i>	Leatherback Turtle	E	✓(M)	BLO	FKO	FKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1768
MARINE MAMMALS							
<i>Balaenoptera acutorostrata</i>	Minke Whale	-	-	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=33
<i>Balaenoptera bonaerensis</i>	Antarctic Minke Whale	-	✓(M)	-	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=67812
<i>Balaenoptera borealis</i>	Sei Whale	V	✓(M)	FLO	FKO	FKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=34
<i>Balaenoptera musculus</i>	Blue Whale	E	✓(M)	FKO	FKO	FKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=36
<i>Balaenoptera physalus</i>	Fin Whale	V	✓(M)	FLO	FKO	FKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=37
<i>Berardius arnuxii</i>	Arnoux's Beaked Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=70
<i>Caperea marginate</i>	Pygmy Right Whale	-	✓(M)	FMO	FLO	FLO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=39
<i>Delphinus delphis</i>	Common Dolphin	-	-	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=60
<i>Eubalaena australis</i>	Southern Right Whale	E	✓(M)	KO	BKO	BKO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=40
<i>Globicephala macrorhynchus</i>	Short-finned Pilot Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=62

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Scientific Name	Common Name	EPBC Act Threatened Status	Migratory	Presence in the Operational Area	Presence in the MDO EMBA	Presence in the LOWC EMBA	Website
<i>Globicephala melas</i>	Long-finned Pilot Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59282
<i>Grampus griseus</i>	Risso's Dolphin	-	-	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64
<i>Kogia breviceps</i>	Pygmy Sperm Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=57
<i>Kogia sima</i>	Dwarf Sperm Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=85043
<i>Lagenorhynchus obscurus</i>	Dusky Dolphin	-	✓(M)	MO	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=43
<i>Lissodelphis peronii</i>	Southern Right Whale Dolphin	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=44
<i>Megaptera novaeangliae</i>	Humpback Whale	-	✓(M)	LO	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=38
<i>Mesoplodon bowdoini</i>	Andrew's Beaked Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=73
<i>Mesoplodon densirostris</i>	Blainville's Beaked Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=74
<i>Mesoplodon grayi</i>	Gray's Beaked Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=75
<i>Mesoplodon hectori</i>	Hector's Beaked Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=76
<i>Mesoplodon layardii</i>	Strap-toothed Beaked Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=25556
<i>Mesoplodon mirus</i>	True's Beaked Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=54
<i>Neophoca cinerea</i>	Australian Sea-lion	E	-	-	KO	KO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=22
<i>Orcinus orca</i>	Killer Whale	-	✓(M)	LO	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=46
<i>Physeter macrocephalus</i>	Sperm Whale	-	✓(M)	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=59
<i>Pseudorca crassidens</i>	False Killer Whale	-	-	-	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=48
<i>Tursiops aduncus</i>	Indian Ocean Bottlenose Dolphin	-	-	LO	LO	LO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=68418
<i>Tursiops truncatus s. str.</i>	Bottlenose Dolphin	-	-	MO	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=68417
<i>Ziphius cavirostris</i>	Cuvier's Beaked Whale	-	-	-	MO	MO	https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=56
Threatened Species:						Type of Presence:	
V – Vulnerable						MO - Species or species habitat that may occur within the area	

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Scientific Name	Common Name	EPBC Act Threatened Status	Migratory	Presence in the Operational Area	Presence in the MDO EMBA	Presence in the LOWC EMBA	Website
E – Endangered CE – Critically Endangered CD – Conservation Dependent <u>Migratory Status</u> (W) – Wetland (M) – Marine (T) – Terrestrial						LO - Species or species habitat likely to occur within area KO - Species or species habitat known to occur within area FMO - Foraging, feeding or related behaviour may occur within the area FLO - Foraging, feeding or related behaviour likely to occur within area FKO - Foraging, feeding or related behaviour known to occur within area BMO - Breeding may occur within the area BLO - Breeding likely to occur within the area BKO - Breeding known to occur within the area RMO - Roosting may occur within the area RLO - Roosting likely to occur within the area RKO - Roosting known to occur within the area	

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Listed Species Recovery Plans, Conservation Advice and Threat Abatement Plans

Woodside considered recent updates to Recovery Plans, Conservation Management Plans, Threat Abatement Plans or approved Conservation Advice in place for EPBC Act-listed threatened species that may potentially occur or utilise habitat within the EMBA (Table 4-5).

Recovery Plans set out the research and management actions necessary to stop the decline of, and support the recovery of listed threatened species. In addition, Threat Abatement Plans provide for the research, management, and any other actions necessary to reduce the impact of a listed key threatening process on native species and ecological communities. The Minister decides whether a threat abatement plan is required for key threatening processes listed under Section 183 of the EPBC Act. Table 4-5 provides information on the specific requirements of the relevant conservation advice, species recovery plans and threat abatement plans that is applicable to the petroleum activity, and demonstrates how current management requirements have been taken into account during the preparation of the EP. Through the implementation of relevant control measures, performance outcomes and performance standards, potential risks and impacts of the petroleum activity are managed to ALARP and acceptable levels.

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Table 4-5: Summary of relevant species recovery plans, approved conservation plans and threat abatement plans

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
All Vertebrate Fauna				
All vertebrate fauna	Threat Abatement Plan for the impacts of marine debris on vertebrate wildlife of Australia's coasts and oceans (DoEE, 2018)	<p>There are four main objectives:</p> <ul style="list-style-type: none"> Contribute to the long-term prevention of the incidence of harmful marine debris Remove existing harmful marine debris from the marine environment Mitigate the impacts of harmful marine debris on marine species and ecological communities Monitor the quantities, origins and impacts of marine debris and assess the effectiveness of management arrangements over time for the strategic reduction of debris. 	Ship-sourced marine debris as a risk to vertebrate marine life through entanglement or ingestion	No explicit management actions for non-fisheries related industries (note that management actions in the plan relate largely to management of fishing waste (for example 'ghost' gear), and State and Commonwealth management through regulation.
Marine Mammals				
Sei Whale	Conservation Advice for the Sei Whale (TSSC, 2015a)	<p>Determine population abundance, trends and population structure for sei whales, and establish a long-term monitoring program in Australian waters.</p> <p>Describe the spatial and temporal distribution of Sei Whales and further define biologically important areas (feeding and breeding), and migratory routes within Australian and Antarctic waters.</p>	Noise interference	Once the spatial and temporal distribution (including biologically important areas) of Fin Whales is further defined, assess the impacts of increasing anthropogenic noise (including seismic surveys, port expansion, and coastal development).
			Habitat degradation including pollution	No explicit relevant management actions; habitat degradation and pollution identified as threats.
			Vessel strike	<p>Minimising vessel collisions:</p> <ul style="list-style-type: none"> Develop a national vessel strike strategy that investigates the risk of vessel strikes on Sei Whales and also identifies potential mitigation measures. Ensure all vessel strike incidents are reported in the National Vessel Strike Database.
Blue Whale	<p>Conservation Management Plan for the Blue Whale 2015-2025 (DoE, 2015a)</p> <p>Guidance on key terms within the Blue Whale Conservation Management Plan (DAWE, 2021b)</p>	The long-term recovery objective is to minimise anthropogenic threats to allow the conservation status of the Blue Whale to improve so that it can be removed from the threatened species list under the EPBC Act.	Noise interference	Assess and address anthropogenic noise: shipping, industrial and seismic noise.
			Habitat modification	No explicit relevant management actions; habitat modification identified as a threat.
			Vessel disturbance	<p>Minimise vessel collisions:</p> <ul style="list-style-type: none"> Develop a national vessel strike strategy that investigates the risk of vessel strike on blue whales and also identifies potential mitigation measures. Ensure all vessel strike incidents are reported in the National Ship Strike Database. Ensure the risk of vessel strikes on blue whales is considered when assessing actions that increase vessel traffic in areas where blue whales occur and, if required, appropriate mitigation measures are implemented.
			Marine debris	No explicit relevant management actions; marine debris identified as a threat.
Fin Whale	Approved Conservation Advice for the Fin Whale (TSSC, 2015b)	<p>Determine population abundance, trends and population structure for fin whales, and establish a long-term monitoring program in Australian waters.</p> <p>Describe the spatial and temporal distribution of Fin Whales and further define biologically important areas (feeding and breeding), and migratory routes within Australian and Antarctic waters.</p>	Noise interference	Once the spatial and temporal distribution (including biologically important areas) of Fin Whales is further defined, assess the impacts of increasing anthropogenic noise (including seismic surveys, port expansion, and coastal development).
			Habitat degradation including pollution	No explicit relevant management actions; habitat degradation and pollution identified as threats.

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Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
			Vessel strike	Develop a national vessel strike strategy that investigates the risk of vessel strikes on Fin Whales and identifies potential mitigation measures. Ensure all vessel strike incidents are reported in the National Vessel Strike Database.
Southern Right Whale	Conservation Management Plan for the Southern Right Whale 2011-2021 (DSEWPaC, 2012a)	Long term recovery objective: <ul style="list-style-type: none"> To minimise anthropogenic threats to allow the conservation status of the southern right whale to improve so that it can be removed from the threatened species list under the EPBC Act Interim Recovery Objective 5: <ul style="list-style-type: none"> Anthropogenic threats are demonstrably minimised 	Noise interference	Action Area A.2: Improve the understanding of what impact anthropogenic noise may have on southern right whale populations by: <ul style="list-style-type: none"> Assessing anthropogenic noise in key calving areas Assessing responses of southern right whales to anthropogenic noise If necessary, developing further mitigation measures for noise impacts.
			Habitat modification	No explicit relevant management actions; habitat modification identified as a threat.
			Marine debris / entanglement	No explicit relevant management actions; entanglement in marine debris identified as a threat.
			Vessel disturbance / strike	No explicit relevant management actions; entanglement in marine debris identified as a threat.
	Draft National Recovery Plan for the Southern Right Whale (<i>Eubalaena australis</i>) (DCCEEW, 2022a)	Long-term Vision: <ul style="list-style-type: none"> The long-term vision for the recovery of the Australian Southern Right Whale is that the population has increased in size to a level that the conservation status has improved, and the species no longer qualifies for listing as threatened under any of the EPBC Act listing criteria. Interim Objective 2: <ul style="list-style-type: none"> Anthropogenic threats are managed consistent with ecologically sustainable development principles and do not impede recovery of Southern Right Whales. 	Anthropogenic climate change and climate variability	Action Area A3: Understand impacts of climate variability and anthropogenic climate change on the biology of Southern Right Whales in Australian waters. In particular: <ul style="list-style-type: none"> Action 1: Continue to meet Australia's international commitments to address causes of climate change, including greenhouse gas emissions.
			Entanglement (marine debris)	No explicit relevant management actions; marine debris identified as a threat.
			Habitat degradation	Action Area A2: Address habitat degradation impacts from coastal and offshore marine infrastructure developments within the species' range. In particular: <ul style="list-style-type: none"> Action 1: Coastal and offshore development actions are assessed according to principles of ecological sustainable development to ensure the risk of injury and/or disturbance to Southern Right Whales is minimised. Action 2: Baseline surveys and monitoring undertaken during activity implementation are conducted in accordance with best practice standards and guidelines to ensure standardised datasets are obtained and suitable to inform environmental management decision making that can reduce the risk of threats to Southern Right Whales. Action 3: Current information on species' occurrence, particularly in HCTS, BIAs, and historic high use areas, are used to inform planning, assessment, and decision-making on marine infrastructure development actions.
			Anthropogenic underwater noise (industrial noise, vessel noise, and aircraft noise)	Action Area A5: Assess and address impacts to Southern Right Whales from anthropogenic underwater noise. In particular: <ul style="list-style-type: none"> Action 2: Actions within and adjacent to Southern Right Whale BIAs and HCTS should demonstrate that it does not prevent any Southern Right Whale

Description of Environment for the Minerva Field

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
				<p>from utilising the area or cause injury (TTS and PTS) and/or disturbance.</p> <ul style="list-style-type: none"> Action 3: Ensure environmental assessments associated with underwater noise generating activities include consideration of national policy (e.g., EPBC Act Policy Statement 2.1) and guidelines related to managing anthropogenic underwater noise and implement appropriate mitigation measures to reduce risks to Southern Right Whales to the lowest possible level.
			Collision (vessel strike)	<p>Action Area 6: Manage, minimise, and mitigate the threat of vessel strike within Southern Right Whale BIAs and HCTS. In particular:</p> <ul style="list-style-type: none"> Action 1: Assess risk of vessel strike to Southern Right Whales in BIAs. Action 5: Ensure all vessel strike incidents are reported in the National Ship Strike Database managed through the Australian Marine Mammal Centre, Australian Antarctic Division.
			Pollution (acute chemical discharge)	<p>No explicit relevant management actions; pollution (acute chemical discharge) identified as a threat.</p>
Australian Sea Lion	Recovery Plan for the Australian Sea Lion (DSEWPaC, 2013a)	<p>The overarching objective of this recovery plan is to halt the decline and assist the recovery of the Australian sea lion throughout its range in Australian waters by increasing the total population size while maintaining the number and distribution of breeding colonies with a view to:</p> <ul style="list-style-type: none"> Improving the population status leading to the future removal of the Australian sea lion from the threatened species list of the EPBC Act Ensuring that anthropogenic activities do not hinder recovery in the near future or impact on the conservation status of the species in the future. 	Habitat degradation	<p>No explicit management actions; habitat degradation recognised as a threat.</p>
			Pollution and oil spills	<p>Implement jurisdictional oil spill response strategies as required.</p>
			Disease	<p>No explicit management actions; disease and pathogens recognised as a threat.</p>
			Marine debris	<p>Identify the sources of marine debris having an impact on Australian sea lion populations. Assess the impacts of marine debris on Australian sea lion populations. Develop and implement measures to mitigate the impacts of marine debris on Australian sea lion populations, noting the linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.</p>
			Vessel Strike	<p>Collect data on direct killings and confirmed vessel strikes.</p>
	Approved Conservation Advice on <i>Neophoca cinerea</i> Australian Sea Lion (TSSC, 2020a)	<p>Primary conservation actions:</p> <ul style="list-style-type: none"> Mitigate the impacts of marine debris on Australian Sea Lions 	Marine debris	<p>Assess the impacts of marine debris on Australian Sea Lion populations and identify the sources of marine debris which have an impact. Develop and implement measures to mitigate the impacts of marine debris on the species (including reducing the amount of these marine debris entering the oceans), noting linkages with the Threat Abatement Plan for the Impact of Marine Debris on Vertebrate Marine Life.</p>
			Disease and Parasites	<p>Improve human wastewater management to minimise dispersal of bacteria, parasites and pollutants into the marine environment.</p>
			Habitat degradation and pollution	<p>Require all vessels to have oil spill mitigation measures in place, and implement jurisdictional oil spill response strategies as required.</p>
			Noise interference	<p>Monitor and mitigate impacts (including cumulative impacts) of human interactions on Australian Sea Lion colonies.</p>

Description of Environment for the Minerva Field

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
				Control access to breeding colonies to minimise the impacts of disturbance on Australian Sea Lions.
Marine Reptiles				
EPBC Act listed marine turtles in the EMBAAs: <ul style="list-style-type: none"> • Loggerhead Turtle • Green Turtle • Leatherback Turtle 	National Light Pollution Guidelines for Wildlife, including marine turtles, seabirds and migratory shorebirds (DoEE, 2020)	Lighting objectives will need to consider the regulatory requirements and Australian standards relevant to the activity, location and wildlife present. Objectives should be described in terms of specific locations and times for which artificial light is necessary. Consideration should be given to whether colour differentiation is required and if some areas should remain dark – either to contrast with lit areas or to avoid light spill. Where relevant, wildlife requirements should form part of the lighting objectives. A lighting installation will be deemed a success if it meets the lighting objectives (including wildlife needs) and areas of interest can be seen by humans clearly, easily, safely and without discomfort.	Light pollution	Best practice lighting design incorporates the following design principles: <ul style="list-style-type: none"> • Start with natural darkness and only add light for specific purposes. • Use adaptive light controls to manage light timing, intensity and colour. • Light only the object or area intended – keep lights close to the ground, directed and shielded to avoid light spill. • Use the lowest intensity lighting appropriate for the task. • Use non-reflective, dark-coloured surfaces. • Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.
	Recovery Plan for Marine Turtles (DoEE, 2017)	Long-term recovery objective: <ul style="list-style-type: none"> • Minimise anthropogenic threats to allow for the conservation status of marine turtles to improve so that they can be removed from the EPBC Act threatened species list. Interim objective 3: <ul style="list-style-type: none"> • Anthropogenic threats are demonstrably minimised. 	Marine debris	Reduce the impacts from marine debris: <ul style="list-style-type: none"> • Support the implementation of the EPBC Act Threat Abatement Plan for the impacts of marine debris on vertebrate marine life.
			Chemical and Terrestrial Discharge	Minimise chemical and terrestrial discharge.
			Vessel disturbance	Vessel interactions identified as a threat; no specific management actions in relation to vessels prescribed in the plan.
			Light pollution	Minimise light pollution: <ul style="list-style-type: none"> • Artificial light within or adjacent to habitat critical to the survival of marine turtles will be managed such that marine turtles are not displaced from these habitats. • Develop and implement best practice light management guidelines for existing and future developments adjacent to marine turtle nesting beaches. • Identify the cumulative impact on turtles from multiple sources of onshore and offshore light pollution.
			Noise interference	Assess and address anthropogenic noise: <ul style="list-style-type: none"> • Understand the impacts of anthropogenic noise on marine turtle behaviour and biology.
			Habitat modification	Manage anthropogenic activities to ensure marine turtles are not displaced from identified habitat critical to the survival. Manage anthropogenic activities in Biologically Important Areas to ensure that biologically important behaviour can continue.
			Disease and pathogens	No explicit management actions; disease and pathogens recognised as a threat.
Leatherback Turtle	Approved Conservation Advice for <i>Dermochelys coriacea</i> (Leatherback Turtle) (DEWHA, 2008)	No explicit relevant objectives.	Boat strike	No explicit relevant management actions; vessel strikes identified as a threat.
			Habitat degradation (changes to breeding sites and degradation to foraging areas)	Identify and protect migratory corridors between nesting beaches and common foraging areas to facilitate colonization.

Description of Environment for the Minerva Field

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
			Marine debris	No explicit relevant management actions; marine debris identified as a threat.
Fish, Sharks and Rays				
Whale Shark	Approved Conservation Advice for the Whale Shark (<i>Rhincodon typus</i>) (DoE, 2015b)	To maintain existing levels of protection for the whale shark in Australia while working to increase the level of protection afforded to the whale shark within the Indian Ocean and Southeast Asian region to enable population growth so that the species can be removed from the threatened species list of the EPBC Act.	Marine debris Habitat disruption Boat strike	Minimise offshore developments and transit time of large vessels in areas close to marine features likely to correlate with Whale Shark aggregations along the northward migration route that follows the northern Western Australian coastline along the 200 m isobath (as set out in the Conservation Values Atlas, DoE, 2014).
White Shark	National Recovery Plan for the White Shark (<i>Carcharodon carcharias</i>) (DSEWPaC, 2013b)	The overarching objective of this recovery plan is to assist the recovery of the white shark in the wild throughout its range in Australian waters with a view to: <ul style="list-style-type: none"> Improving the population status leading to future removal of the white shark from the threatened species list of the EPBC Act Ensuring that anthropogenic activities do not hinder recovery in the near future, or impact on the conservation status of the species in the future. The specific objectives of the recovery plan (relevant to industry) are: <ul style="list-style-type: none"> Objective 7: Continue to identify and protect habitat critical to the survival of the white shark and minimise the impact of threatening processes within these areas. 	Habitat modification	No explicit relevant management actions; habitat modification and climate change identified as threats.
Shorebirds				
Seabirds and migratory shorebirds	National Light Pollution Guidelines for Wildlife, including marine turtles, seabirds and migratory shorebirds (DoEE, 2020)	Lighting objectives will need to consider the regulatory requirements and Australian standards relevant to the activity, location and wildlife present. <p>Objectives should be described in terms of specific locations and times for which artificial light is necessary. Consideration should be given to whether colour differentiation is required and if some areas should remain dark – either to contrast with lit areas or to avoid light spill. Where relevant, wildlife requirements should form part of the lighting objectives.</p> <p>A lighting installation will be deemed a success if it meets the lighting objectives (including wildlife needs) and areas of interest can be seen by humans clearly, easily, safely and without discomfort.</p>	Light pollution	Best practice lighting design incorporates the following design principles: <ul style="list-style-type: none"> Start with natural darkness and only add light for specific purposes. Use adaptive light controls to manage light timing, intensity and colour. Light only the object or area intended – keep lights close to the ground, directed and shielded to avoid light spill. Use the lowest intensity lighting appropriate for the task. Use non-reflective, dark-coloured surfaces. Use lights with reduced or filtered blue, violet and ultra-violet wavelengths.
All Migratory Shorebirds	Wildlife Conservation Plan for Migratory Shorebirds (CoA, 2015)	Anthropogenic threats to migratory shorebirds in Australia are minimised or, where possible, eliminated.	Habitat degradation and modification	No explicit relevant management actions; identified as a threat.
			Anthropogenic disturbance	Investigate the significance of cumulative impacts on migratory shorebird habitat and populations in Australia. <p>Ensure all areas important to migratory shorebirds in Australia continue to be considered in development assessment processes (specifically for coastal developments).</p>
Australasian Bittern	Approved Conservation Advice for <i>Botaurus poeciloptilus</i> (Australasian bittern) (TSSC, 2019)	The objective of this conservation advice is to provide guidance for actions that will expand the range and the number of Australasian Bitterns in Australia.	Habitat loss, disturbance and modifications	No explicit relevant management actions; habitat loss and degradation recognised as a threat.

Description of Environment for the Minerva Field

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
Australian Painted Snipe	Approved Conservation Advice for Australian painted snipe (<i>Rostratula australis</i>) (DSEWPaC, 2013c)	No explicit relevant objectives	Habitat loss, disturbance and modification	Habitat recovery actions are a priority.
Bar-Tailed Godwit (baueri)	Approved Conservation Advice for the bar-tailed godwit (western Alaskan) (<i>Limosa lapponica baueri</i>) (TSSC, 2016)	No explicit relevant objectives	Habitat loss and degradation from pollution	Protect important habitat in Australia.
Curlew Sandpiper	Approved Conservation Advice for the curlew sandpiper (<i>Calidris ferruginea</i>) (DoE, 2015c)	Australian Objective: <ul style="list-style-type: none"> Reduce disturbance at key roosting and feeding sites 	Habitat loss and degradation from pollution	No explicit relevant management actions; oil pollution recognised as a threat.
Eastern Curlew	Approved Conservation Advice for eastern curlew (<i>Numenius madagascariensis</i>) (TSSC, 2015c)	Australian objectives: <ul style="list-style-type: none"> Achieve a stable or increasing population. Maintain and enhance important habitat. Reduce disturbance at key roosting and feeding sites. 	Habitat loss and degradation from pollution	No explicit relevant management actions; habitat loss and degradation recognised as a threat.
Eastern Hooded Plover	Conservation Advice <i>Thinornis rubricollis rubricollis</i> hooded plover (eastern) (DoE, 2014)	Relevant Primary Conservation Objectives: <ul style="list-style-type: none"> Maintain, enhance and restore habitat, and integrate the subspecies needs into coastal planning 	Oil spills	Prepare oil spill response plans to ensure effective rehabilitation of oiled birds.
Great Knot	Approved Conservation Advice for the great knot (<i>Calidris tenuirostris</i>) (TSSC, 2016a)	No explicit relevant objectives	Habitat loss and degradation from pollution	Identifies research priorities and the need for actions to prevent destruction of key breeding and migratory staging sites.
			Disease	No explicit relevant management actions; disease recognised as a threat.
Greater Sand Plover	Approved Conservation Advice for the greater sand plover (<i>Charadrius leschenaultii</i>) (TSSC, 2016b)	No explicit relevant objectives	Habitat loss and degradation from pollution	Identifies research priorities and the need for actions to prevent destruction of key breeding and migratory staging sites. Protect important habitat in Australia.
			Introduced species / disease	No explicit relevant management actions; introduced species and disease recognised as threats.
Lesser Sand Plover	Approved Conservation Advice <i>Charadrius mongolus</i> (Lesser sand plover) (TSSC, 2016c)	No explicit relevant objectives	Habitat loss and degradation from pollution	Outlines research and survey priorities and recommends habitat restoration / maintenance.
			Introduced species / disease	No explicit relevant management actions; introduced species and disease recognised as threats.
Red Knot	Approved Conservation Advice for the red knot (<i>Calidris canutus</i>) (TSSC, 2016d)	No explicit relevant objectives	Habitat loss and degradation Pollution/ contamination impacts	Protect important habitat in Australia. Maintain and improve protection of roosting and feeding sites in Australia
Birds – Seabirds				
All Seabirds	Draft Wildlife Conservation Plan for Seabirds (CoA, 2019)	Seabirds and their habitats are protected and managed in Australia.	Habitat degradation and modification	No explicit relevant management actions; identified as a threat.
			Anthropogenic disturbance	Ensure all areas of important habitat for seabirds are considered in the development assessment process. Manage the effects of anthropogenic disturbance to seabird breeding and roosting areas.

Description of Environment for the Minerva Field

Species or Group	Relevant Plan/Conservation Advice	Relevant Objectives	Threats and or Management Strategies Relevant to the Activity	Relevant Conservation Actions
			Pollution (marine debris, light, water)	Enhance contingency plans to prevent and/or respond to environmental emergencies that have an impact on seabirds and their habitats.
			Invasive species	Ensure seabirds are protected from the adverse effects of invasive species.
Relevant EPBC Act-listed seabirds: <ul style="list-style-type: none"> • Antipodean Albatross • Black-Browed Albatross • Buller's Albatross • Campbell Albatross • Gibson's Albatross • Indian Yellow-Nosed Albatross • Northern Buller's Albatross • Northern Giant Petrel • Northern Royal Albatross • Soft-Plumaged Petrel • Southern Giant Petrel • Shy Albatross • Sooty Albatross • Southern Royal Albatross • Wandering Albatross • White-Capped Albatross 	Background Paper, Population Status and Threats to Albatrosses and Giant Petrels Listed as Threatened under the EPBC Act 1999 (DSEWPaC, 2011a) National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPaC, 2011)	Overall objective: <ul style="list-style-type: none"> • To ensure the long-term survival and recovery of albatross and giant petrel populations breeding and foraging in Australian jurisdiction by reducing or eliminating human related threats at sea and on land. Specific objectives: <ul style="list-style-type: none"> • Land-based threats to the survival and breeding success of albatrosses and giant petrels breeding within areas under Australian jurisdiction are quantified and reduced. • Marine-based threats to the survival and breeding success of albatrosses and giant petrels foraging in waters under Australian jurisdiction are quantified and reduced. 	Marine pollution	Where feasible, population monitoring programs also monitor, in a standardised manner, the incidence of oiled birds at the nest.
			Parasites and disease	No explicit management actions; parasites and disease recognised as a threat.
Australian Fairy Tern	Approved Conservation Advice for Australian fairy tern (<i>Sterna nereis nereis</i>) (DSEWPaC, 2011b)	No explicit relevant objectives.	Oil spills	Ensure appropriate oil spill contingency plans are in place for the subspecies' breeding sites that are vulnerable to oil spills.
Blue Petrel	Approved Conservation Advice for the blue petrel (<i>Halobaena caerulea</i>) (TSSC, 2015d)	No explicit relevant objectives.	Habitat loss, disturbance and modification	No explicit relevant management actions; habitat loss, disturbance and modification recognised as a threat.
Fairy Prion (southern)	Approved Conservation Advice for fairy prion (southern) (<i>Pachyptila turtur subantarctica</i>) (TSSC, 2015e)	No explicit relevant objectives.	Habitat loss, disturbance and modification	No explicit management actions; habitat loss, disturbance and modification recognised as a threat.
Grey-Headed Albatross	Approved Conservation Advice for <i>Thalassarche chrysostoma</i> (Grey-headed Albatross) (DEWHA, 2009)	No explicit relevant objectives.	Habitat loss, disturbance and modification	No explicit management actions; habitat loss, disturbance and modification recognised as a threat.
Shy Albatross	Approved Conservation Advice for <i>Thalassarche cauta</i> (Shy Albatross) (TSSC, 2020c)	Conservation Advice refers to the objectives set out in the National Recovery Plan for Threatened Albatrosses and Giant Petrels 2011-2016 (DSEWPaC 2011).	Marine debris (plastics)	No explicit management actions; marine debris recognised as a threat.
			Disease	No explicit management actions; disease recognised as a threat.
Soft-Plumaged Petrel	Approved Conservation Advice for the soft-plumaged petrel (<i>Pterodroma mollis</i>) (TSSC, 2015f)	No explicit relevant objectives.	Habitat loss, disturbance and modification	No explicit management actions; habitat loss, disturbance and modification recognised as a threat.

Description of Environment for the Minerva Field

Biologically Important Areas and Habitat Critical to the Survival of a Species

The Protected Matters Search Tool (PMST) identifies biologically important areas (BIAs) for some of the region's protected species. These are areas that are considered to be particularly important for the conservation of protected species and where aggregations of individuals display biologically important behaviour such as breeding, foraging, resting or migration. BIAs are not protected matters and should not be confused with 'critical habitat' as defined in the EPBC Act.

A review of the PMSTs identified BIAs for 17 protected species that intersect with the operational area, MDO spill EMBA and LOWC spill EMBA. The identified protected species and the relevant BIAs are shown in Table 4-6.

Table 4-6: BIAs within the Operational Area and EMBA

Species	BIA Type	Operational Area	MDO EMBA	LOWC EMBA	Closest approx. distance to operational area (km)
Whales					
Blue whale and pygmy blue whale (Figure 4-11)	Distribution	ü	ü	ü	Within
	Foraging (annual high use area)	ü	ü	ü	Within
Southern right whale (Figure 4-12)	Aggregation	-	ü	ü	25 km
	Known Core Range	ü	ü	ü	Within
	Migration and Resting on Migration	ü	ü	ü	Within
	Reproduction	ü	ü	ü	Within
Sharks					
White shark (Figure 4-13)	Breeding (nursing area)	-	-	ü	302 km
	Distribution	ü	ü	ü	Within
	Foraging	-	ü	ü	58 km
Seabirds					
Antipodean Albatross (Figure 4-14)	Foraging	ü	ü	ü	Within
Australasian Gannet (Figure 4-15)	Aggregation	-	ü	ü	117 km
	Foraging	-	ü	ü	83 km
Black-browed Albatross (Figure 4-16)	Foraging	ü	ü	ü	Within
Black-faced Cormorant (Figure 4-17)	Foraging	-	-	ü	116 km
Buller's Albatross (Figure 4-18)	Foraging	ü	ü	ü	Within
Campbell Albatross (Figure 4-19)	Foraging	ü	ü	ü	Within
Common Diving Petrel (Figure 4-20)	Breeding	-	ü	ü	90 km
	Foraging	ü	ü	ü	Within

Description of Environment for the Minerva Field

Species	BIA Type	Operational Area	MDO EMBA	LOWC EMBA	Closest approx. distance to operational area (km)
Indian Yellow-nosed Albatross (Figure 4-21)	Foraging	ü	ü	ü	Within
Little Penguin (Figure 4-22)	Breeding	-	ü	ü	190 km
	Foraging	-	ü	ü	120 km
Short-tailed Shearwater (Figure 4-23)	Breeding	-	ü	ü	192 km
	Foraging	-	ü	ü	20 km
Shy Albatross (Figure 4-24)	Foraging	ü	ü	ü	Within
Wandering Albatross (Figure 4-25)	Foraging	ü	ü	ü	Within
Wedge-tailed shearwater (Figure 4-26)	Breeding	-	ü	ü	590 km
	Foraging	ü	ü	ü	Within
White-faced Storm Petrel (Figure 4-27)	Foraging	-	ü	ü	56 km

¹ Where multiple BIAs overlap with the wider EMBA, the distance shown is the distance of the closest BIA to the operational area.

Description of Environment for the Minerva Field

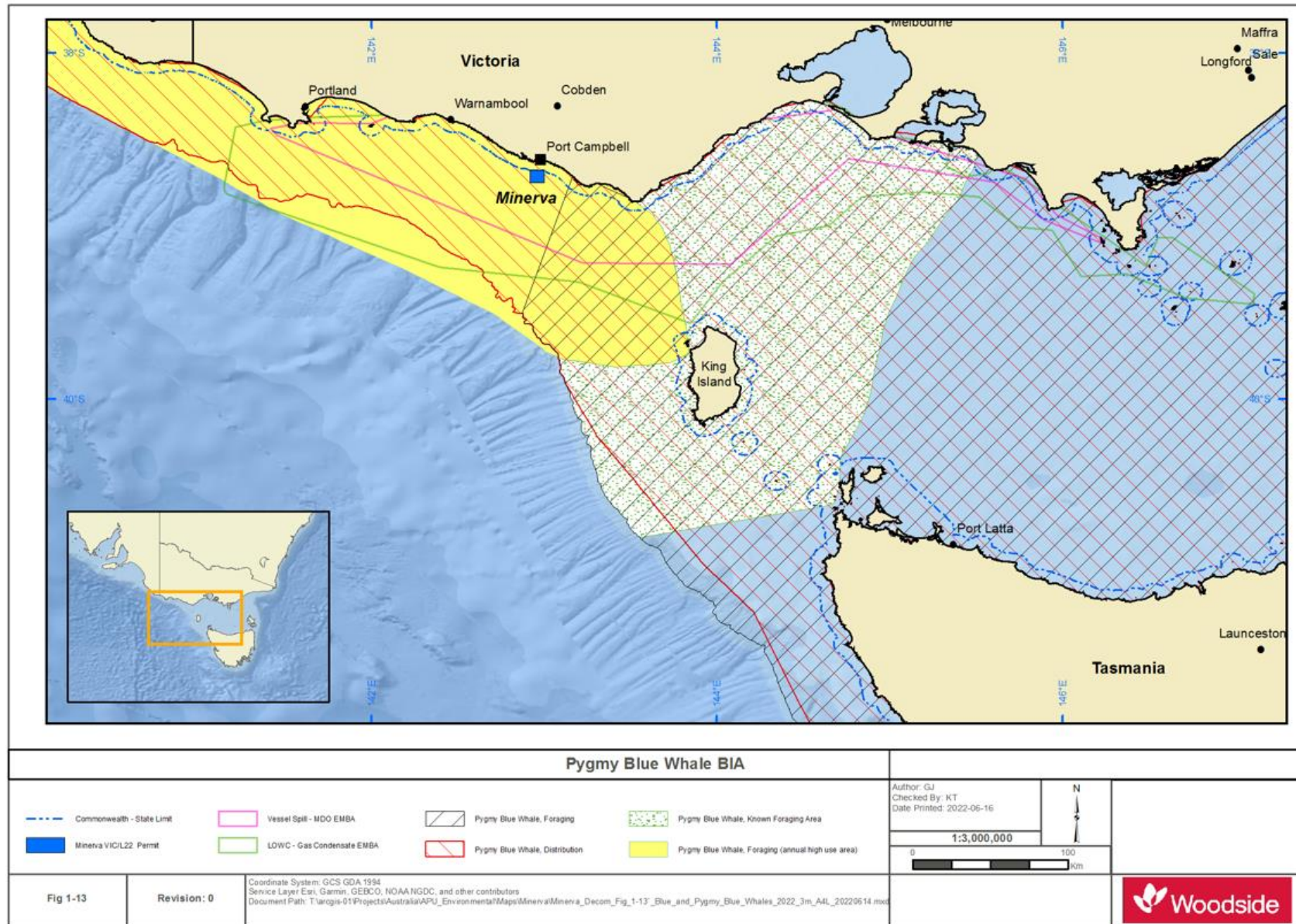


Figure 4-11: BIAs for Pygmy Blue Whales

Description of Environment for the Minerva Field

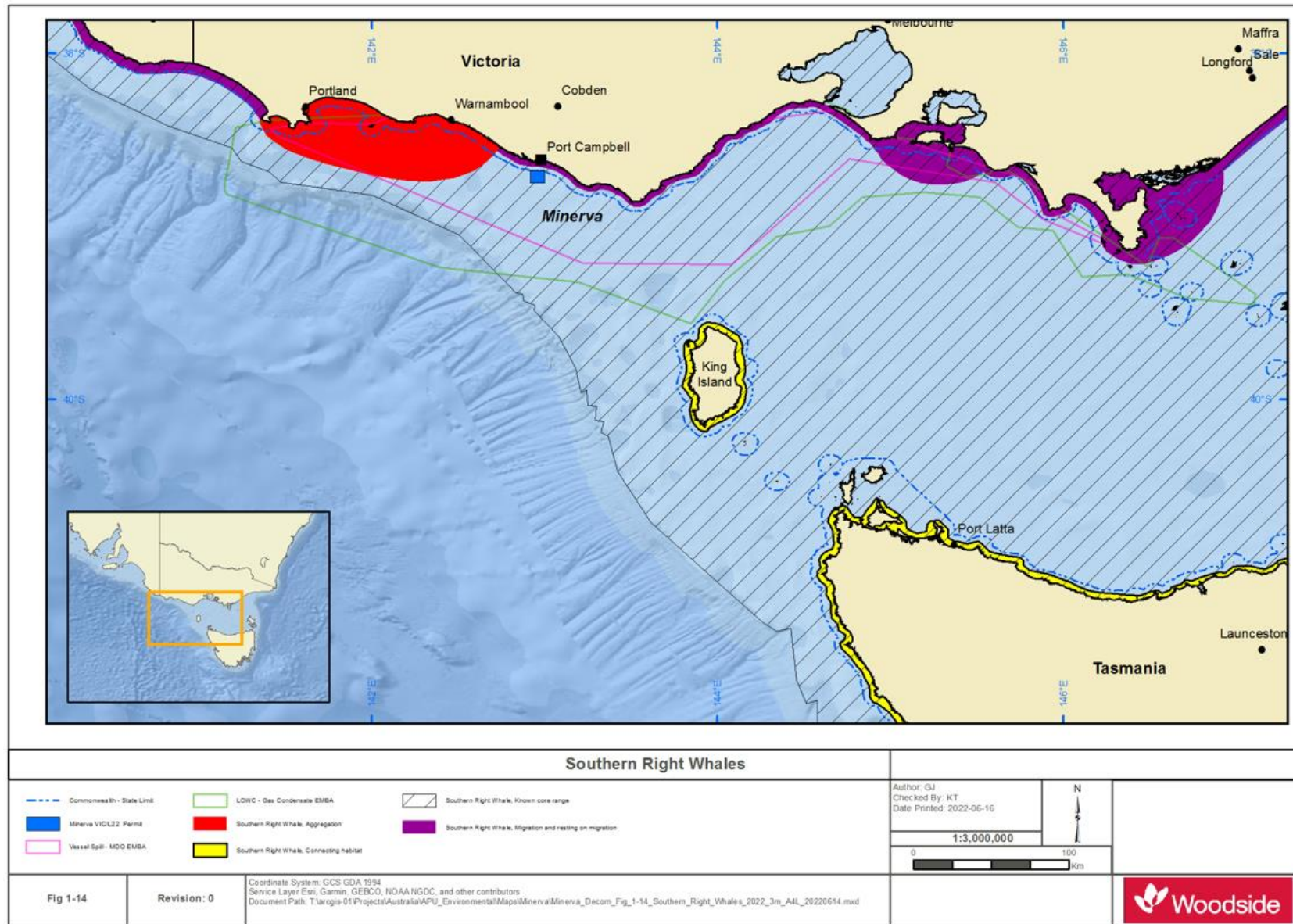


Figure 4-12: BIAs for Southern Right Whales

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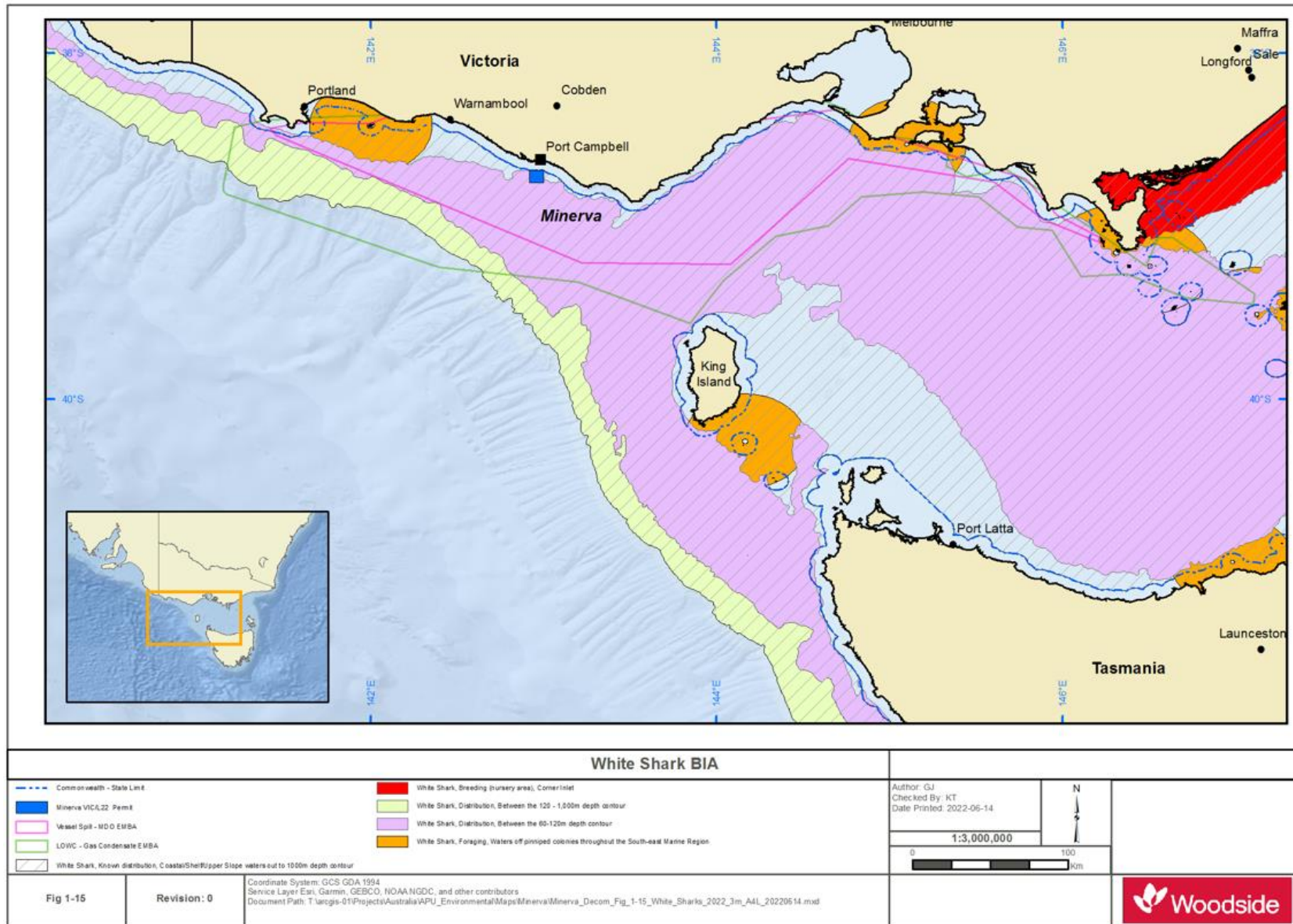


Figure 4-13: BIAs for White Sharks

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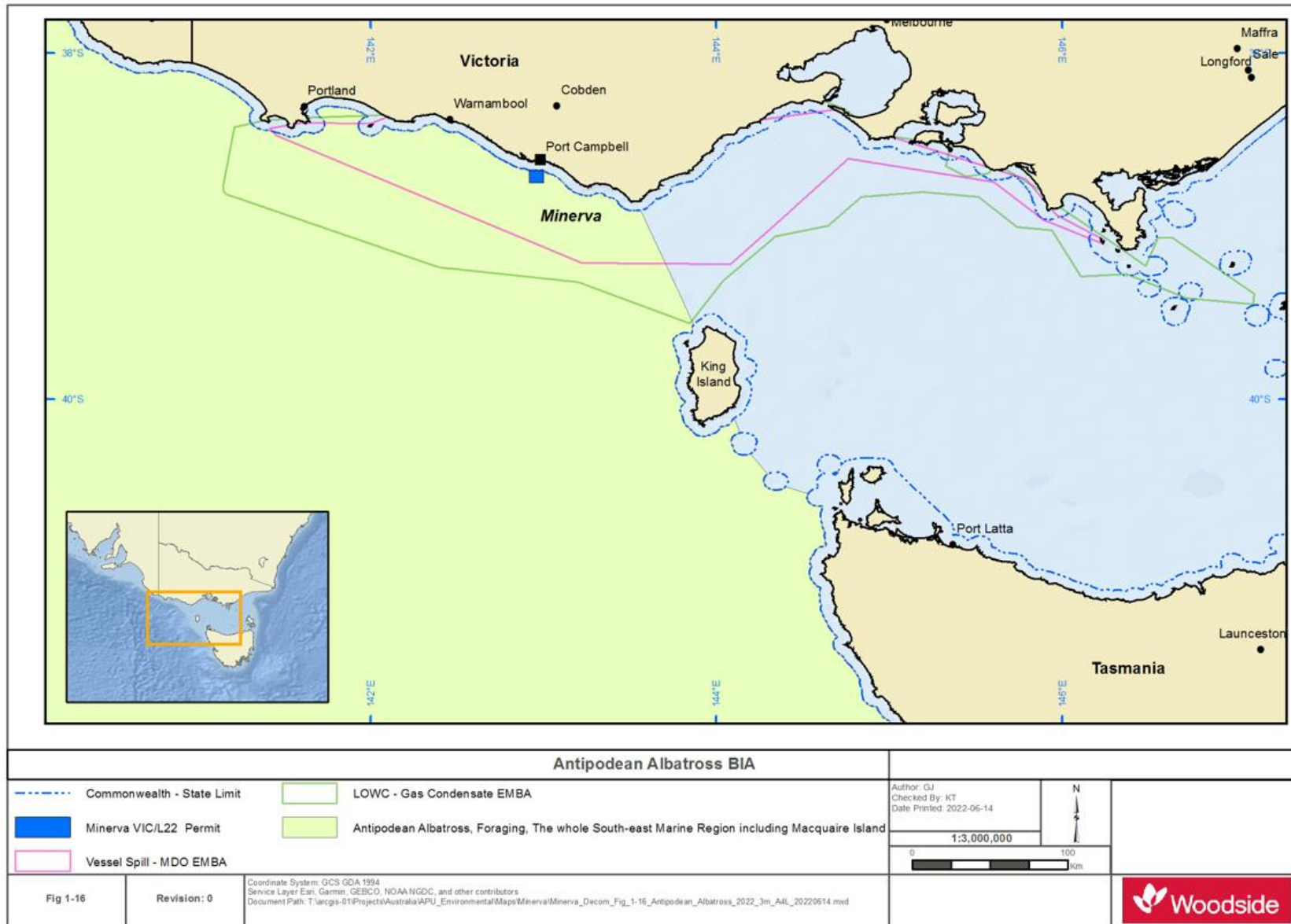


Figure 4-14 : BIAs for Antipodean Albatross

Description of Environment for the Minerva Field

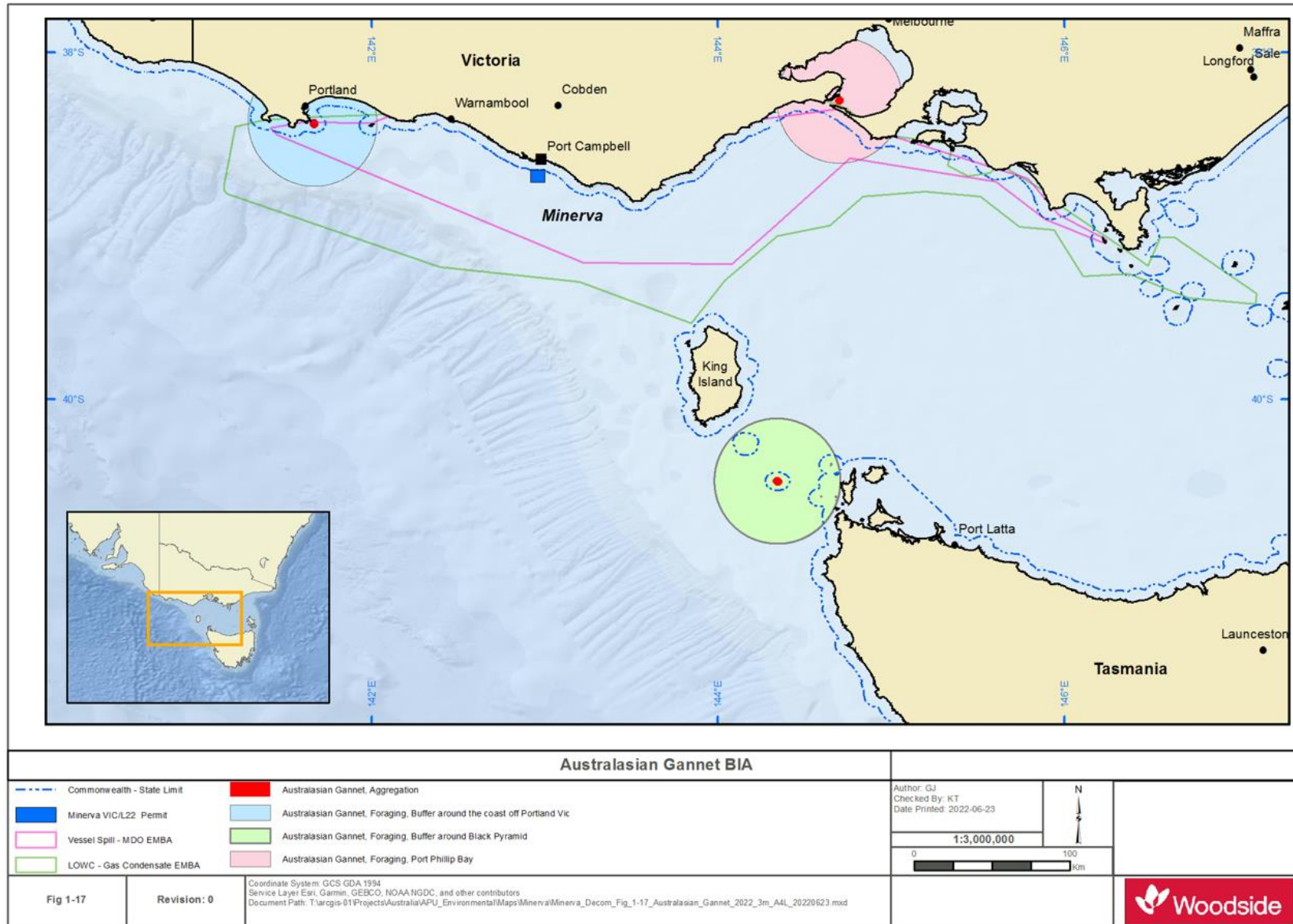


Figure 4-15: BIAs for Australasian Gannet

Description of Environment for the Minerva Field

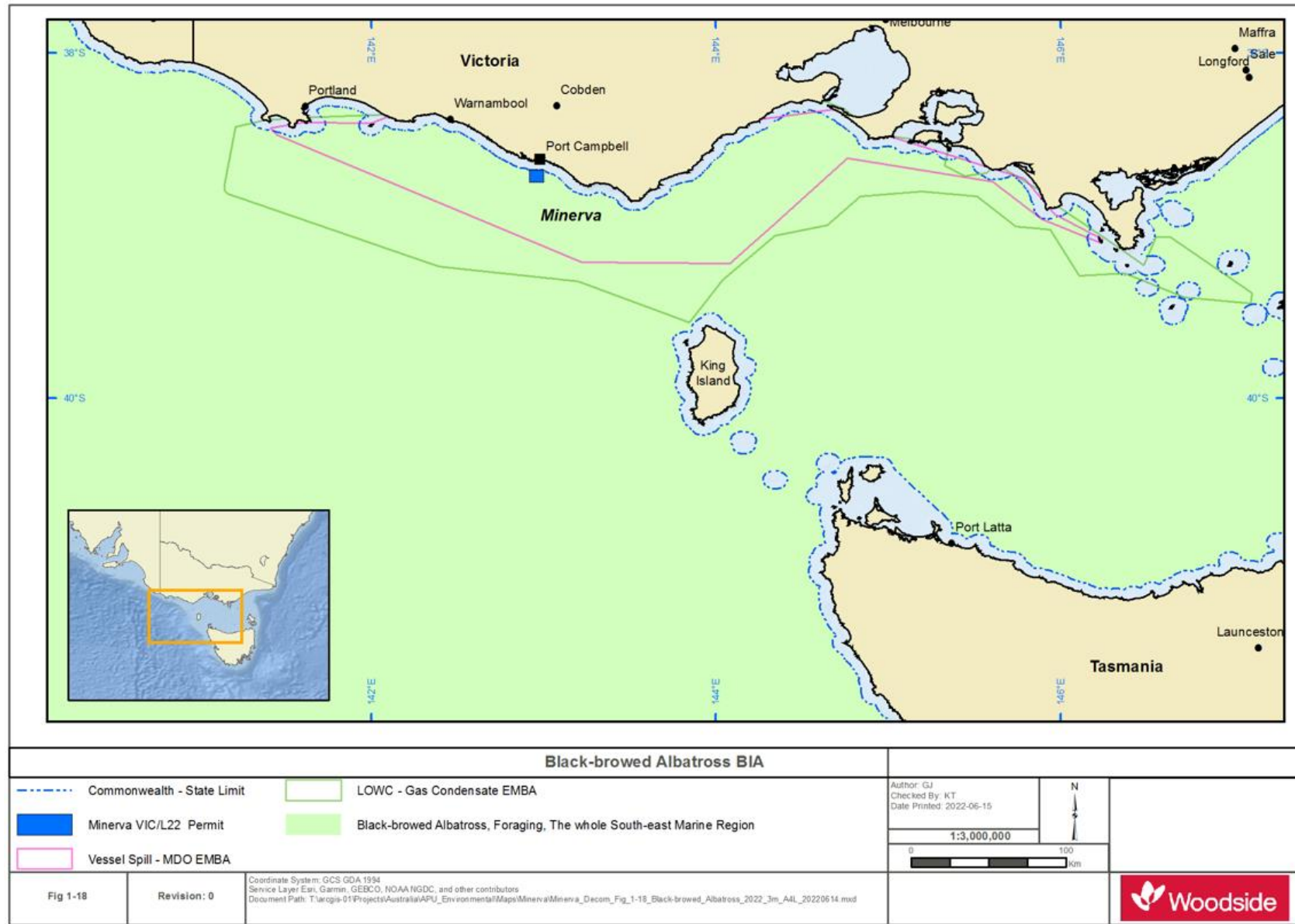


Figure 4-16: BIAs for Black-browed Albatross

Description of Environment for the Minerva Field

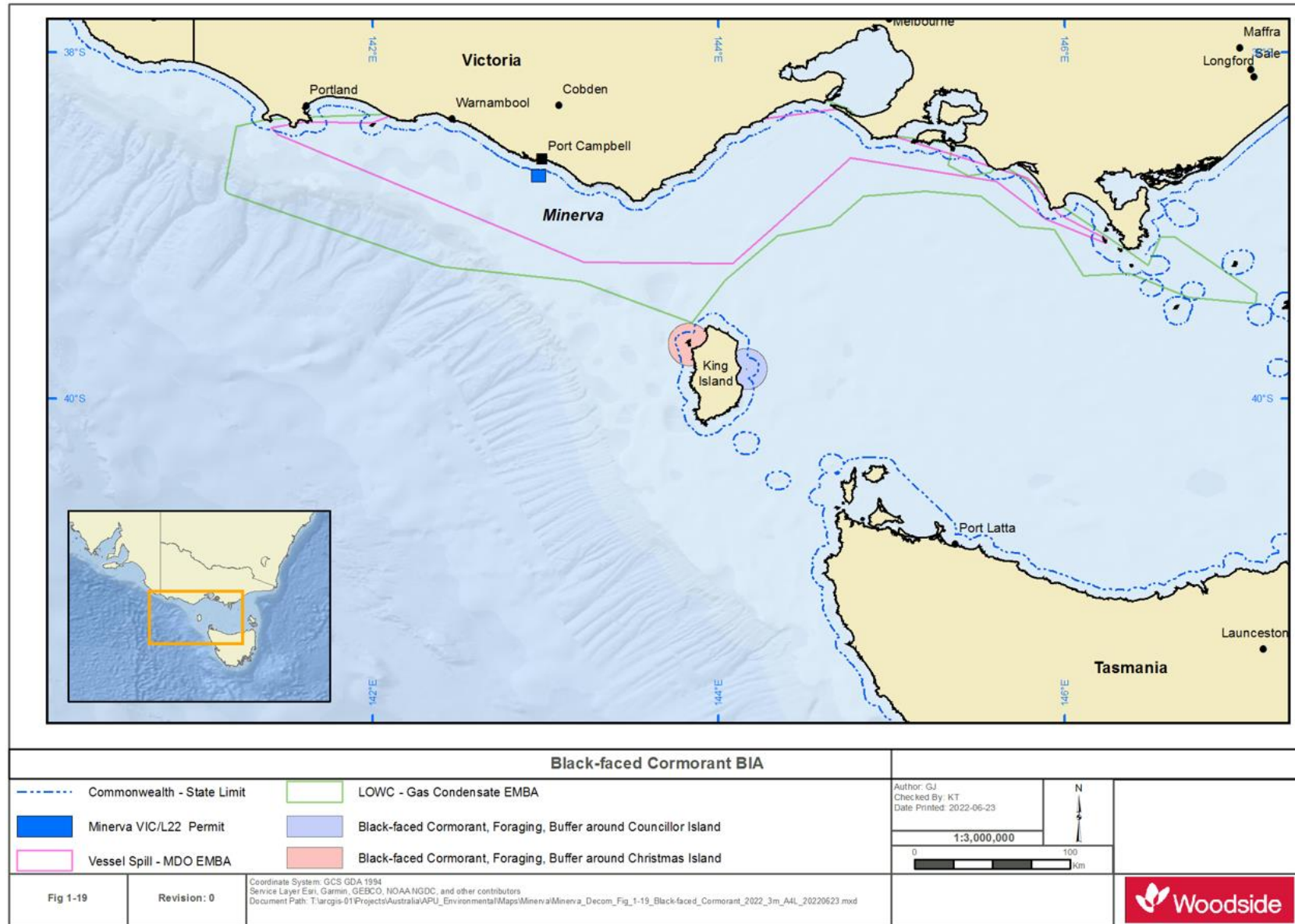


Figure 4-17: BIAs for Black-faced Cormorant

Description of Environment for the Minerva Field

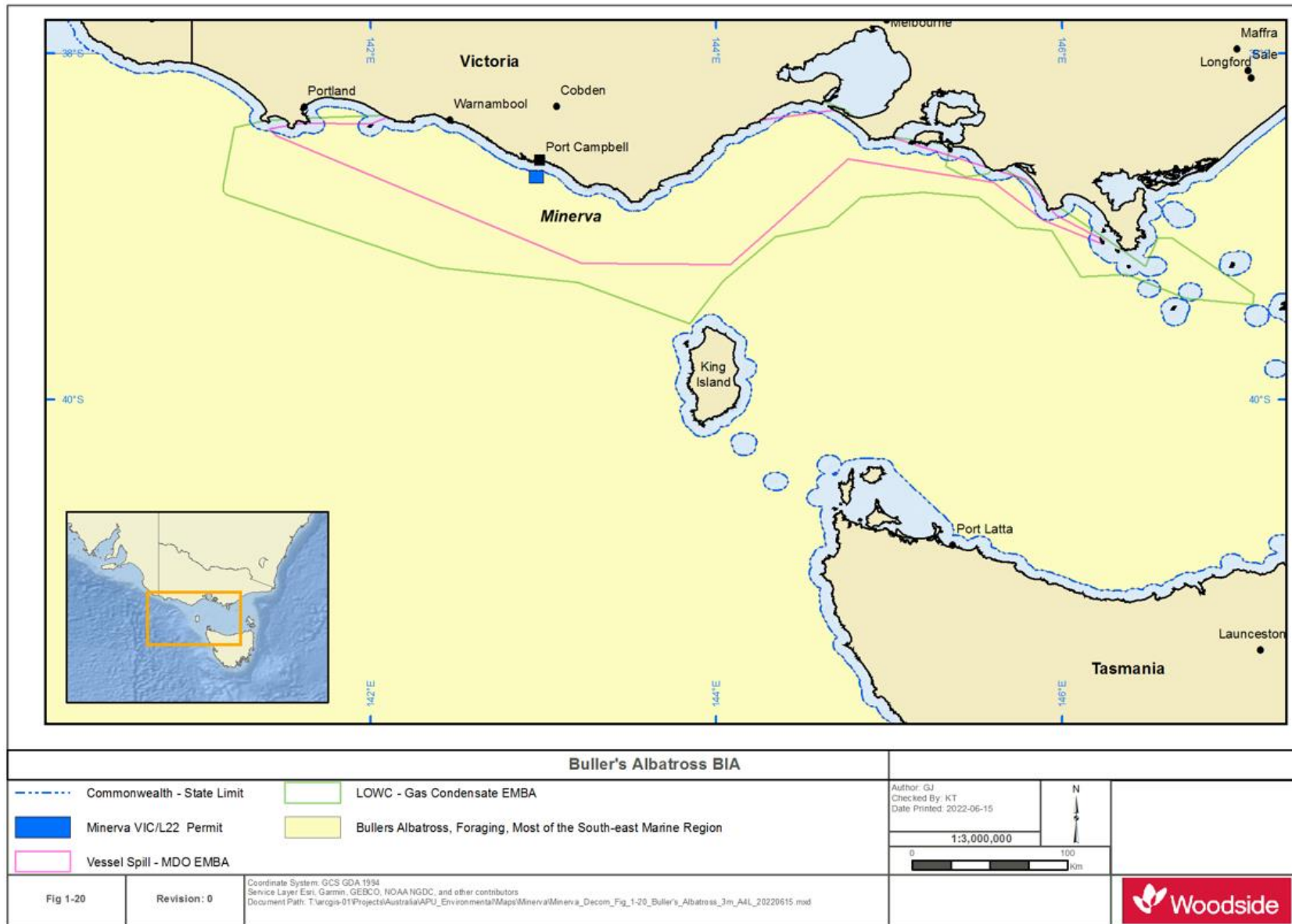


Figure 4-18: BIAs for Buller's Albatross

Description of Environment for the Minerva Field

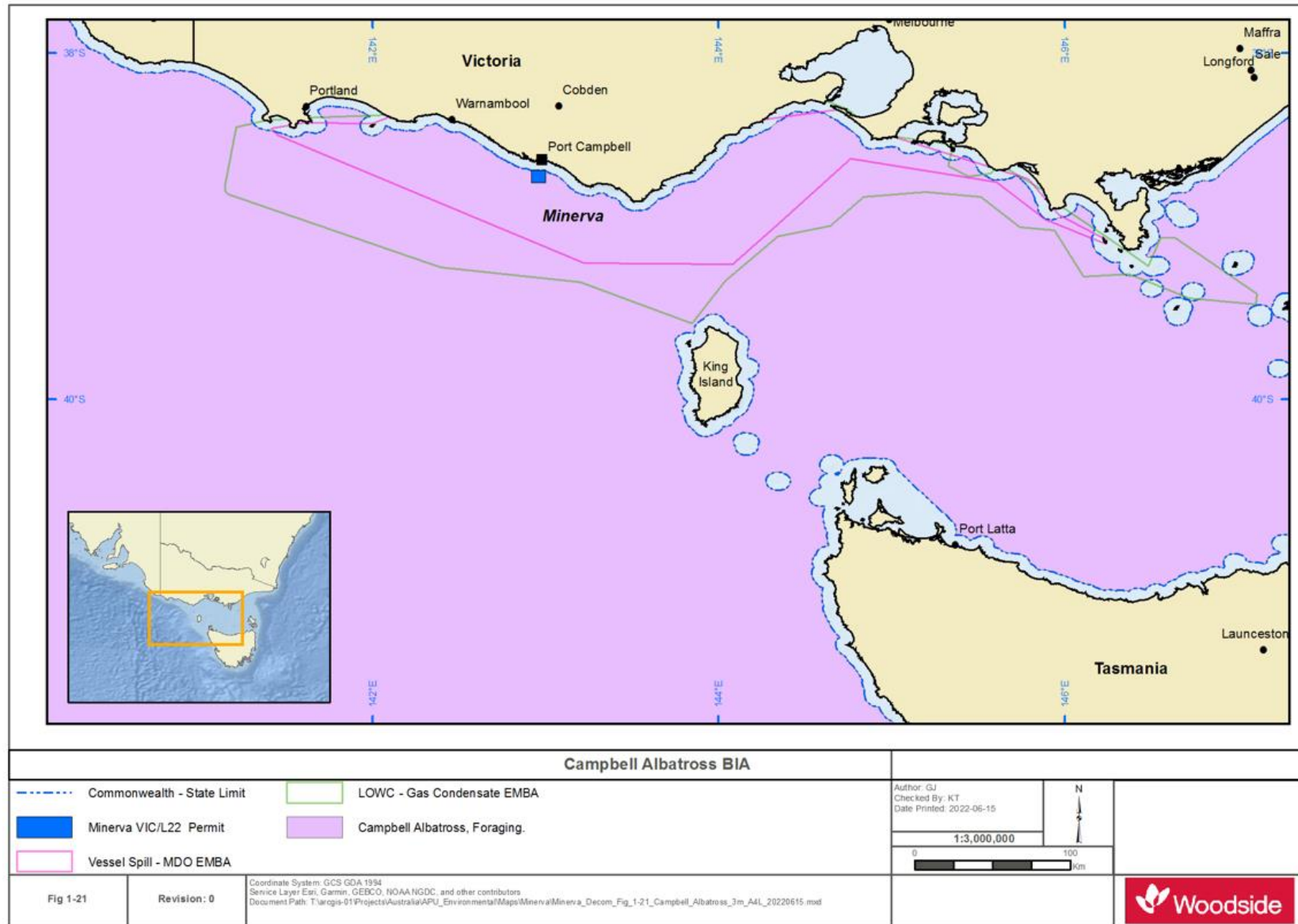


Figure 4-19: BIAs for Campbell Albatross

Description of Environment for the Minerva Field

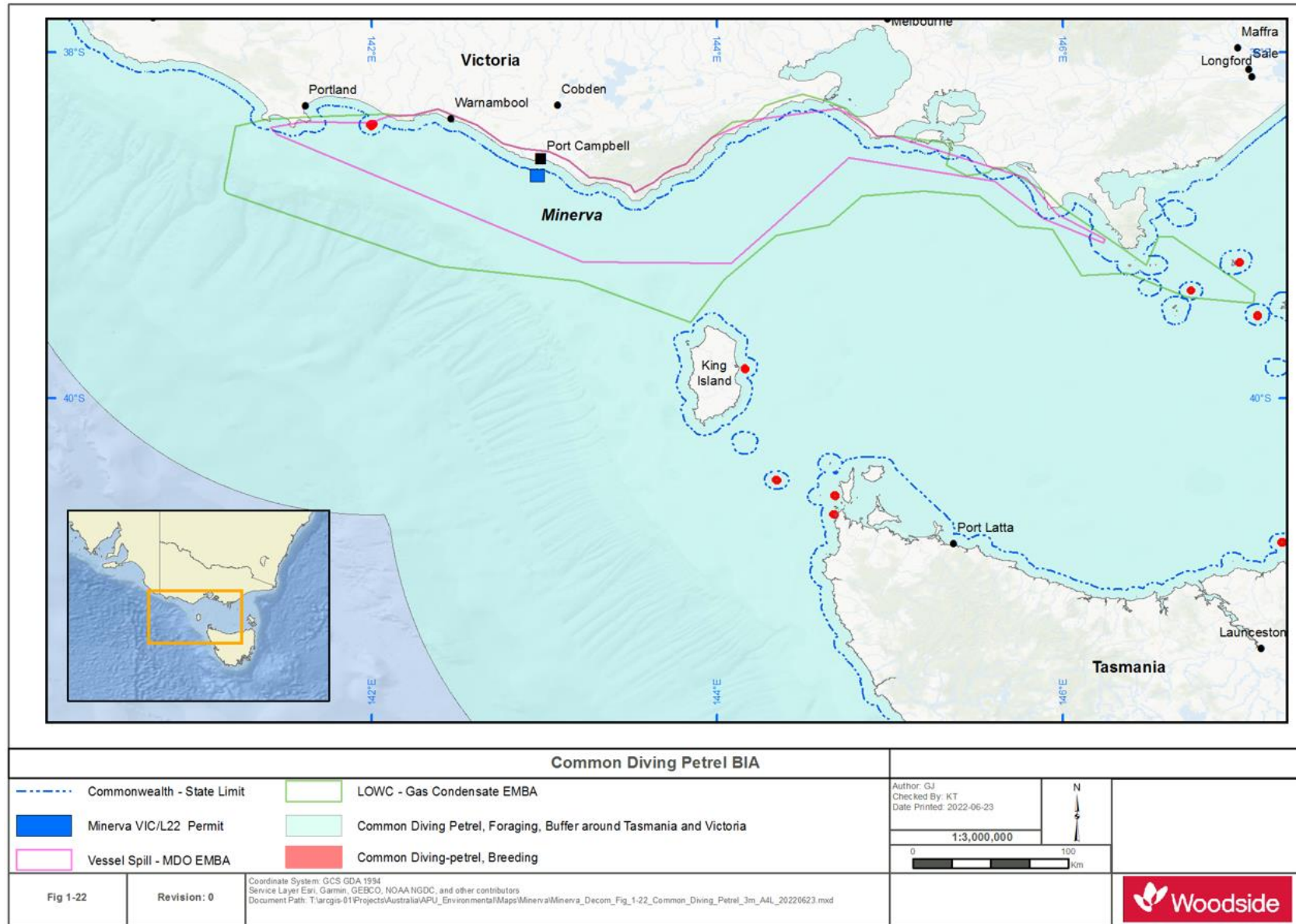


Figure 4-20: BIAs for Common Diving Petrel

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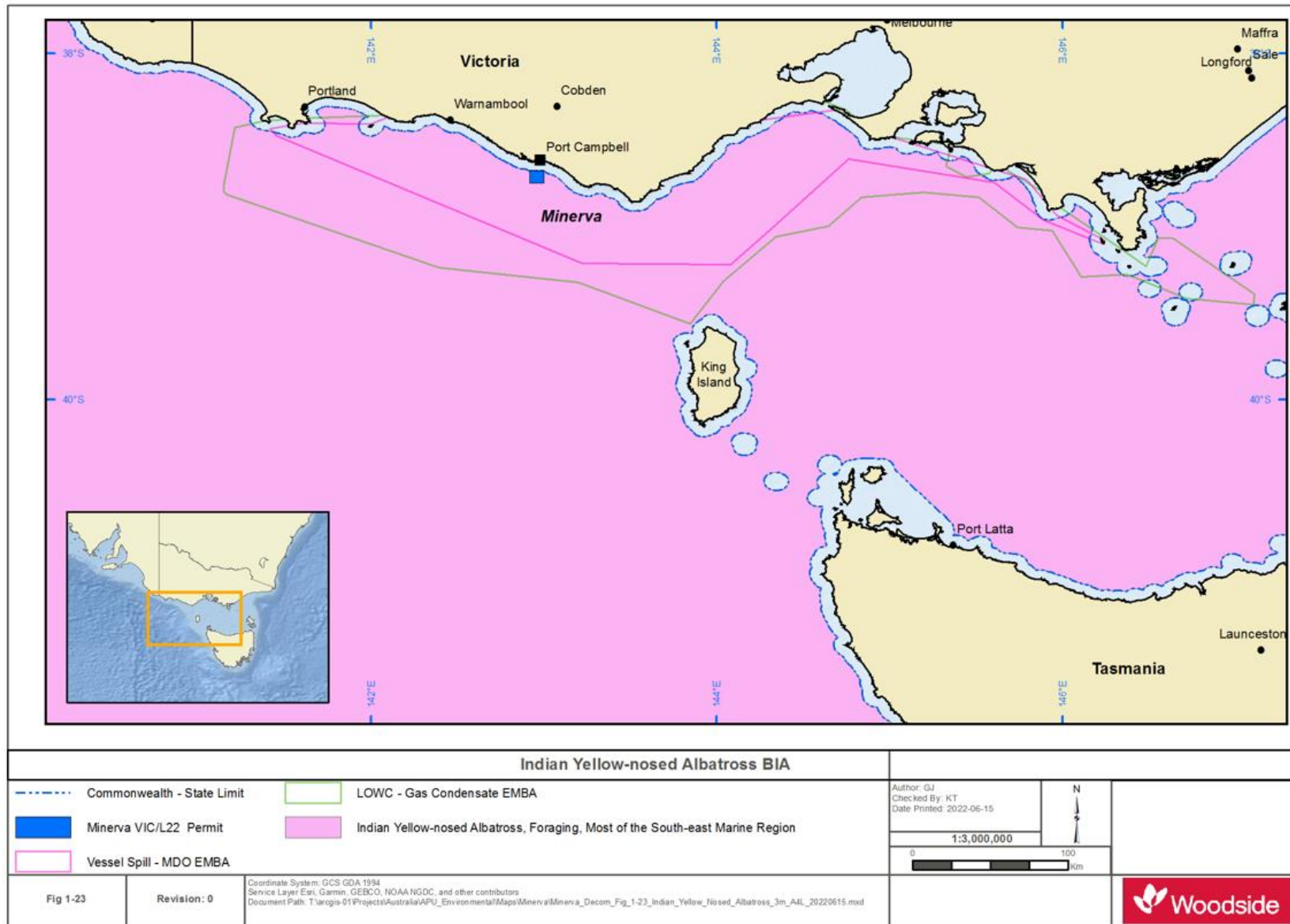


Figure 4-21: BIAs for Indian Yellow-nosed Albatross

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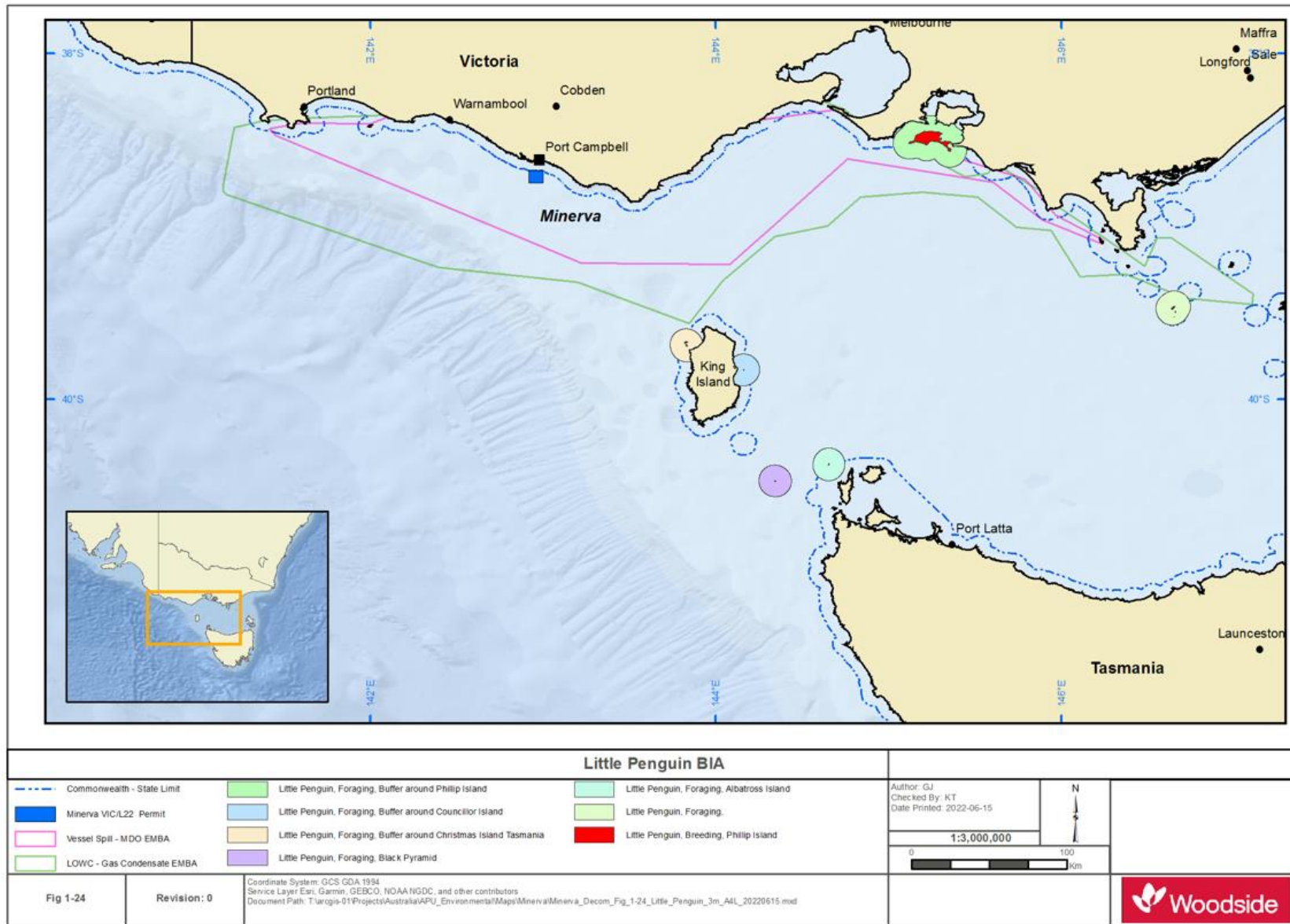


Figure 4-22: BIAs for Little Penguin

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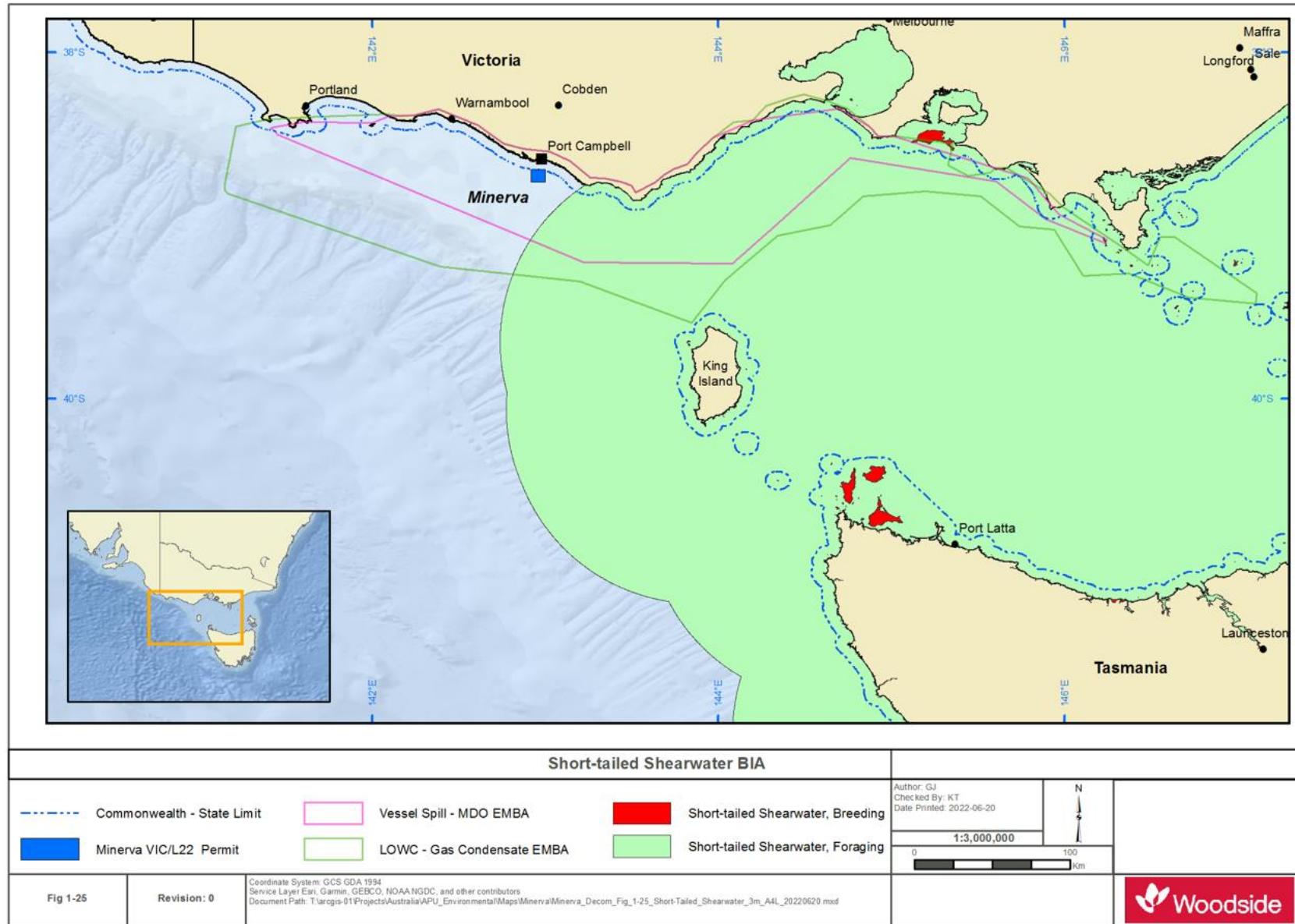


Figure 4-23: BIAs for Short-tailed Shearwater

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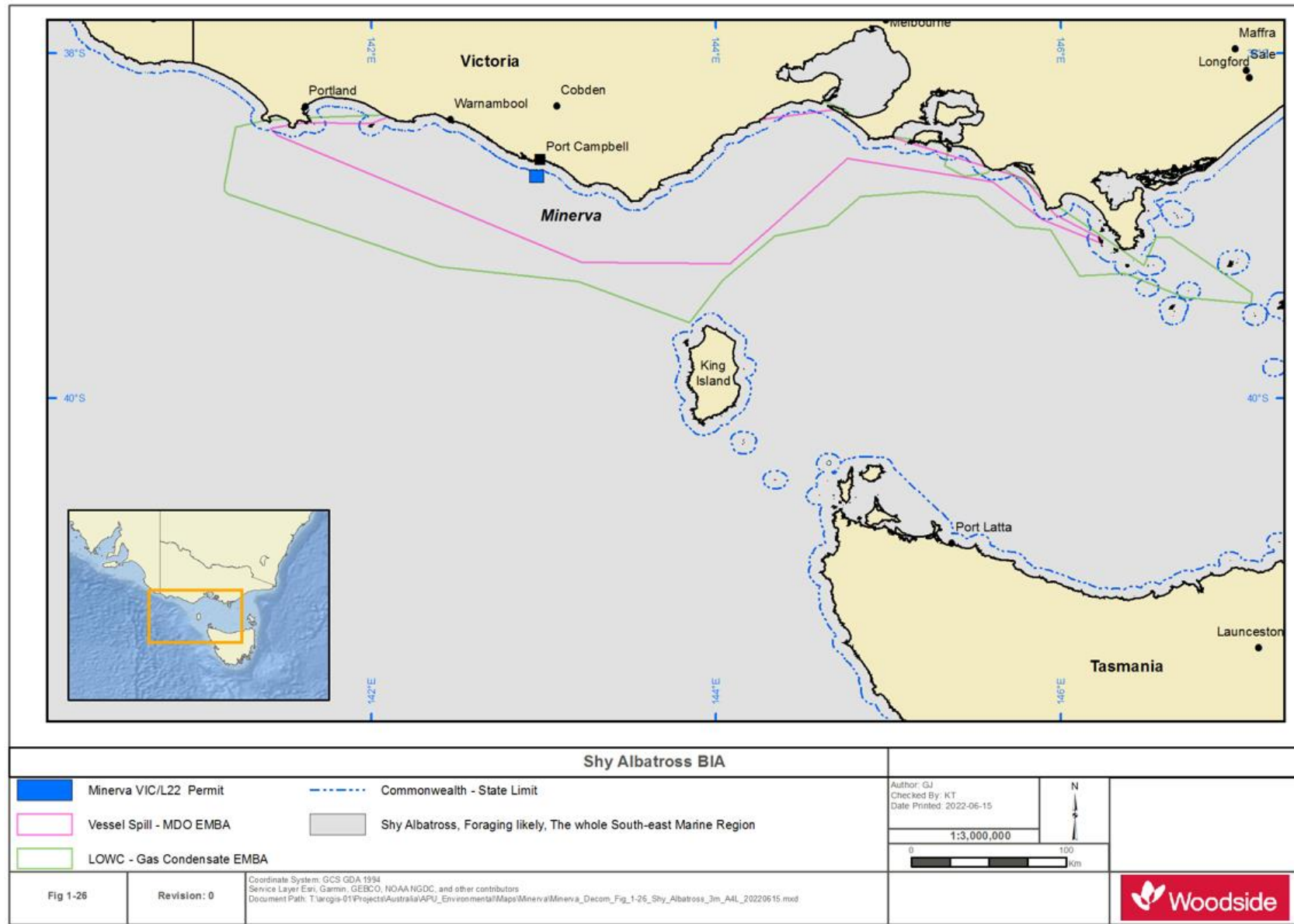


Figure 4-24: BIAs for Shy Albatross

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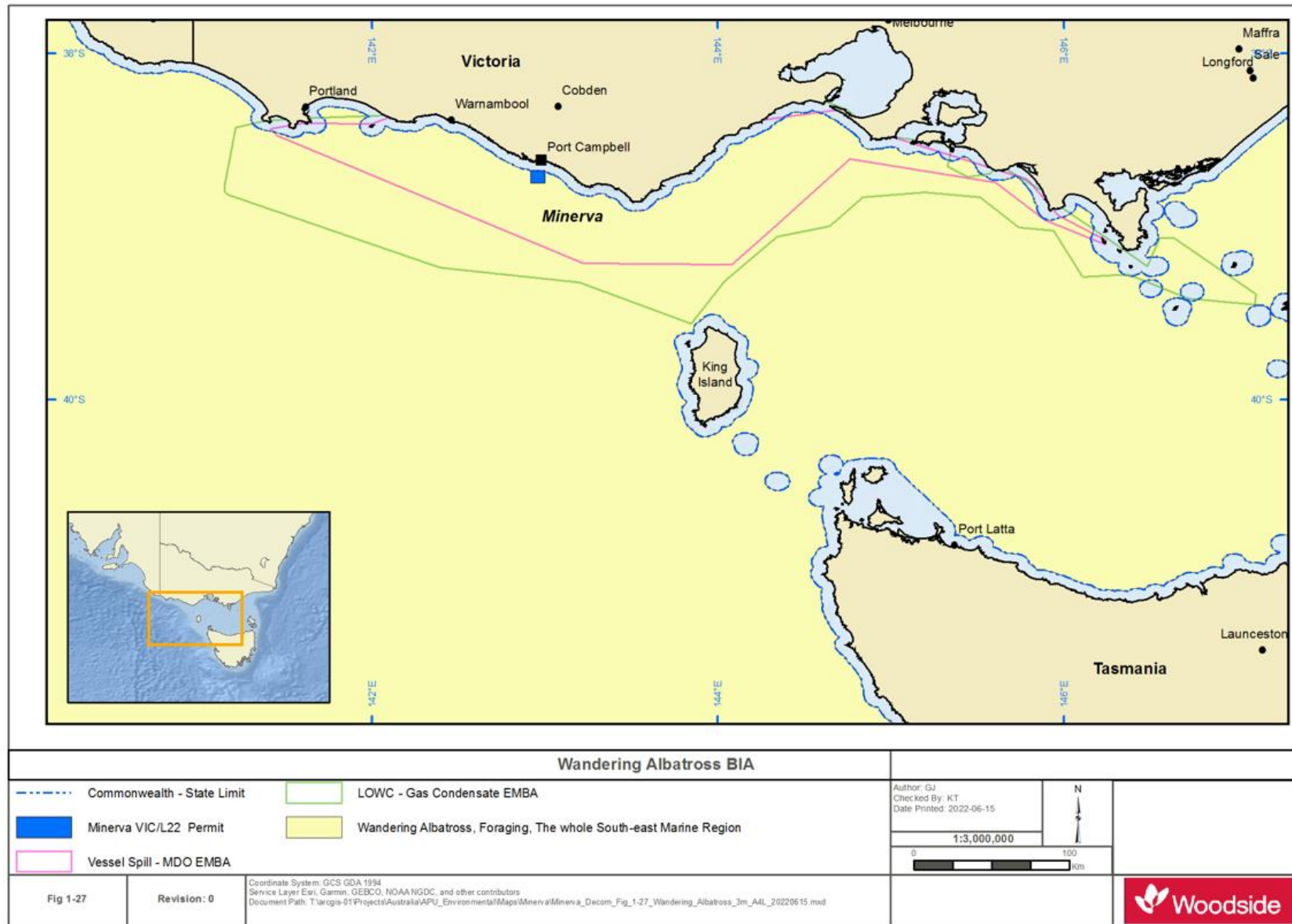


Figure 4-25: BIAs for Wandering Albatross

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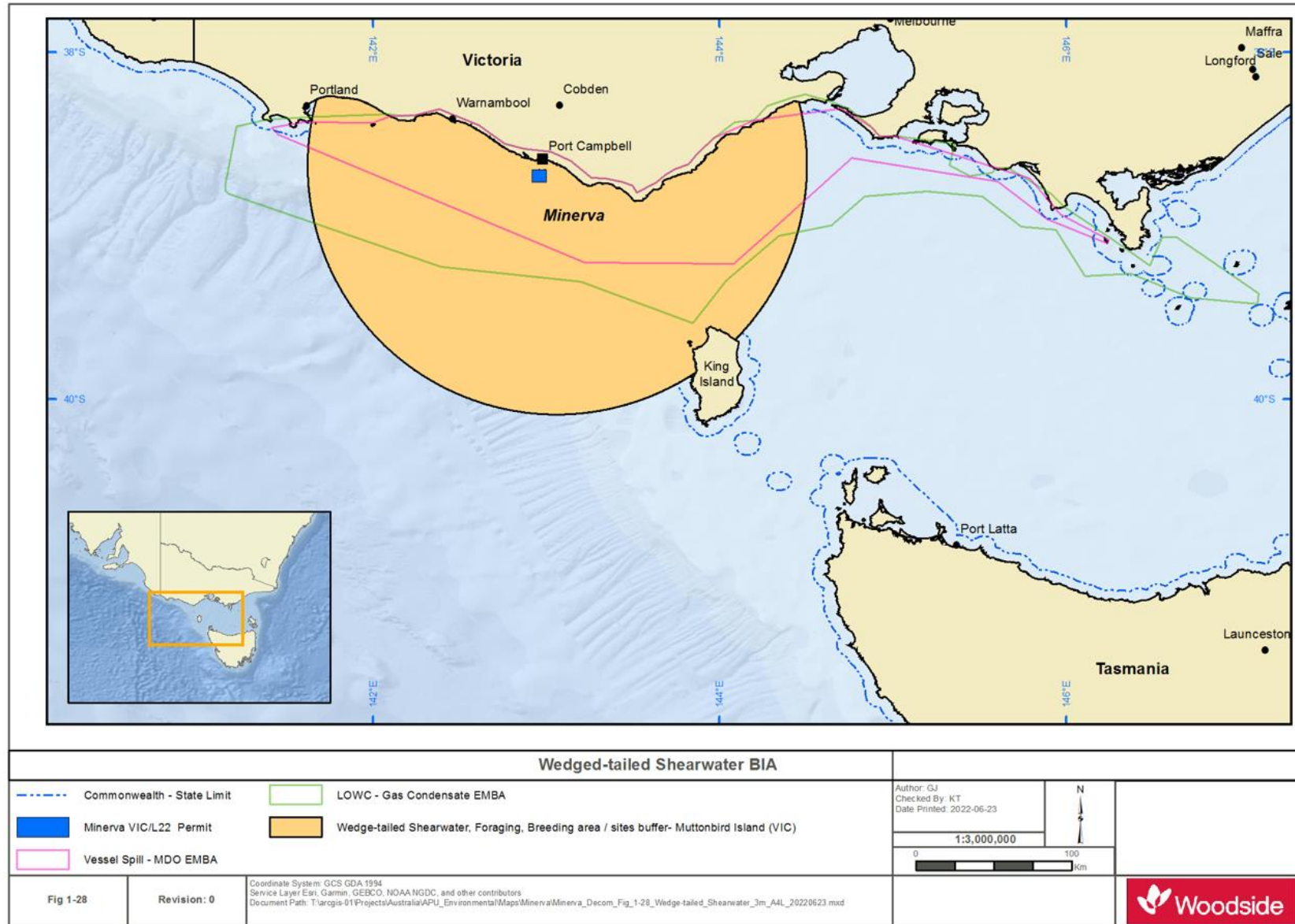


Figure 4-26: BIAs for Wedge-tailed Shearwater

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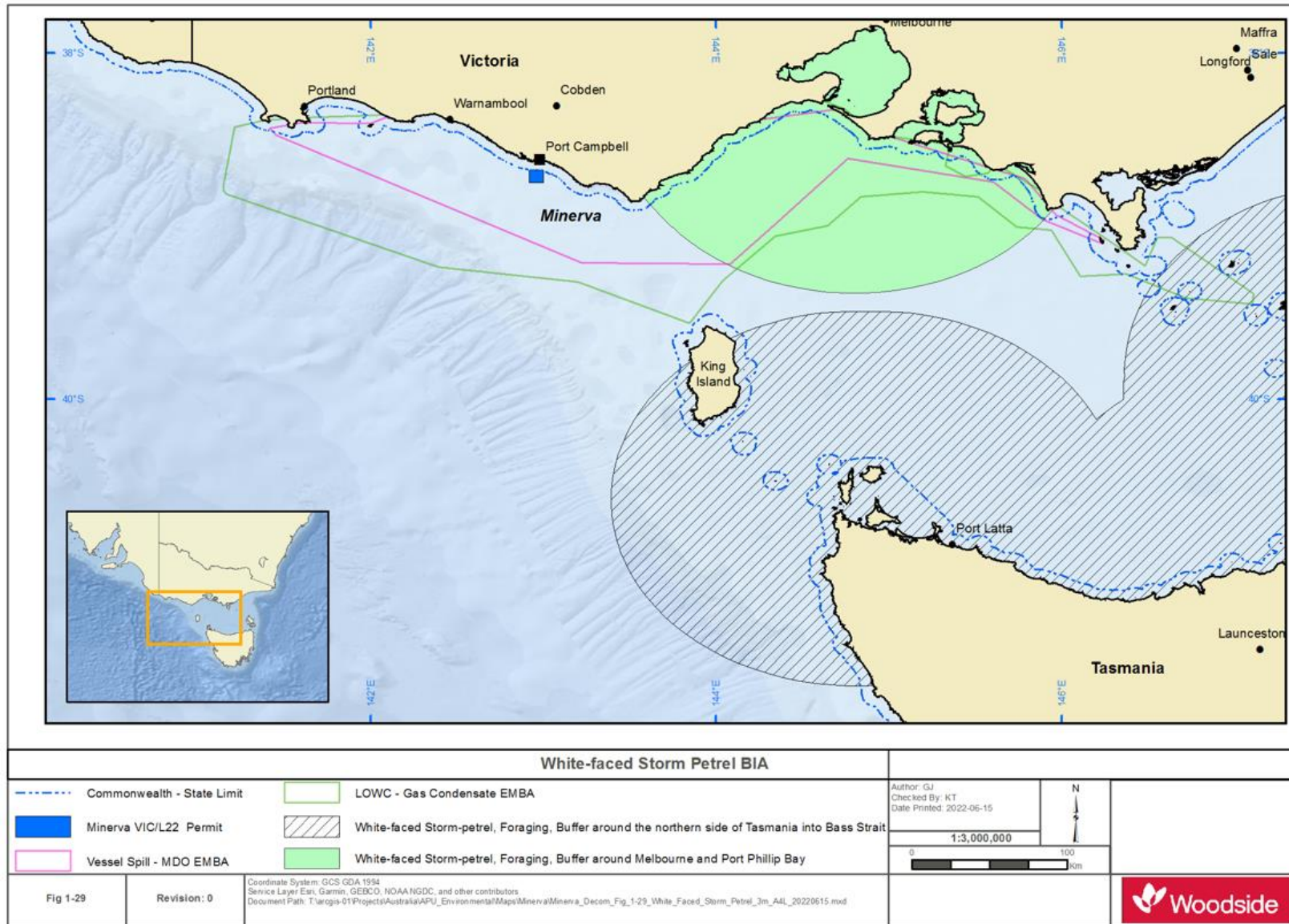


Figure 4-27: BIAs for White-faced Storm Petrel

Description of Environment for the Minerva Field

Habitat Critical to the Survival of a Species

Habitat critical to the survival of a species is defined within the EPBC Act Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (DoE, 2013) as areas that are necessary:

- For activities such as foraging, breeding, roosting, or dispersal;
- For the long-term maintenance of the species (including the maintenance of species essential to the survival of the species);
- To maintain genetic diversity and long-term evolutionary development; or
- For the reintroduction of populations or recovery of the species.

However, there are no critical habitats identified within the operational area or EMBA.

Summary of Windows of Ecological Sensitivity

Table 4-7 provides a summary of the windows of ecological sensitivity for values identified within and around the operational area and the wider EMBA. These receptors are considered throughout the EP in terms of the identified potential risk.

Description of Environment for the Minerva Field

Table 4-7: Key environmental sensitivities and timing of biologically important activity

Category	Environmental Sensitivity	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Habitats / Communities	Phytoplankton abundance	Assumed peak occurrence associated with Bonney Upwelling			Present year-round								
	Zooplankton abundance	Assumed peak occurrence associated with Bonney Upwelling			Present year-round								
	Seagrass	Present year-round in coastal areas											
	Macroalgae	Present year-round											
TEC	Bonney Coast Upwelling	Upwelling event											
Marine Fauna (threatened/migratory species)	Marine Mammals												
	Antarctic Minke Whale			Likely to occur in summer									
	Australian Sea Lion	Assumed present year-round – SEMR is a known range											
	Pygmy Blue Whale	Foraging occurs during Bonney Upwelling – BIA											
	Dusky Dolphin	Assumed present year-round – prefers inshore habitats but may also be pelagic at times											
	Fin Whale	Present during the Bonney Upwelling event											
	Humpback Whale				Nth Migration through SEMR							Sth Migration through SEMR	
	Killer Whale	Assumed present year-round – frequent sightings off Vic along the continental slope and shelf											
	Pygmy Right Whale	Uncommon / few or no records available for Vic.											
	Sei Whale	Sighted during the Bonney Upwelling event											
	Southern Right Whale					Migration BIA							
						Reproduction BIA							
	Sperm Whale	Prefer deep offshore environments >600 m											
Marine Reptiles													

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Category	Environmental Sensitivity	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Green turtle	Occurs in limited numbers in Vic and SA											
	Leatherback Turtle	Foraging in the SEMR is known to occur											
	Loggerhead Turtle	Uncommon in southern Australia											
	Fish, Sharks and Rays												
	Australian Grayling		Spawning from late Summer to Winter (freshwater)				Assumed present year-round – typically occurs in freshwater but can occur in coastal seas						
	Porbeagle	Assumed present year-round											
	Shortfin Mako Shark	Assumed present year-round											
	Whale Shark	Uncommon in southern Australia – isolated records for Vic.											
	White Shark	Assumed present year-round with breeding, distribution and foraging BIAs identified throughout the region											
	Blue Warehou	Assumed present year-round											
	Eastern School Shark	Assumed present year-round											
	Orange Roughy	Assumed present year-round											
	Southern Bluefin Tuna	Assumed present year-round											
	Southern Dogfish	Assumed present year-round											
	Syngnathids	Assumed present year-round in waters <50 m (sometimes recorded in deeper offshore waters)											
	Birds												
	Antipodean Albatross	Foraging known to occur all year											
	Australasian Gannet							Present year-round – foraging and aggregation BIAs			Breeding occurs Oct – May		
	Black-browed Albatross					Fledglings (Apr – May)		Present – foraging BIA			Breeding within SEMR on Macquarie Is.		
	Black-faced Cormorant	Assumed present year-round – foraging BIA (endemic to southern Australia)											
	Buller's Albatross	Foraging BIA – however, records indicate the species is mainly present around Tas when in the SEMR (species endemic to NZ)											

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Category	Environmental Sensitivity	Month											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Campbell Albatross					Present in the non-breeding season – foraging BIA			Breeds on Campbell Island, south of NZ Aug - May				
	Common Diving Petrel		Present year-round – foraging BIA					Breeding occurs Jul-Jan – breeding BIA					
	Indian Yellow-nosed Albatross			Fledgling Mar-Apr			Non-breeding visitor – foraging BIA			Breeding occurs in South Africa – eggs laid in Sep-Oct			
	Little Penguin			Present year-round – foraging BIA					Breeding Sept – Feb – breeding BIA				
	Short-tailed Shearwater	Present Sep-May – foraging and breeding BIAs				Migrates north for Winter			Breeding Oct – May				
	Shy Albatross	Assumed present year-round – foraging BIA. Breeding occurs in SEMR with eggs laid in Sept and fledglings in Apr											
	Wandering Albatross	Assumed present year-round – foraging BIA. Breeding occurs biennially on Macquarie Island with eggs laid in Dec and fledglings between mid-Nov and late-Feb											
	Wedge-tailed Shearwater	Present Aug-May – foraging and breeding BIA											
	White-faced Storm Petrel	Fledglings mid-Feb – mid-Mar			Migrates to tropical and subtropical locations in non-breeding season					Species arrive at breeding colonies late-Sept – early-Oct with egg laying occurring in early Summer			
	Birds – other seabirds (with no BIAs identified)	Various species – assumed present											
	Birds – shorebirds	Various species – assumed present											
Legend		Peak occurrence / activity (reliable and predictable)											
		Low level of occurrence/ activity (may vary from year to year)											
		Activity can occur throughout the year											
		No occurrence											

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4.3.7 Marine Mammals

A search of the EPBC Act Protected Matters database identified 32 EPBC Act listed marine mammal species with potential to occur or have habitat within the EMBA. Of these, a total of five were listed as threatened and ten were listed as migratory marine mammal species. Within the operational area a total of 15 EPBC Act listed marine mammals (four threatened species and eight migratory listed) were identified.

Threatened and Migratory Species

Antarctic Minke Whale

The Antarctic Minke Whale (*Balaenoptera bonaerensis*) is listed as migratory under the EPBC Act. This species is found throughout the Southern Hemisphere from 55°S to the Antarctic ice edge during the austral summer (Perrin and Brownell, 2002). In these areas, the distribution of the Antarctic Minke Whale is mainly oceanic, beyond the continental shelf break (DAWE, 2022). Limited movements patterns are known, however this species does undergo extensive migration between the summer Antarctic feeding grounds and winter sub-tropical to tropical breeding grounds (DAWE, 2022). In Australia, Antarctic Minke Whales have been recorded from all States but not in the Northern Territory (Bannister *et al.*, 1996).

The Antarctic Minke Whale was identified as likely to occur within the EMBA.

Australian Sea Lion

The Australian Sea Lion (*Neophoca cinerea*) is listed as endangered under the EPBC Act. The Australian Sea Lion is the only pinniped endemic to Australia (Strahan, 1983). The breeding range extends from Houtman Abrolhos, Western Australia, to the Pages Island, east of Kangaroo Island, South Australia (DAWE, 2022). Breeding colonies occur on islands or remote sections of coastline. Over 66 breeding colonies have been recorded: 28 in WA and 38 in SA (DAWE, 2022). The Australian Sea Lion exhibits high site fidelity and little movement of females between colonies have been observed, even between those separated by short distances (Campbell *et al.*, 2008).

Australian Sea Lions use a wide variety of habitats for breeding sites (called rookeries), and during the non-breeding season, for haul-out sites (DAWE, 2022). Onshore habitats used include exposed islands and reefs, rocky terrain, sandy beaches and vegetate for dunes and swales (DAWE, 2022). They feed on a wide variety of prey, including cephalopods, fish, sharks, rock lobsters and sea birds (Gales & Cheal, 1992; Ling, 1992).

The Australian Sea Lion was identified as known to occur within the EMBA.

Blue Whale

Blue whales (*Balaenoptera musculus*) are listed as endangered and migratory under the EPBC Act. There four sub-species of Blue Whale, two of these occur within Australian waters, the southern (or 'true' blue whale (*Balaenoptera musculus intermedia*) and the 'pygmy' blue whale (*Balaenoptera musculus breviceauda*) (DoE, 2015a). As with other baleen whales, they generally migrate between breeding grounds at lower latitudes where both mating and calving takes place during the winter, and feeding grounds at higher latitudes during the summer and have overlapping but different spatial distributions (DoE, 2015a). Blue whale habitat is variable between the two sub-species found in Australian waters. The Antarctic blue whale tends to remain at higher latitudes and migrate to lower latitudes for feeding, breeding and calving during the Australian summer, whilst some remain within the Antarctic waters year-round (Branch, 2007; Širovic *et al.*, 2009). In comparison, the pygmy blue whale habitat is more diverse, expanding throughout the Indian Ocean, with individuals moving between Australia and the warmer waters of Indonesia (Branch *et al.* 2007, Double *et al.* 2014). The Bonney Upwelling (Section 4.14.1.10) is an important habitat and feeding ground for Pygmy Blue Whales and it is located within the EMBA. The Pygmy Blue Whale aggregates between Cape Otway, Victoria, and Robe, South Australia, in relatively shallow shelf waters enriched by seasonal cold water upwelling driven by south-east winds. Aggregation in the Bonney Upwelling between the Great Australian Bight and Bass Strait occurs November–May (Gill *et al.*, 2011). This upwelling event allows whales to feed on abundant krill surface swarms (DAWE, 2022).

Blue whales were identified as likely to be foraging within the operational area and EMBA. Foraging and distribution BIAs for the Pygmy Blue Whale intercept the operational area and EMBA (Figure 4-11).

Dusky Dolphin

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The Dusky Dolphin (*Lagenorhynchus obscurus*) is listed as migratory under the EPBC Act and occurs mostly in temperate and sub-Antarctic zones (DAWE, 2022). In Australia, the Dusky Dolphin has been sighted in southern Australia from WA to Tasmania (Gill *et al.*, 2000). The area of occupancy is unknown, but it is considered to primarily inhabit inshore waters, but may also move offshore to seek out colder waters in summer months (DAWE, 2022).

Dusky Dolphins may occur within the operational area and have been identified as likely to occur within EMBAAs.

Fin Whale

The Fin Whale (*Balaenoptera physalus*) is listed as vulnerable and migratory under the EPBC Act. The Fin Whale is considered a cosmopolitan species and occur from polar to tropical waters, but rarely in inshore waters (DAWE, 2022). The species distribution in Australian waters is known primarily from aerial surveys, stranding events and whaling records (DAWE, 2022). Due to scarcity of sighting records, the distribution cannot be accurately determined although it is thought to be present along the western coast of Australia, southern Australia around to Tasmania. The Australian Antarctic waters are important feeding grounds but there are no known mating or calving areas in Australian waters (Morrice *et al.*, 2004). Sightings of fin whales feeding in the Bonney Upwelling (Section 4.14.1.10) area in summer and autumn months indicate that this area is also a potentially important feeding ground (Morrice *et al.*, 2004).

Fin Whales were identified as showing likely foraging behaviour within the operational area and known foraging within the EMBAAs.

Humpback Whale

The Humpback Whale (*Megaptera novaengliae*) is listed as migratory under the EPBC Act. The species was listed in the vulnerable category prior to the commencement of the EPBC Act and was listed as vulnerable under Schedule 1 of the *Endangered Species Protection Act 1992*. However, the Humpback Whale is no longer eligible for inclusion in any category of the list and is eligible for deletion from the listing (DAWE, 2022b) after it was deemed that the species has made a major recovery.

Humpback Whales are found in all ocean basins worldwide. Across this range there are multiple sub-populations with two sub-populations occurring within Australian waters; the west coast population and the east coast population (Scmitt *et al.*, 2014). The species migrates north from their Antarctic feeding grounds, reaching the waters of the South-east Marine Region in April and May (DoE, 2015). Immature individuals and lactating females arrive first, followed by non-pregnant females arriving last. Breeding and calving takes place between mid-August and early September when the southern migration starts. The southern migration occurs in the South-east Marine Region from October to December (DoE, 2015). In Australian waters, migration occurs in close proximity to the coast (DoE, 2015).

Although feeding is primarily undertaken in their Antarctic feeding grounds, there is growing evidence that humpback whales may feed on migration. This is thought to primarily be opportunistic and forms only a small portion of their nutritional requirements (Thiele *et al.*, 2004). Some feeding has been observed in Australia's coastal waters on various occasions throughout the South-east Marine Region (DoE, 2015).

Humpback Whales were identified as likely to occur within the operational area and known to occur within the EMBAAs.

Killer Whale

Killer Whale (*Orcinus orca*) is listed as migratory under the EPBC Act and is the largest member of the dolphin family. The Killer Whale is probably the most cosmopolitan of all cetaceans and may be seen in any marine region. Killer Whales occur throughout all oceans and contiguous seas, from equatorial regions to the polar pack ice zones, and may even ascend rivers. However, they are most numerous in coastal waters and cooler regions where productivity is high (Dahlheim and Heyning, 1999; Jefferson *et al.*, 1993). In Australia, Killer Whales are recorded from all states, with concentrations reported around Tasmania. Sightings are also frequent in South Australia and Victoria, most often along the continental slope and on the shelf (Ling 1991; DAWE, 2022).

As apex predators, Killer Whales feed on a variety of prey, including fish, birds and mammals with reports of attacks on dolphins, whales, dugongs and sea lions (Saulitis *et al.*, 2000; Bannister *et al.*, 1996). They are known to make seasonal migrations, and may follow regular migratory pathways; however little information is available for Australian Killer Whales (DAWE, 2022).

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The Orca has been identified as likely to occur within the operational area and EMBA's.

Pygmy Right Whale

The Pygmy Right Whale (*Caperea marginata*) is listed as migratory under the EPBC Act. There is little known about this species with few sightings recorded (Kemper, 2002). In Australia, they have been recorded between 32°S and 47°S, but are not uniformly spread around the coast, with the distribution on the considered to be limited by the Leeuwin and East Australian currents (Kemper, 2002).

The Pygmy Right Whale may forage in the operational area and was identified as likely to forage within EMBA's.

Sei Whale

Sei whales (*Balaenoptera borealis*) are listed as vulnerable and migratory under the EPBC Act. They are considered a cosmopolitan species, ranging from polar to tropical waters, but tend to be found more offshore than other species of large whales (DAWE, 2022). Sei Whales have been infrequently recorded in Australian waters and the similarity in appearance between the Sei Whale and Bryde's Whale may have resulted on some confusion about occurrence (Bannister *et al.*, 1996; DAWE, 2022). However, on a number of occasions the Sei Whale has been sighted in the Otway region with calves and for feeding, particularly on the continental shelf in the Bonney Upwelling (Miller *et al.*, 2012) where opportunistic feeding has been observed between November and May (Gill *et al.*, 2015). The species migrates between Australian waters and Antarctic feeding areas but there is insufficient data outside of observations in the proximity of the Bonney Upwelling during summer and autumn months (Gill, 2002).

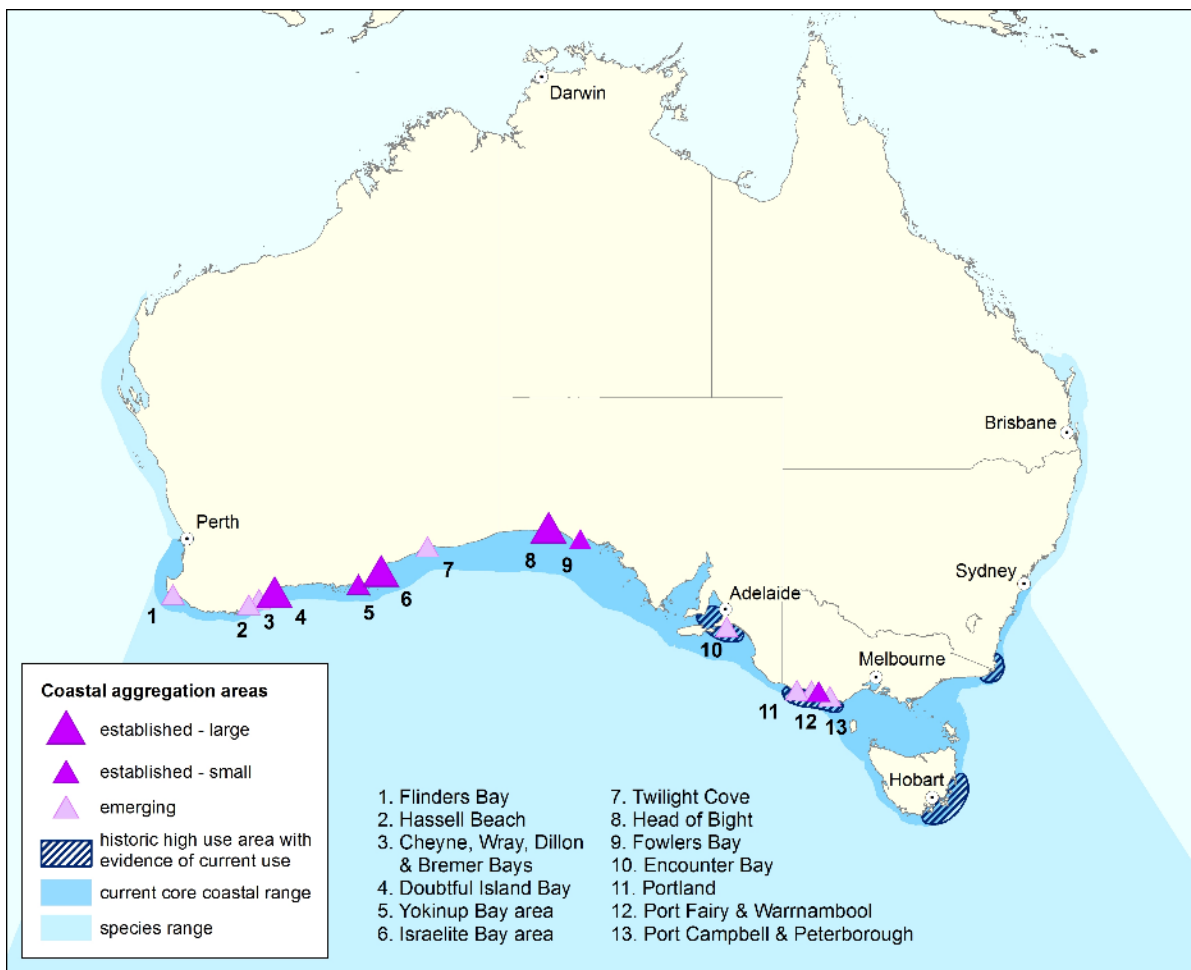
Sei whales were identified to likely forage within the operational area and known to forage within the EMBA's.

Southern Right Whale

The Southern right whale (*Eubalaena australis*) is listed as endangered and migratory under the EPBC Act. The species is a seasonal visitor to the Australian coast, arriving between May and November (occasionally as early as April and as late as November) and recorded in the coastal waters of all Australian states (Bannister *et al.*, 1996). More common between Sydney and Perth (Figure 4-28), the species generally occupy shallow sheltered bays that offer protection from south westerly weather, within 2 km of the shore and in water depth of less than 10 m (Charlton, 2017). Southern Right Whales migrate from their summer feeding grounds in the Southern Ocean to calve and breed in warmer coastal waters (DoE, 2015). The species are known to regularly aggregate for breeding and calving off of Warrnambool, Victoria, with calving areas tending to be very close to the shore. The known calving and aggregation areas in the south-east region are Warrnambool, Port Fairy, Port Campbell and Portland (Victoria), and Encounter Bay (South Australia) (Figure 4-28), with an aggregation BIA identified within the EMBA's (Figure 4-12).

Southern Right Whales are known to occur within the operational area, with breeding known to occur in the EMBA's. Several BIAs have been identified for this species with a known core range BIA and migration and resting on migration BIA within the operational area and an addition aggregation BIA identified for the EMBA's (Figure 4-12).

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Source: DAWE, 2022

Figure 4-28: Range and Coastal Aggregation Areas for the Southern Right Whale

Sperm Whale

The Sperm Whale (*Physeter macrocephalus*) is listed as migratory under the EPBC Act. They are a pelagic species with a wide distribution extending from the polar regions to the equator (DAWE, 2022). Preferring water depths of 600 m or more, Sperm Whales are most common in submarine canyons at the edges of the continental shelf and mid-ocean, however, may occur close to coasts where water depths exceed 200 m (Bannister *et al.*, 1996). Although Sperm Whales have been recorded from all Australian states (Bannister *et al.* 1996), limited information exists on their distribution in Australian waters given their preference for deep offshore environments. In general, movement appears to be southwards in summer and northwards in winter, particularly for males (Whitehead, 2002).

Sperm Whales are deep and prolonged divers and can therefore feed throughout the entire water column preying on other deep water species such as oceanic cephalopods, medium and large-sized demersal fishes, including rays, sharks and many teleosts (DAWE, 2022).

Sperm whales may occur within the EMBA.

4.3.8 Marine Reptiles

A search of the EPBC Act Protected Matters database identified three EPBC Act listed marine reptile species, with potential to occur or have habitat within the operational area and EMBA. Of these, two are listed as endangered; Loggerhead and Leatherback turtles, and one was listed as vulnerable; Green turtle.

Threatened and Migratory Species

Green Turtle

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The Green Turtle (*Chelonia mydas*) is listed as vulnerable and migratory under the EPBC Act. Green turtles nest, forage and migrate across tropical northern Australia (DAWE, 2022). They usually occur between the 20°C isotherms, although individuals can stray into temperate waters as vagrant visitors (Cogger *et al.*, 1993). Green turtles spend their first 5-10 years drifting on ocean currents and during this pelagic (ocean-going) phase, they are often found in association with drift lines and floating rafts of *Sargassum* (DAWE, 2022). There is no known nesting or foraging grounds for green turtles offshore Victoria; they occur only in limited numbers in Victoria and South Australia (DoEE, 2017).

This species is not expected to occur within the operational area or EMBA.

Leatherback Turtle

The Leatherback Turtle (*Dermochelys coriacea*) is listed as endangered and migratory under the EPBC Act. The leatherback turtle is a pelagic feeder found in tropical, sub-tropical and temperate waters throughout the world (Marquez, 1990). Unlike other marine turtles, the leatherback turtle utilises cold water foraging areas, with the species recorded feeding in the coastal waters of all Australian States, including offshore Victoria and Tasmania (Hamann *et al.*, 2006). The SEMR is an important feeding area for the Leatherback turtle with the species commonly found foraging in the Bass Strait (DAWE, 2022; DoEE, 2017).

The species is highly pelagic, venturing close to shore mainly during the nesting season (Sarti Martinez, 2000). However, no major nesting has been recorded in Australia, with isolated nesting recorded in Queensland and the Northern Territory (DAWE, 2022).

The waters of the EMBA do not represent critical habitat for the species, however, the foraging behaviour for the Leatherback Turtle was identified as known to occur within the EMBA.

Loggerhead Turtle

The Loggerhead Turtle (*Caretta caretta*) is listed as endangered and migratory under the EPBC Act. The species has a global distribution throughout tropical, sub-tropical and temperate waters and is rarely seen off the Victorian coast (Bolten and Witherington 2003; Marquez 1990). In Australia, the Loggerhead Turtle occurs in the waters of coral and rocky reefs, seagrass beds and muddy bays throughout eastern, northern and western Australia with research considering two distinct genetic stocks between the western and eastern populations (DAWE, 2022; Dutton *et al.*, 2002).

The main Australian breeding areas for loggerhead turtles are generally confined to southern Queensland and Western Australia (Cogger *et al.*, 1993). Loggerhead turtles will migrate over distances in excess of 1,000 km but show a strong fidelity to their feeding and breeding areas (Limpus, 2008). Loggerhead turtles forage in all coastal states and the Northern Territory, but are uncommon in South Australia, Victoria and Tasmania with no known loggerhead foraging areas identified in Victoria waters (DoEE, 2017).

This species is not expected to occur within the EMBA.

4.3.9 Fish, Sharks and Rays

A search of the EPBC Act Protected Matters database identified a total of three fish species that are listed as Threatened (two of which are also listed Migratory species), with potential to occur or have habitat within the EMBA. An additional two species were listed as migratory fish species, and five Conservation Dependent species. Within the operational area a total of six EPBC Act listed fish were identified.

Threatened and Migratory Species

Australian Grayling

The Australian Grayling (*Protorocles margena*) is listed as a vulnerable species under the EPBC Act. The species typically occurs in streams and rivers from Sydney, southwards to the Otway Ranges of Victoria and in Tasmania (DAWE, 2022). Australian Grayling spends most of their life in freshwater with the larval and / or juvenile stages in coastal seas (Miles *et al.*, 2013). Spawning occurs in freshwater from late summer to winter, with exact timing dependant on many variables including latitude and temperature regimes (DAWE, 2022). They are a short-lived species, usually dying after their second year with a small proportion who may reach four or five years (Backhouse *et al.*, 2008).

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The Australian grayling has been identified as likely to occur in the operational area and is known to occur in the EMBA.

Porbeagle

The Porbeagle, also named Mackerel Shark (*Lamna nasus*) is listed as a migratory species under the EPBC Act. The Porbeagle is a wide-ranging, coastal and oceanic shark found in waters from southern Queensland to south-west Australia (DAWE, 2022). Primarily occupying oceanic waters and areas around the edge of the continental shelf, the species will occasionally move into coastal waters but these movements are temporary (DAWE, 2022). The species will dive to depths in excess of 1,300 m and is thought to be flexible in the type of habitat they use for foraging to prey upon bony fishes and cephalopods, catching prey in mid-water as well as at the seafloor (DAWE, 2022). It also conducts long-distance seasonal migrations, although the timing and details of these movements are not well understood (Saunders *et al.*, 2011).

The Porbeagle was identified as likely to occur within the operational area and EMBA.

Shortfin Mako Shark

The Shortfin Mako Shark (*Isurus oxyrinchus*) is listed as a migratory species under the EPBC Act. The species has a circum-global distribution inhabiting tropical and temperate waters (TSSC, 2014). It is a coastal, oceanic species recorded in offshore waters all around Australia's coastline, except for the Arafura Sea, Gulf of Carpentaria and Torres Strait (TSSC, 2014). The shortfin mako is highly migratory and can travel large distances, migrating from Australian waters to areas well beyond the Australian Exclusive Economic Zone (Rogers *et al.*, 2009). A recent study tagging sharks in southern Australian waters recorded a two metre juvenile female shortfin mako that travelled over 13,000 km in the Southern and Indian Oceans in approximately nine months (Rogers *et al.*, 2009). However, studies suggest that dispersal may be male-biased, with females having displaying breeding-ground fidelity due to the occurrence of gene flow between basins and hemispheres (Schrey and Heist, 2003). The diet of the Shortfin Mako consists mainly of fish and cephalopods (Last and Stevens, 2009).

The shortfin mako is taken as bycatch in a number of commercial fisheries operating in Australian waters (Stevens, 2008), and is also targeted by recreational fishers especially in game fishing activities (Rogers *et al.*, 2009). This activity is placing pressure on the population (TSSC, 2014).

The species has been regularly recorded in the SEMR (DoE, 2015) and due to their widespread distribution in Australian waters, shortfin mako sharks are likely to be present in the EMBA.

Whale Shark

The Whale Shark (*Rhinocodon typus*) is listed as a vulnerable and migratory species under the EPBC Act. They have a global distribution in tropical and warm temperate waters (DoE, 2015b). In Australia, the whale shark is most commonly seen in waters off Western Australia, Northern Territory and Queensland with isolated records for Victoria and South Australia (Last and Stevens, 2009). As an oceanic and coastal shark, the species is often seen far offshore with the occasional inshore appearance (DAWE, 2022). The Whale Shark is generally encountered close to or at the surface, as single individuals or occasionally in schools or aggregations of up to hundreds of sharks (Compagno, 1984). It is a suction filter-feeder species and feeds on a variety of planktonic and nektonic prey, including small crustaceans, small schooling fishes and, to a lesser extent, on small tuna and squid (Compagno, 1984; Last and Stevens, 2009).

It is unlikely that the Whale Shark will be present in the EMBA.

White Shark

The White Shark (*Carcharodon carcharias*) is listed as vulnerable and migratory under the EPBC Act. The species are widely distributed throughout temperate and subtropical regions (Bruce *et al.*, 2006; Last and Stevens, 2009). They are typically found from close inshore habitats (e.g. rocky reefs and shallow coastal bays) to the outer continental shelf and slope areas (Bruce, 1992; Bruce *et al.*, 2006; Bruce and Bradford, 2008). The SEMR supports a white shark population that is thought to move seasonally along the southern and eastern Australian coasts, moving north along the east coast during autumn and winter, and returning to southern Australian waters by early summer (Bruce *et al.*, 2006).

White sharks eat a variety of prey, including fish, other sharks and rays, marine mammals, squid and crustaceans (DEWHA, 2009). Juvenile white sharks feed on finfish, rays and other sharks and shift to include marine mammals when they reach approximately 3.4 m (Estrada *et al.*, 2006). A recent study has found that

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the energy requirements of adult white sharks may be several times higher than previously estimated, and that seasonal feeding on seal colonies is important in meeting these energy needs (Semmens *et al.*, 2013).

Distribution, breeding (nursery area) and foraging BIAs for the White Shark intersect the EMBA (Figure 4-13). It is therefore likely that White Sharks will be present in the EMBA.

Conservation Dependent Species

Blue Warehou

The Blue Warehou (*Seriolella brama*) is listed as conservation dependent under the EPBC Act. Globally, the blue warehou is confined to Australian and New Zealand waters (TSSC, 2015). Within the Australian Exclusive Economic Zone, the species occurs predominantly in coastal shelf, upper continental slope and seamount waters offshore from New South Wales, Tasmania, Victoria and South Australia (Bruce *et al.*, 1998; Gomon, 2008). The species occurs at depths between 3 and 550 m (Bray and Gomon, 2011), although it is more abundant in waters shallower than 200 m (Gavrilov and Markina, 1979).

Evidence suggests that there are perhaps two distinct stocks with samples to the east and west of the Bass Strait showing differences in spawning behaviour, larval distribution and size / age compositions (Talman *et al.*, 2004; Bruce *et al.*, 2002). However, results are inconclusive at this stage (Robinson *et al.*, 2008).

The blue warehou is taken in commercial fisheries working in southern Australian waters (TSSC, 2015). Historically, the species was taken as a byproduct species principally by gillnet fishers in Commonwealth managed fishing operations in southern Australian waters (AFMA, 2014). Currently, the blue warehou is caught as incidental byproduct in the Southern and Eastern Scalefish and Shark Fishery, which is managed by the Commonwealth statutory authority – the Australian Fisheries Management Authority (AFMA).

The species is also commercially targeted as part of the Tasmanian Scalefish Fishery, which is a multi-species and multi-gear fishery with many types and sizes of fishing vessels (DPIPWE, 2013). However, in recent years the blue warehou has not been considered a key component of the commercial catch in the Tasmanian Scalefish Fishery as fishers have invested in specialising their fishing operations towards targeting other species (TSSC, 2015).

It is possible the Blue Warehou will be present within the EMBA.

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Eastern School Shark

The School Shark (*Galeorhinus galeus*) is listed as conservation dependent under the EPBC Act. It is a world-wide distribution within temperate waters. In Australia, the species occurs in temperate coastal waters of southern Australia. They are found from Moreton Bay, in southern Queensland, to Perth, Western Australia, including offshore waters of Lord Howe Island and Tasmania (Pogonoski *et al.*, 2002). The School Shark moves extensively throughout the waters of southern Australia (TSSC, 2009). This species is mainly found in demersal waters, over the continental and insular shelves, but also over the upper slopes, in depths from near shore to 550 m (Last and Stevens, 1994). Inshore areas are particularly important as birthing and nursery sites (TSSC, 2009). The main threat operating against School Sharks has been identified as historic and ongoing fishing pressure with the species commercially fished and is primarily caught in the Gillnet, Hook and Trap (GHAT) sector of the Southern and Eastern Scalefish and Shark Fishery (SESSF) (DAWE, 2022).

The school shark is likely to be present within the EMBA.

Orange Roughy

The Orange Roughy (*Hoplostethus atlanticus*) is listed as conservation dependent under the EPBC Act. In Australia, Orange Roughy are found across the southern half of the continent, from central NSW, through to southwestern Australia, including Tasmania (Kailola *et al.*, 1993). They also occur around seamounts and ridges south of Australia and on the South Tasman and Lord Howe rises (DEW, 2007). The species is commercially fished with most Orange Roughy taken in Commonwealth waters are from 11 discrete management zones in the Southern and Eastern Scalefish and Shark Fishery (SESSF) (DAWE, 2022).

Orange roughy are likely to be present within the southern reaches of the EMBA.

Southern Bluefin Tuna

The Southern Bluefin Tuna (*Thunnus maccoyii*) is classified as critically endangered on the IUCN Red List of Threatened Species and was listed as a conservation dependent species under the EPBC Act. Adult Southern Bluefin Tuna in Australian waters, ranges widely from northern Western Australia to the southern region of the continent, including Tasmania, and to northern New South Wales, appearing in eastern Australian waters mainly during winter (DAWE, 2022). The species is a highly migratory species that occurs globally in waters between 30°S and 50°S, though is mainly found in the eastern Indian Ocean and in the south Western Pacific Ocean (DAWE, 2022).

Southern Bluefin Tuna are commercially targeted with juvenile Southern Bluefin Tuna are fished in the Great Australian Bight by Australian purse seine fishing vessels and taken to Port Lincoln where they are transferred to ocean cages where they are fed intensively for 6-8 months before being exported to Japan (DAWE, 2022). More than 95% of Australia's total catch is taken by this method (TSSC, 2010). The main threat to Southern Bluefin Tuna is historic and on-going fishing pressure.

Southern Bluefin Tuna are likely to be present in the operational area and EMBA.

Southern Dogfish

The Southern Dogfish (*Centrophorus zeehaani*) is listed as conservation dependent under the EPBC Act. Southern dogfish are small, deepwater sharks that are endemic to Australia and inhabit the upper-slope of the southern continental shelf between 180 m to 900 m (Williams *et al.*, 2012). They are a commercially fished species with life characteristics that make them vulnerable to overfishing, including slow growth rate, late age at maturity, low fecundity and low natural mortality (Stobutzki *et al.*, 2011). The core range for the species is from Newcastle, NSW around southern Australia to Mandurah south of Perth, Western Australia. However, the species is apparently absent from southern Tasmania through Bass Strait and from the Ceduna Terraces (TSSC, 2013). Therefore, there appears to be three distinct stocks of Southern Dogfish; an eastern stock along the east coast of Australia to eastern Tasmania, another central stock from western Tasmania through the Great Australian Bight, and then a third stock from the Great Australian Bight to south Western Australia (TSSC, 2013).

Southern Dogfish are likely to be present within the EMBA.

4.3.10 Seabirds and Migratory Shorebirds

A search of the EPBC Act Protected Matters database identified a total of 70 EPBC Act listed bird species, with potential to occur or have habitat within the EMBA. Of these, a total of 34 were listed as threatened and

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52 were listed as migratory bird species. Within the operational area a total of 42 EPBC Act listed birds (29 threatened species and 28 migratory listed) were identified.

Threatened and Migratory Species

Antipodean Albatross

The Antipodean albatross (*Diomedea antipodensis*) is listed as vulnerable and migratory under the EPBC Act.

Antipodean Albatrosses are a subspecies of the Wandering Albatross (*Diomedea exulans*) and are often difficult to distinguish. Adult Wandering Albatrosses are significantly larger, however juvenile Antipodean Albatrosses are very similar to juvenile Wandering Albatrosses.

The Antipodean Albatross is endemic to New Zealand and breeds on islands in the New Zealand subantarctic with egg-laying during the austral summer and fledging from December to March (ACAP, 2011). The species forages widely in open water in the south-west Pacific Ocean, Southern Ocean and the Tasman Sea, notably off the coast of NSW (Elliott and Walker, 2005; Environment Australia, 2001f; Garnett and Crowley, 2000).

A foraging BIA has also been identified for the Antipodean Albatross with the species likely to occur in the EMBA (Figure 4-14).

Australasian Bittern

The Australasian Bittern (*Botaurus poiciloptilus*) is listed as endangered under the EPBC Act. It is a large, stocky, thin-necked, heron-like bird (TSSC, 2019). In Australia, the population can be divided into two sub-populations, the south-eastern and south-western sub-populations. The south-eastern Australasian Bittern occurs from south-east Queensland to south-east South Australia as far as the Adelaide Region, southern Eyre Peninsula, Tasmania and in the southwest of Western Australia (Marchant and Higgins 1990; Garnett *et al.*, 2011). The diet of the Australasian bittern includes aquatic animals such as small fish, frogs, freshwater crayfish, spiders, insects and small reptiles. Breeding occurs from October to February (TSSC, 2019).

The Australasian bittern was identified as likely to occur in the operational area and known to occur within the EMBA.

Australasian Gannet

The Australasian Gannet (*Morus serrator*) is listed as marine under the EPBC Act with recognised foraging and aggregation BIAs within the EMBA (Figure 4-15).

The Australasian Gannet generally feeds over continental shelves or inshore waters on pelagic fish, especially pilchard, anchovies and jack mackerel, but also squid and garfish (DoE, 2015). Prey is caught mainly by plunge-diving, but it is also seen regularly attending trawlers.

Breeding is highly seasonal (October–May), nesting on the ground in small but dense colonies (DoE, 2015).

The Australasian Gannet was identified as known to breed within the EMBA and has recognised foraging and aggregation BIAs within the EMBA (Figure 4-15).

Australian Fairy Tern

The Australian fairy tern (*Sternula nereis nereis*) is listed as vulnerable under the EPBC Act. Within Australia, the Fairy Tern occurs along the coasts of Victoria, Tasmania, South Australia and Western Australia; occurring as far north as the Dampier Archipelago near Karratha. The sub-species has been known from New South Wales (NSW) in the past, but it is unknown if it persists there (Birdlife International 2010; Garnett and Crowley 2000). Breeding occurs between October to February on continental islands, coral cays, on sandy islands and beaches inside estuaries, and on open sandy beaches (DAWE, 2020).

The Australian fairy tern was identified as likely to breed within the operational area and known to occur within the EMBA.

Australian Painted Snipe

The Australian painted snipe (*Rostratula australis*) is listed as endangered under the EPBC Act. The painted snipe is a wading shorebird that has been recorded at wetlands in all states of Australia. It is most common in

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eastern Australia, where it has been recorded at scattered locations throughout much of Queensland, NSW, Victoria and south-eastern South Australia. It is generally seen singly or in pairs, or less often in small flocks (Marchant and Higgins, 1993).

The Australian painted snipe was identified as likely to occur within the operational area and known to occur within the EMBA.

Bar-tailed Godwit

The bar-tailed godwit (*Limosa lapponica*) is a listed migratory species under the EPBC Act. It is a large wader slightly bigger and stockier than the black-tailed godwit (*Limosa limosa*). They have been recorded in coastal areas of all Australian states. It is widespread in the Torres Strait and along the east and south-east coasts of Queensland, NSW and Victoria, including the offshore islands. The Bar-tailed Godwit is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh (Marchant and Higgins 1993). This godwit species breeds in the Northern Hemisphere and moves south for the Northern Hemisphere winter. They usually forage near the edge of water or in shallow water, preferring soft mud, mainly in estuaries and harbours. They have been known to forage among mangroves, coral reefs and rock platforms.

The bar-tailed godwit is likely to occur in the operational area and known to occur within the EMBA.

Black-browed Albatross

The black-browed albatross (*Thalassarche melanophris*) is listed as vulnerable and migratory under the EPBC Act. It has a circumpolar distribution and is found over Antarctic, subantarctic and sub-tropical waters (DoE, 2015). Breeding occurs within Australian waters on Heard Island, McDonald Islands, Macquarie Island and Bishop and Clerk Islets. Individuals are mostly confined to sub-Antarctic and Antarctic waters surrounding these islands in the breeding season. The population migrates northward towards the end of the breeding season and the species is common in the non-breeding period at the continental shelf and shelf-break of South Australia, Victoria, Tasmania, western and eastern Bass Strait and NSW. Individuals are also observed at these times in lesser numbers at the continental shelf break of southern and south-western WA (DAWE, 2020).

A foraging BIA has been identified for the Black-browed Albatross within the operational area and EMBA (Figure 4-16) with the species likely to occur.

Black-faced Cormorant

The black-faced cormorant (*Phalacrocorax fuscescens*) is listed as marine under the the EPBC Act. This species has a recognised foraging BIA within the LOWC EMBA (Figure 4-17).

The black-faced cormorant feeds in coastal waters, sometimes in sheltered places such as bays and islets and can be found entering rivers along the Victorian coast (DoE, 2015). Their diet consists of a variety of fish through pursuit-diving, sometimes in flocks of up to several thousand individuals (DoE, 2015). Breeding usually occurs on rocky islands, but also on stacks, slopes and sea cliffs in colonies of up to 2500 individuals (del Hoyo *et al.*, 1992).

The black-faced cormorant was identified as known to breed within the operational area and EMBA. The species also has a recognised foraging BIA within the LOWC EMBA (Figure 4-17).

Black-tailed Godwit

The black-tailed godwit (*Limosa limosa*) is a listed migratory species under the EPBC Act. This large wader occurs singularly or in groups and associates with other waders throughout the coastal regions of Australia. The largest populations are found between Darwin and Weipa in the NT, with small numbers found elsewhere (Watkins, 1993). The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mud and sandflats, and occasionally on rocky coasts. Their diet consists of worms, crustaceans, bivalves and fish eggs. The black-tailed godwit does not breed in Australia. They arrive in north-west Australia from late August and depart during March and April to breed in the northern hemisphere.

The black-tailed godwit was identified as known to roost within the EMBA.

Blue Petrel

The blue petrel (*Halobaena caerulea*) is listed as vulnerable under the EPBC Act. The blue petrel has a circumpolar distribution ranging from the pack ice to 30° S (DAWE, 2020). It breeds on offshore stacks near Macquarie island (500-600 breeding pairs).

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The blue petrel may occur within the operational area and EMBA.

Broad-billed Sandpiper

The broad-billed sandpiper (*Limicola falcinellus*) is a listed migratory seabird under the EPBC Act and breeds in the northern hemisphere, moving south for the non-breeding season. In Australia, the Broad-billed Sandpiper is most common on the north and north-west coasts and occur regularly at scattered localities in southern Australia, where they are usually seen singly (DAWE, 2022). In Victoria, they are an annual visitor in small numbers in coastal regions, with rare inland records (DAWE, 2022).

The broad-billed sandpiper was identified as known to breed within the EMBA.

Buller's Albatross

The Buller's Albatross (*Thalassarche bulleri*) is listed as vulnerable and migratory under the EPBC Act. The species breed in New Zealand but are regular visitors to Australian waters (DAWE, 2022). This species is marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean (Marchant and Higgins, 1990) and mainly present around Tasmania from January to April (Environment Australia, 2001). Buller's Albatross feeds mostly on squid, supplemented by fish, krill and tunicates (Marchant and Higgins 1990).

The operational area and EMBA are recognised as overlapping a foraging BIA for the species (Figure 4-18).

Campbell Albatross

The Campbell albatross (*Thalassarche melanophris impavida*) is listed as vulnerable and migratory under the EPBC Act. The Campbell albatross is a sub-species of the Black-browed Albatross and is a non-breeding visitor to Australian waters. The Campbell albatross only breeds on Campbell Island, south of New Zealand with breeding occurring annually from early August to May (ACAP, 2011). The population migrates northward towards the end of the breeding season and the species is common during the non-breeding period in continental shelf waters around Australia, New Zealand and the Pacific Islands (DAWE, 2020).

The Campbell Albatross has a foraging BIA that overlaps the operational area and EMBA (Figure 4-19).

Common Greenshank

The common greenshank (*Tringa nebulosa*) is a listed migratory species under the EPBC Act. It is a heavily built, elegant wader, seen singly or in small to large flocks (sometimes with hundreds) in a variety of coastal and inland wetlands (Higgins and Davies, 1996). It does not breed in Australia; however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia (Higgins & Davies, 1996).

The common greenshank is likely to occur in the operational area and is known to occur in the coastal sections of the EMBA.

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Common Sandpiper

The common sandpiper (*Actitis hypoleucos*) is listed as a migratory species under the EPBC Act. Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers, although most concentrated in northern and western Australia (DAWE, 2022). The species inhabits a wide range of coastal wetlands, and is most often found around the muddy margins, mangroves and rocky shores (DAWE, 2022). Their diet consists of bivalves, crustaceans, and a variety of insects and are mostly found in coastal and inland locations.

The common sandpiper is known to occur within the operational area and EMBA's.

Common Noddy

The common noddy (*Anous stolidus*) is listed as migratory under the EPBC Act. There are four sub-species of the common noddy recognised, but only the sub-species *Anous stolidus pileatus* occurs in the Australian region. It occurs mainly off the Queensland coast, but also off the northwest and central WA coast.

The migratory movements of the species are poorly known. The common noddy is a gregarious bird, normally occurring in flocks, sometimes of hundreds of individuals, when feeding or roosting. They feed mainly on fish, but are also known to take squid, pelagic molluscs and aquatic insects by dipping or skimming the sea surface. The species usually feeds during the day, but will also feed at night when there is a full moon. Timing of breeding varies between sites and may be annual, or twice a year. On some islands, the species is known to breed throughout the year.

The common noddy is likely to occur within the EMBA.

Curlew Sandpiper

The curlew sandpiper (*Calidris ferruginea*) is listed as critically endangered and migratory shorebird under the EPBC Act. Curlew sandpiper breeding grounds occur in Siberia and they reach the northern shores of Australia in late August and early September (Higgins and Davies, 1996). Curlew sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast. This species forages mainly on invertebrates, including worms, molluscs, crustaceans, and insects, as well as seeds.

The curlew sandpiper was identified as may occur within the operational area and known to occur in the EMBA's.

Double-banded Plover

The double-banded plover (*Charadrius bicinctus*) is a listed migratory species under the EPBC Act. The double-banded plover can be found in both coastal and inland areas. During the non-breeding season, it is common in eastern and southern Australia, mainly between the Tropic of Capricorn and western Eyre Peninsula, with occasional records in northern Queensland and Western Australia (Marchant and Higgins, 1993). The Double-banded Plover is found on littoral, estuarine and fresh or saline terrestrial wetlands and also saltmarsh, grasslands and pasture. It occurs on muddy, sandy, shingled or sometimes rocky beaches, bays and inlets, harbours and margins of fresh or saline terrestrial wetlands such as lakes, lagoons and swamps, shallow estuaries and rivers. The species is sometimes associated with coastal lagoons, inland saltlakes and saltworks. It is also found on seagrass beds, especially *Zostera*, which, when exposed at low tide, remain heavily saturated or have numerous water-filled depressions. This species sometimes utilises kelp beds (R.J. Pierce in Marchant and Higgins 1993; DAWE, 2021).

The double-banded plover was identified as having roosting habitat that is known occur within the EMBA's.

Eastern Curlew

The eastern curlew (*Numenius madagascariensis*) is listed as a critically endangered and migratory under the EPBC Act. Within Australia, this shorebird has a primarily coastal distribution and is found in all states, particularly the north, east, and southeast regions including Tasmania. They have a continuous distribution from Barrow Island and Dampier Archipelago, through the Kimberley and along the Northern Territory, Queensland, and NSW coasts and the islands of Torres Strait. They are patchily distributed elsewhere. The eastern curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. They are often recorded among saltmarsh and on mudflats fringed by mangroves, and sometimes use the

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mangroves. This shorebird is carnivorous, mainly eating crustaceans (including crabs, shrimps and prawns), small molluscs, as well as some insects.

The eastern curlew may occur within the operational area and is known to occur within the EMBA.

Eastern Hooded Plover

The Eastern Hooded Plover (*Thinornis cucullatus cucullatus*) is listed as vulnerable under the EPBC Act. The species is widely dispersed on or near sandy beaches in south-eastern Australia with a range that extends from Jervis Bay in New South Wales to Fowlers Bay in South Australia and includes Tasmania and various offshore islands such as Kangaroo Island, King Island and Flinders Island (Marchant and Higgins, 1993; Garnett *et al.*, 2011). It occurs in low densities in Victoria, which has about 570 individuals. Hooded plovers may be observed singly, in pairs, family groups or flocks on ocean beaches, creek mouths and inlet entrances. It may also occur on near-coastal saline and freshwater lakes and lagoons, tidal bays and estuaries, on rock platforms, or on rocky or sandy reefs close to shore (Marchant and Higgins, 1993; Garnett *et al.*, 2011).

The hooded plover (eastern) is a largely sedentary species and maintains relatively constant territories from year to year, with 95% moving over distances of less than 20 km (Weston *et al.*, 2009). The diet of hooded plovers consists of polychaetes, molluscs, crustaceans, insects, turions and seeds. Foraging occurs during day and night at all levels of the beach, from the water's edge to the base of the fore-dune, and on lagoons and salt pans (Marchant and Higgins, 1993; Weston, 2003).

The species may occur within the operational area and is known to occur within the EMBA.

Fairy Prion (Southern)

The fairy prion (southern) (*Pachyptila turtur subantarctica*) is listed as vulnerable under the EPBC Act. It breeds on Macquarie Island, Langdon Point, Davis Point and Bishop and Clerk islands (Garnett and Crowley, 2000). There are 80 to 250 breeding pairs in Australia and a global population of ~80,000 (DAWE, 2020). Some individuals migrate towards New Zealand and southern Australia in winter.

The fairy prion (southern) was identified as known to occur within the operational area and EMBA.

Flesh-Footed Shearwater

The flesh-footed shearwater (*Ardenna carneipes*) is a listed migratory species under the EPBC Act. It is a large broad-winged shearwater that typically forages over continental shelves / slopes and occasionally inshore waters. It is a trans-equatorial migrant widely distributed across the south-western Pacific during breeding season (early September to early May) with the distribution of the shearwater is mainly off southern Australia migrating between breeding colonies in the southern Indian and south-western to north-western Pacific Ocean (Marchant and Higgins, 1993). The species breeds in burrows on sloping ground in coastal forest, scrubland, shrubland or grassland, the majority of which lie off the coast of southern Western Australia, with the remaining being Smith Island (SA) and Lord Howe Island. The flesh-footed Shearwater feeds on small fish, cephalopod molluscs (squid, cuttlefish, nautilus and argonauts), crustaceans (barnacles and shrimp), other soft-bodied invertebrates (such as *Velilla*) and offal. The species forages almost entirely at sea and very rarely on land.

The flesh-footed shearwater is likely to occur within the operational area and is known to occur within the wider EMBA.

Fork-Tailed Swift

The fork-tailed swift (*Apus pacificus*) is a listed migratory species under the EPBC Act. It is a medium to large swift that migrates between Australia and its breeding grounds in Siberia. The swift usually arrives in Australia around October and departs in April, passing via Indonesia (Higgins, 1999). Whilst in Australia the swift is highly mobile occurring mostly over inland plains but also coastal areas, over cliffs and on beaches.

The fork-tailed swift was identified as likely to occur within the operational area and EMBA, most likely between October and April.

Great Knot

The great knot (*Calidris tenuirostris*) is listed as critically endangered and a migratory shorebird under the EPBC Act. The great knot has a global distribution, breeding in northeast Siberia and spending the non-breeding season along coasts from Arabia to Australia. Non-breeding birds migrate to inlets, bays, harbours, estuaries and lagoons with large intertidal mud and sand flats where they feed on bivalves, gastropods, crustaceans and other invertebrates (Higgins and Davies 1996 in Garnett *et al.*, 2011). The greatest numbers

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of the species are found in northern Australia, between the Pilbara and the Kimberley. The species typically roosts in the fringing vegetation surrounding coastal inlets where damp sediments lower temperatures.

The great knot was identified as known to roost within the EMBA.

Greater Crested Tern

The crested tern (*Thalassarche bergii*) is listed as a migratory species under the EPBC Act. The crested tern inhabits tropical and subtropical coastlines and forages in the shallow waters of lagoons, coral reefs, bay, harbours, inlets and estuaries; along sandy, rocky, coral or muddy shores; on rocky outcrops in open sea; in mangrove swamps; and in offshore and pelagic waters (Higgins and Davies, 1996). The crested tern usually feeds from the surface of the sea to less than 1 m water depth but can also forage well out to sea. Its diet consists predominantly of pelagic fish, although it will also feed on crustaceans, insects and hatchling turtles opportunistically. The crested tern shows a preference for nesting on offshore islands, low-lying coral reefs, low-lying coral reefs, sandy or rocky coastal islets, coastal spits and lagoon mudflats.

The Greater crested tern was identified as known to breed within the EMBA.

Greater Sand Plover

The greater sand plover (*Charadrius leschenaultia*) is listed as vulnerable and migratory under the EPBC Act. This plover breeds in China, Mongolia and Russia, and spends the non-breeding season along coasts from Japan through Southeast Asia to Australasia, (Bamford *et al.*, 2008). Non-breeding birds occur along all Australian coasts, especially in the north for the greater sand plover. Non-breeding birds forage on beaches, saltmarshes, coastal bays and estuaries, and feed on marine invertebrates including molluscs, worms, crustaceans and insects (Marchant and Higgins 1993 in Garnet *et al.*, 2011). The species typically roosts higher up the beach well above the high water mark of sand spits, rocky lagoons or salt marsh.

The greater sand plover was identified as likely to occur within the MDO EMBA and known to occur within the wider EMBA.

Grey-headed Albatross

The grey-headed albatross (*Thalassarche chrysostoma*) is listed as endangered and migratory under the EPBC Act. In Australian territory, Grey-headed Albatross breed on the southern and western flanks of Petrel Peak, Macquarie Island (Copson, 1988). The Grey-headed Albatross has bred in this same restricted area on Macquarie Island for at least the past 30 years (Terauds *et al.*, 2005). This nesting area has been included on the EPBC Act register of Critical Habitat. Macquarie Island is classified as a World Heritage Area, a Biosphere reserve and a National Estate property. The entire island is also classified as a Tasmanian Nature Reserve and is managed by the Tasmanian Parks and Wildlife Service. Breeding and non-breeding birds disperse widely across the Southern Ocean, at more southerly latitudes in summer than in winter, when they frequent the waters off southern Australia and New Zealand (Marchant & Higgins, 1990; Waugh *et al.*, 1999a). Most Australian records come from south and west of Tasmania, occasionally in Victorian waters, rarely in South Australia and Western Australia, and only as a vagrant in NSW. It has only been recorded once in southern Queensland (DEWHA, 2009s; Marchant and Higgins, 1990). The Grey-headed Albatross is marine, pelagic and migratory. Its habitat includes subantarctic, subtropical, and occasionally Antarctic waters in the Pacific, Indian, Atlantic and Southern Oceans (DAWE, 2021).

The grey-headed albatross was identified as having habitat that may occur within the operational area and EMBA.

Grey Plover

The grey plover (*Pluvialis squatarola*) is a listed migratory species under the EPBC Act. It is a medium-sized plover that is found solitary, in small flocks, and larger flocks at communal roosts often with other waders. Widespread in coastal regions of Australia, it inhabits sheltered embayments, estuaries and lagoons with mud and sand flats, occasionally on rocky coasts with wave cut platforms. Their diet consists of mostly molluscs, insects, crustaceans and polychaete worms. The grey plover arrive in northern Australia from August to September where they remain until April when they return to their breeding grounds in northern Siberia.

The grey plover was identified as known to roost within the EMBA.

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Grey-tailed Tattler

The grey-tailed tattler (*Tringa brevipes*) is listed as a migratory species under the EPBC Act. This medium-sized wader is found in most coastal regions in Australia, but primarily in the north. The species is rarely recorded in Victoria, however sightings have been reported in Gippsland, and east of McLaughlans Beach. The largest populations in Victoria are located at Corner Inlet, west to Western Port and Port Phillip Bays. It has occasionally been sighted on the west coast near Killarney, Port Fairy and Discovery Bay. Sightings have also been reported at Sperm Whale Head (Higgins and Davies 1996). The bird is often found on sheltered coasts with reefs and rock platforms or intertidal mudflats. Their diet consists primarily of worms, molluscs, crustaceans, insects and occasionally fish. The grey-tailed tattler breeds in Siberia and moves south for the boreal winter, arriving in Australia around August and departing for its breeding grounds by early or mid-April.

The grey-tailed tattler was identified as known to roost within the EMBA.

Indian Yellow-nosed Albatross

The Indian yellow-nosed albatross (*Thalassarche carter*) is listed as vulnerable and migratory under the EPBC Act. This species forages mostly in the southern Indian Ocean where it is particularly abundant off WA. It also breeds on islands of the southern Indian Ocean. In breeding and non-breeding seasons, the species concentrates over the productive waters of continental shelves, often at coastal upwellings and the boundaries of currents (DAWE, 2020).

A foraging BIA was identified for the Indian yellow-nosed albatross within the operational area and EMBA.. (Figure 4-21).

Latham's Snipe

Latham's Snipe (*Gallinago hardwickii*) is listed as migratory under the EPBC Act. It is a non-breeding visitor to south-eastern Australia, preferring to breed in Japan and far eastern Russia during the northern summer and then migrating to Australia, where it remains for the duration of the northern winter (DAWE, 2022). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia and is widespread in Tasmania and found in all regions of Victoria except for the north-west (DAWE, 2022). Often the distribution of Latham's Snipe is fragmented due to the fragmentation of preferred habitat, that being freshwater wetlands (DAWE, 2022). The species is an omnivore, feeding on seeds and other plant material as well as insects, worms and occasionally molluscs, isopods and centipedes (Frith *et al.*, 1977; Todd, 2000).

Latham's Snipe was identified as likely to occur in the operational area and is known to occur in the EMBA.

Lesser Sand Plover

The lesser sand plover (*Charadrius mongolus*) is listed as endangered and migratory under the EPBC Act. Within Australia, the Lesser Sand-Plover is widespread in coastal regions, and has been recorded in all states. The species does not breed in Australia. They roost near foraging areas, on beaches, banks, spits and banks of sand or shells, and occasionally on rocky spits, islets or reefs (DAWE, 2021).

The lesser sand plover was identified as known to roost within the EMBA.

Little Curlew

The little curlew (*Numenius minutus*) is listed as a migratory species under the EPBC Act. The Little Curlew is most often found feeding in coastal swamps, mudflats or sandflats of estuaries or beaches on sheltered coasts, mown lawns, gardens, recreational areas, ovals, racecourses and verges of roads and airstrips are also used (Higgins & Davies 1996). rarely occurs in Victoria, but has been recorded east of Wilson's Promontory and at Lake Tyers, Lake Wellington and Shallow Inlet, around Port Phillip Bay, and also from lakes in the western Victoria and in the region of Mystic Park (Higgins and Davies 1996).

The little curlew was identified as likely to roost within the EMBA.

Little Penguin

The Little Penguin (*Eudyptula minor*) is listed as a marine species under the EPBC Act and has a recognised breeding and foraging BIA within the EMBA (Figure 4-22). This species is the smallest of all penguins, standing about 30-35 cm in height and weighing approximately 1 kg when fully grown (DoE, 2015). Little Penguins are not endemic to the South-east Marine Region but the Bass Strait hosts 60 per cent of the known

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breeding population in Australia (Dann, 2013). Individuals exhibit strong site fidelity, returning to the same breeding colony each year to breed in the winter and spring months (Gillanders et al., 2013).

The diet of a Little Penguin includes small school fish, squid and krill. Prey is typically caught with rapid jabs of the beak and swallowed whole.

The Little Penguin was identified as known to breed in the operational area and EMBA's with a breeding and foraging BIA recognised within the EMBA's (Figure 4-22).

Little Tern

The Little Tern (*Sternula albifrons*) is listed as a migratory species under the EPBC Act. The Australian breeding population can be divided into two major subpopulations: a northern subpopulation that breeds across northern Australia, and an eastern subpopulation that breeds on the eastern and south-eastern coast of the mainland and northern and eastern Tasmania, occasionally extending as far west as western Victoria and south-eastern South Australia (DAWE, 2022). Breeding for the eastern subpopulation occurs during the austral spring-summer with nesting taking place in their preferred habitat of sand-splits, banks, ridges or islets in sheltered coastal environments (DAWE, 2022). Little Terns forage in shallow waters of estuaries, coastal lagoons and lakes, frequently over channels next to spits and banks or entrances, and often close to breeding colonies. They also forage along open coasts, especially around bars off the entrances to rivers and lagoons, less often at sea, and usually within 50 m of shore (DAWE, 2022). They feed mainly on small fish, crustaceans, insects, annelids and molluscs.

The Little Tern was identified as having habitat that may occur in the operational area and EMBA's.

Marsh Sandpiper

The marsh sandpiper (*Tringa stagnatilis*) is listed as a migratory species under the EPBC Act. The Marsh Sandpiper breeds from eastern Europe to eastern Siberia. The Marsh Sandpiper is found on coastal and inland wetlands throughout Australia. In Victoria, most are found in Port Phillip Bay, but also Gippsland, Westernport Bay and the Western Districts (DAWE, 2022). The Marsh Sandpiper lives in permanent or ephemeral wetlands where they also forage for insects, molluscs and crustaceans in shallow water (DAWE, 2022).

The marsh sandpiper has been identified as known to roost within the EMBA's.

Northern Giant Petrel

The northern giant petrel (*Macronectes halli*) occupies the Antarctic Polar Front (DAWE, 2021b). In summer, it occurs predominantly in sub-Antarctic to Antarctic waters, usually between 40°S and 64°S. The northern giant-petrel breeds on sub-Antarctic islands and visits areas off the Australian mainland mainly during winter months (May – October) (DAWE, 2021). Its breeding range extends into the Antarctic zone at South Georgia. It nests in coastal areas where vegetation or broken terrain offers shelter, on sea-facing slopes, headlands, in the lee of banks, under or against vegetation clumps, below cliffs or overhanging rocks, or in hollows. The northern giant petrel eats seal, whale, and penguin carrion, and seal placentae. It often attends and follows ships to obtain offal. It also eats substantial quantities of euphausiids (krill) and other crustaceans, cephalopods (octopus and squid), fish and a wide variety of seabirds (DAWE, 2021b).

The northern giant petrel may occur within the operational area and are likely to forage within the EMBA's.

Northern Royal Albatross

The northern royal albatross (*Diomedea sanfordi*) is listed as endangered and migratory under the EPBC Act. The northern royal albatross has a circumpolar distribution being most common between 36° S to at least 52° S with most sightings confined to the shelf edge and slope. Within Australia, they are regularly recorded throughout the year around Tasmania and SA at the edge of the continental shelf, and infrequently in waters off NSW (DSEWPaC, 2011b).

The northern royal albatross was identified as likely to have foraging behaviours within the operational area and EMBA's.

Orange-bellied Parrot

The Orange-bellied Parrot (*Neophema chrysogaster*) is listed as critically endangered under the EPBC Act. The species is endemic to south-eastern Australia with non-breeding birds usually found along the coast of South Australia and Victoria (DELWP, 2016). Orange-bellied Parrots migrate to breed in Melaleuca in south-

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west Tasmania in summer with birds arriving in early October and departing after the breeding season usually in March and April (TSS,2021). After breeding, migrating birds move northwards up the west coast of Tasmania via King Island to the mainland during autumn (Holdsworth, 2006). The southward migration tends to be rapid (Stephenson, 1991), while northward migration in autumn across western Bass Strait is more prolonged (Higgins, 1999).

On the mainland, birds are usually found in locations associated with coastal saltmarshes and adjacent pastures, close to free-standing water bodies (DELWP, 2016). The parrot's breeding habitat is restricted to southwest Tasmania, where breeding occurs from November to mid-January mainly within 30 km of the coast (Brown and Wilson, 1980). During winter, on mainland Australia, Orange-bellied Parrots are found mostly within 3 km of the coast (DELWP, 2016).

Given its habitat preferences, this species is expected to occur within the EMBA and is likely to occur in the operational area.

Osprey

The osprey (*Pandion haliaetus*) is a listed migratory species under the EPBC Act. It is a medium-sized raptor that primarily inhabits coastal and estuarine habitats (Marchant and Higgins, 1993). The species prefers littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands (DAWE, 2020). Breeding range extends around the northern coast of Australia from Albany in WA to Lake Macquarie in NSW, with a second breeding population on the coast of SA. The total range of the species is much more widespread (DAWE, 2020).

The osprey was identified as known to occur within the EMBA's.

Pacific Golden Plover

The Pacific golden plover (*Pluvialis fulva*) is listed as migratory under the EPBC Act. Within Australia, the Pacific Golden Plover is widespread in coastal regions with most Pacific Golden Plovers occurring along the east coast and are especially widespread along Queensland and New South Wales coastlines (DAWE, 2022). Scattered records for the species exist in the south-east. The species is often also recorded on Australia's outlying islands, including Lord Howe and Norfolk Islands, as well as on Christmas and Cocos-Keeling Islands in the Indian Ocean (DAWE, 2021).

As the Pacific Golden Plover is a migratory species, it will breed in the Northern Hemisphere and fly south for the boreal winter (DAWE, 2022). The species is present in Australia mostly between September and May inhabiting coastal habitats, though occasionally occurring around inland wetlands. Pacific Golden Plovers usually occur on beaches, mudflats and sandflats (sometimes in vegetation such as mangroves, low saltmarsh such as *Sarcocornia*, or beds of seagrass) in sheltered areas including harbours, estuaries, and lagoons, and also in evaporation ponds in saltworks. The species is also sometimes recorded on islands, sand and coral cays and exposed reefs and rocks (DAWE, 2021).

The Pacific golden plover was identified as known to roost within the EMBA's.

Pectoral Sandpiper

The pectoral sandpiper (*Calidris melanotos*) is a listed migratory species under the EPBC Act. This small-medium wader spends non-breeding seasons across Australia, with Victorian records of the Pectoral Sandpiper mainly occurring from Port Phillip Bay and the valley of the Murray River between Kerang and Piangil. It has also been recorded at Coronet Bay (in Westernport Bay), Wimmera and Mallee (Higgins and Davies, 1996). The species feeds on algae, seeds, crustacean and insects. This species is most commonly found around coastal areas.

The pectoral sandpiper may occur within the operational area and is known to occur in the EMBA's.

Pin-tailed Snipe

The pin-tailed snipe (*Gallinago stenura*) is listed as a migratory species under the EPBC Act. The species distribution within Australia is not well understood. There are confirmed records from NSW, south-west Western Australia, Pilbara and the Top End. In NSW a single banded bird was reported near West Wyalong. In Western Australia the species was reported at Pilbara, Port Headland, Myaree Pool, Maitland River and near Karratha. In Pilbarra the distribution is believed to be bound by Pardoo (Banningarra Spring) and the lower Maitland River and Shay Gap. The Pin-tailed Snipe has also been reported on the Cocos-Keeling Islands

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as well as Christmas Island (Higgins and Davies 1996) (DAWE, 2021). During non-breeding period the Pin-tailed Snipe occurs most often in or at the edges of shallow freshwater swamps, ponds and lakes with emergent, sparse to dense cover of grass/sedge or other vegetation (DAWE, 2022).

The pin-tailed snipe has been identified as likely to roost within the EMBA.

Red-necked Phalarope

The red-necked phalarope (*Phalaropus lobatus*) is listed as a migratory species under the EPBC Act. The Red-necked Phalarope breeds in the Arctic and sub-Arctic North America, Europe and Russia. In Victoria, the species has been sighted at the Werribee Sewage Farm, Altona, Seaholme, Lake Connemara, Lake Tutcheop, Lake Victoria, Point Lonsdale, Lake Murdeduke and Lake Buloke. There have also been unconfirmed reports at the Laverton Saltworks (Higgins and Davies 1996). During non-breeding periods, the Red-necked Phalarope occurs mainly at sea and in Australia is recorded at both inland and coastal lakes and swamps (Higgins and Davies, 1996).

The red-necked phalarope has been identified as known to roost within the spill EMBA.

Red-necked Stint

One of the smallest shorebirds in Australia, the red-necked stint (*Calidris ruficollis*) is a listed migratory species under the EPBC Act. It is found in all states and territories with large densities on the Victorian and Tasmanian coasts inhabiting coastal areas such as bays, sheltered inlets, lagoons and estuaries. The species is present in Australia during the non-breeding season from August through to late September.

The red-necked stint was identified as known to roost within the EMBA.

Red Knot

The red knot (*Calidris canutus*) is listed as endangered and migratory under the EPBC Act. The red knot breeds in Siberia and spends the non-breeding season in Australia and New Zealand. The non-breeding season is spent on tidal mudflats or sandflats where the omnivorous species feeds on intertidal invertebrates, especially shellfish (Garnet *et al.*, 2011). Although the species is found throughout main suitable habitats in Australia, it is considered widespread along the coast south of Townsville, Queensland, and along the coasts of NSW and Victoria but not further west than Warranbool (DAWE, 2022).

The red knot was identified as may occur within the operational area and known to occur within the EMBA.

Ruddy Turnstone

The ruddy turnstone (*Arenaria interpres*) is a listed migratory species under the EPBC Act. This medium-size bird is widespread within Australia during its non-breeding period of the year, when it is found in most coastal regions. It prefers rocky shores or beaches where there is plenty of stranded seaweed.

The ruddy turnstone was identified as known to roost within the EMBA.

Salvin's Albatross

Salvin's Albatross (*Thalassarche salvini*) is listed as vulnerable and migratory under the EPBC Act. It is a non-breeding visitor to Australian waters that occurs in subantarctic and subtropical waters (DAWE, 2022). The species feeds primarily in shelf waters, takes food from the surface or just below and has been observed diving to depths of two metres or more for offal (Nicholls 1979). The birds have been known to scavenge at commercial feeding grounds (Marchant and Higgins 1990) and also commonly follow fishing boats.

Salvin's Albatross was identified as likely to forage in the operational area and EMBA.

Sanderling

Sanderling (*Calidris alba*) is a listed migratory species under the EPBC Act and occurs in most coastal areas. In Victoria, they are regular around Corner Inlet, Shallow Inlet and Wilson's Promontory, and on the southwest coast between Killarney and Nelson. In eastern Victoria they have been recorded at Mallacoota, Lakes Entrance and Kalimna. Widespread records occur between Venus Bay and the southern Bellarine Peninsula, west to Breamlea, with a few isolated records from further west at Anglesea and Apollo Bay (DAWE, 2022). The species has a circumpolar breeding distribution, migrating south to spend the non-breeding season predominantly on sandy coastal shores of all continents except Antarctica. Sanderling are omnivorous,

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foraging on beaches, mudflats and on the edges of shallow pools feeding on plants, seeds, worms, crustaceans, insects, and occasionally on fish, larger molluscs, and crustaceans taken as carrion.

Sanderling was identified as known to roost within the EMBA.

Sharp-Tailed Sandpiper

The sharp-tailed sandpiper (*Calidris acuminata*) is listed as a migratory species under the EPBC Act and spends the non-breeding season in Australia. The species is known to be widespread in coastal areas of Victoria (DAWE, 2022). They also occasionally occur on islands in the Bass Strait. The species inhabits intertidal mudflats, sheltered bays, inlets, estuaries and seashores. Foraging habitat includes the edge of the water of wetlands or intertidal mudflats, either on bare wet mud or sand, or in shallow water. They also forage among inundated vegetation of saltmarsh, grass or sedges for seeds, worms, molluscs, crustaceans and insects (Higgins and Davies, 1996). The species are common throughout Australia between August and March.

The sharp-tailed sandpiper may occur within the operational area and is known to roost in the EMBA.

Short-tailed Shearwater

The Short-tailed Shearwater (*Ardenna tenuirostris*) is listed as migratory under the EPBC Act. The Short-tailed Shearwater migrates to the Northern hemisphere for the austral winter and generally only present in Australian waters from September to May. They are common in the South-east Marine Region and largely found on numerous islands off Victoria and Tasmania during breeding (Baker and Hamilton 2013; (Skira *et al.*, 1996). During breeding they conduct a bimodal feeding strategy, alternating short foraging trips to local waters with long foraging trips (up to 17 days) to the Polar Frontal Zone. Diet includes fish (particularly myctophids), crustaceans and squid (Weimerskirch and Cherel, 1998). Feeding occurs in flocks of up to 20,000 birds, and it has been seen associated with cetaceans.

A breeding and foraging BIA has been identified within the EMBA (Figure 4-23).

Shy Albatross

The shy albatross (*Thalassarche cauta cauta*) is listed as vulnerable and migratory under the EPBC Act. The shy albatross appears to occur in all Australian coastal waters below 25°S. It is most commonly observed over the shelf waters around Tasmania and south-eastern Australia (DAWE, 2020). Breeding occurs on Albatross Island, Bass Strait, and Mewstone and Pedra Branca, off southern Tasmania. The shy albatross feeds in waters over the continental shelf as well as within harbours and bays (DAWE, 2020). This species may occur within the EMBA; although it is not an area this species uses for breeding or resting, however, it may be used as foraging ground with a foraging BIA recognised for the operational area and EMBA (Figure 4-24).

Soft-plumaged Petrel

The soft-plumaged petrel (*Pterodroma mollis*) is listed as vulnerable under the EPBC Act. This marine bird is found in temperate and sub-Antarctic regions. The petrel is a regular and quite common visitor to southern Australian seas, but is more common on the west than in the south and southeast (Marchant & Higgins, 1990). The population in Australia is currently unknown. Breeding is believed to take place on south Australian islands with fledglings dispersing mainly northwards during May and June.

The soft-plumaged petrel may occur within the operational area and the EMBA.

Sooty Albatross

The sooty albatross (*Phoebastria fusca*) is listed as vulnerable and migratory under the EPBC Act. The sooty albatross breeds on islands in the southern Indian and Atlantic Oceans, and forages south of 30°S, between southern NSW and Argentina (DAWE, 2020). In Australia, it has sometimes been observed foraging in inshore waters in southern Australia. The sooty albatross is a rare, but probably regular migrant to Australia, mostly in autumn and winter. The sooty albatross flies within 10 to 15 m of the sea surface, using updrafts from wave fronts for lift. It forages at the sea surface feeding on fish, cephalopods, crustaceans and penguin carrion (DAWE, 2020).

The sooty albatross is likely to occur within the operational area and EMBA.

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Sooty Shearwater

The sooty shearwater (*Ardenna grisea*) is a listed migratory species under the EPBC Act. It is found in the southern hemisphere during summer. This species breeds around New Zealand, southern Australia and southern South America (DAWE, 2021). In winter, these birds move to the North Pacific Ocean, but some move into the North Atlantic Ocean, or remain in the southern hemisphere (DAWE, 2021). It feeds on a wide variety of pelagic prey, including cephalopods, fish and crustaceans.

The sooty shearwater may occur within the operational area and EMBA.

Southern Giant Petrel

The southern giant petrel (*Macronectes giganteus*) is listed as endangered and migratory under the EPBC Act. The southern giant petrel is considered to be a sibling species to the northern giant petrel. It is a large seabird with a widespread distribution range through the Southern Ocean from the Antarctic to subtropical waters. The southern giant-petrel breeds once a year between August and September, returning from foraging locations to breeding grounds in Antarctic waters.

The southern giant petrel may occur within the operational area and EMBA. There are no breeding, roosting grounds or critical feeding areas within the operational area, although this species may transit the EMBA from time-to-time, foraging for food.

Southern Royal Albatross

The southern royal albatross (*Diomedea epomophora*) is listed as vulnerable and migratory under the EPBC Act. The southern royal albatross has a circumpolar distribution within the Southern Oceans. Within Australia, they range over waters of SA at all time of year, especially between July and October and have been recorded from Byron Bay in the east to southwestern WA. Most records are from the shelf-break areas, particularly of western and southern Tasmanian and around Victoria (DSEWPac, 2011b).

The southern royal albatross was identified to have likely foraging behaviours within the operational area and EMBA.

Swinhoe's Snipe

The Swinhoe's snipe (*Gallinago megala*) is listed as a migratory species under the EPBC Act. Few definite records exist for Swinhoe's Snipe in Australia with these records being in northern Australia from October to April in the Kimberley region and October – March in the Pibara (DAWE, 2022). During the non-breeding season, Swinhoe's Snipe occurs at the edges of wetlands, such as wet paddy fields, swamps and freshwater streams (DAWE, 2022).

The Swinhoe's snipe has been identified as having roosting behaviours likely to occur within the EMBA.

Terek Sandpiper

The Terek sandpiper (*Xenus cinereus*) is a listed migratory species under the EPBC Act. This sandpiper primarily has a coastal distribution in Australia, being more widespread and common in the north and east than in the south of Australia (DAWE, 2022). In Victoria, the species has been recorded from Corner Inlet, Anderson Inlet, Westernport Bay and west Port Phillip Bay. The species is regularly seen in Tasmania and the South Australian coastline (DAWE, 2022). The species prefers intertidal mudflats and has also been recorded on sand spits, near mangroves and also rocky areas. The Terek sandpiper feeds on a variety of invertebrates including crustaceans, insects and molluscs. The species breeds in Eurasia before moving south for the boreal winter.

The Terek sandpiper was identified as known to roost within the EMBA.

Wandering Albatross

The wandering albatross (*Diomedea exulans*) is listed as vulnerable and migratory under the EPBC Act. The species has a circumpolar distribution and breeds on six sub-Antarctic island groups including Macquarie Island in Australia (DELWP, 2011; Marchant and Higgins, 1990; ACAP, 2011). The Wandering Albatross breeds biennially, laying eggs in December and fledging chicks between mid-November and late February. Limited satellite tracking of Wandering Albatross from Macquarie Island shows that breeding females forage north of the Island in waters off southern Tasmania, while males forage in open waters of the Southern Ocean, south of 50°S, reflecting a spatial segregation seen in other populations of this species. Juveniles are

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concentrated in lower latitudes north and east of Macquarie Island in Pacific waters, off the south east coast of Australia and in New Zealand waters. The species feeds mainly on squid and fish but also crustaceans and carrion (Marchant and Higgins, 1990).

Foraging trips by breeding Wandering Albatross have exceeded 15,200 km between incubation bouts (Jouventin and Weimerskirch, 1990). Southern Australia is an important wintering ground for non-breeding and juvenile birds from the Atlantic and Indian Ocean breeding colonies. Non-breeding and juvenile birds remain north of 50° S. During the non-breeding season, birds disperse more widely with females generally foraging in more northerly latitudes of the southern hemisphere and males generally foraging further south (Baker and Hamilton, 2013).

This species is wide-ranging and may potentially over-fly the worst-case hydrocarbon EMBA from time-to-time in transit or for foraging.

The entire South-east Marine Region north of 50°S is recognised as a BIA for foraging for the species. Therefore, the operational area and EMBA overlap this foraging BIA (DoE, 2015).

Wandering Tattler

The Wandering Tattler (*Tringa incana*) is listed as migratory under the EPBC Act. This species is considered uncommon in Australia, although this could be partly due to confusion with the Grey-tailed Tattler (Bamford et al. 2008; Higgins & Davies, 1996). Wandering Tattlers breed outside of Australia from late May to August with eggs laid in June (DAWE, 2022). Following the breeding season, the birds migrate southwards for the boreal winter, residing in Pacific Islands, north-east Australia and New Zealand. Records indicate the species arrives in Australia from September and begins leaving in April-May (DAWE, 2022).

The Wandering Tattler generally inhabits rocky coasts with reefs and platforms, points, spits, piers, offshore islands and shingle beaches or beds (DAWE, 2022). The species feeds on worms, molluscs and crustaceans and forages among rocks or shingle, or in shallow pools at the edges of reefs or beaches, mainly along the tideline (DAWE, 2022).

Wedge-Tailed Shearwater

The wedge-tailed shearwater (*Ardenna pacifica*) is a listed migratory species under the EPBC Act. This medium-sized seabird is common in the Indian Ocean, the Coral Sea and the Tasman Sea (Lindsey, 1986), preferring tropical and sub-tropical waters where temperatures are greater than 21°C. The species has been recorded in offshore waters of eastern Victoria and southern NSW, mostly over continental slope with sea-surface temperatures of 13.9–24.4°C (Drummond, 1985; Reid *et al.*, 2002).. It forages at sea, feeding mostly on fish, cephalopods, insects, jellyfish and prawns. The Wedge-tailed Shearwater breeds on the east and west coasts of Australia and on offshore islands.

The wedge-tailed shearwater has an identified foraging BIA within the operational area and EMBA and a breeding BIA in the EMBA (Figure 4-26).

Whimbrel

The whimbrel (*Numenius phaeopus*) is a medium-sized curlew and a listed migratory species under the EPBC Act. It is a regular non-breeding migrant to Australia and New Zealand. Although scattered inland records of the species is found in all regions, its distribution is primarily coastal, and more common in the north of Australia. However, it is regularly found in some places in Victoria, Tasmania and South Australia (DAWE, 2022). The whimbrel forages on intertidal mudflats, along muddy banks of estuaries and in coastal lagoons and mangroves. The whimbrel begin their migration from breeding grounds in the northern hemisphere in July, arriving on the north coasts from August. They start their northern migration back to breeding grounds by late April.

The whimbrel was identified as known to roost within the EMBA.

White-capped Albatross

The white-capped albatross (*Thalassarche cauta steadii*) is listed as vulnerable and migratory under the EPBC Act. This is a marine species that occurs in sub-Antarctic and subtropical waters. The white-capped albatross breeds on the subantarctic islands of New Zealand. Eggs are usually laid in mid-November and hatch in February (ACAP, 2011). Tracking data reveal that white-capped albatross forage extensively across the Tasman Sea, around southeastern Australia, during incubation and chick-rearing, with birds moving as far west as Tasmania and south-eastern Australia, and further westwards to southern and south-western Australia

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during nonbreeding (Thompson et al. 2011). The white-capped albatross is thought to have a diet of inshore cephalopods (squid) and fish (Gales, 1993; Marchant and Higgins 1990). It occurs in both inshore and offshore waters (DAWE, 2022). The entire South-east Marine Region as far south as latitude 50°, S is recognised as a biologically important area for foraging for the species (DoE, 2015). The white-capped albatross was identified as likely to forage within the operational area and EMBA.

White-faced Storm Petrel

The White-faced Storm Petrel (*Pelagodroma marina*) is listed as marine under the EPBC Act and although it was not recognised as occurring in the PMST reports, the species has a recognised foraging BIA within the EMBA (Figure 4-27).

The Australian population of White-faced Storm Petrels are estimated to account for 25 per cent of the global population (DoE, 2015). The species is migratory, moving from temperate breeding sites to tropical and subtropical waters in the non-breeding season. There are 15 breeding colonies identified in Tasmania and a further three sites in Port Phillip Bay, Victoria and include Tullaberga Island, Mud Island and South Channel Island (DoE, 2015). The species returns to colonies in late September to early October, with egg laying beginning in early summer and fledging occurring mid-February to mid-March (DoE, 2015).

White-faced Storm Petrels feed on pelagic crustaceans, small fish and other surface plankton (Marchant & Higgins 1990). There is a recognised foraging BIA within the EMBA (Figure 4-27).

4.4 Socio-Economic Values and Sensitivities

4.4.1 Cultural Heritage

Indigenous Heritage

Aboriginal groups inhabited the southwest Victorian coast as is evident from the terrestrial sites of Aboriginal archaeological significance throughout the area. During recent ice age periods (the last ending approximately 14,000 years ago), sea levels were significantly lower, and the coastline was a significant distance seaward of its present location, enabling occupation and travel across land that is now submerged.

Coastal Aboriginal heritage sites include mostly shell middens, some stone artefacts, a few staircases cut into the coastal cliffs, and at least one burial site. The various shell middens within the Port Campbell National Park and Bay of Islands Coastal Park are close to coastal access points that are, in some cases, now visitor access points (Parks Victoria, 1998).

Underwater Cultural Heritage

The *Underwater Cultural Heritage Act 2018* protects Australia's underwater cultural heritage including shipwrecks, sunken aircraft and other types of underwater heritage. Under this Act, shipwrecks, sunken aircraft and their associated artefacts older than 75 years are protected.

Within the spill EMBA is a 130 km stretch of coastline known as the 'Shipwreck Coast' because of the large number of shipwrecks present, with most wrecked during the late nineteenth century. The strong waves, rocky reefs and cliffs of the region contributed to the loss of these ships. The wrecks represent significant archaeological, educational and recreational (i.e., diving) opportunities for locals, students, and tourists (Flagstaff Hill, 2015). Wrecks closest to the CHN assets are listed below (Victorian Heritage Database, 2016; Australasian Underwater Cultural Heritage Database, 2018):

- *Napier* – wrecked in 1878, the vessel was contracted to undertake salvage on the Loch Ard wreck. While returning to Port Campbell it lost sternway while rounding the eastern reef and bluff, and swell forced it onto rocks on the western side of the cove.
- *Nowra* – wrecked in 1891 after experiencing very bad weather after leaving Penguin (Tasmania). It was unable to reach Port Phillip Heads and was driven onto the 'London Bridge' rocks.
- *Newfield* – wrecked in 1892, the vessel struck rocks approximately 100m from shore one mile east of Curdies Inlet due to navigational error when Cape Otway light was mistaken for King Island lighthouse.

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- *Young Australian* – wrecked in 1877 at Curdies Inlet while on a voyage from Maryborough (Qld) to Adelaide (SA) it struck heavy weather off Cape Nelson.
- *Schomberg* – wrecked in 1855 at Curdies Inlet as a result of a navigational error.
- *Falls of Halladale* – wrecked in 1908 at Massacre bay Peterborough as a result of a navigational error.
- Unnamed – located west of Peterborough in waters less than 10 m deep.
- *Loch Ard* – wrecked in 1878 as a result of bad weather prevented navigational fixes from being made.
- Frankston – Fairey Firefly – wrecked in 1947 as a result of a collision with another Fairy Firefly at 1500 ft.
- RAAF – B25 – Wrecked in 1945 due to catching fire during weapons test resulting in ditching of the aircraft.
- USAF – B57 – wrecked due to loss of control resulting in plunging into the water.
- Twin Engine – Lady Julia Percy Is. – Unknown.

None of the wrecks on the Victorian west coast are covered by underwater heritage protected zones declared under Section 103 of the Victorian *Heritage Act 1995* (DELWP, 2016b) (Figure 4-29), with the nine protected zones that do exist occurring within Port Phillip Bay and adjacent to the west Gippsland coast (DELWP, 2016b).

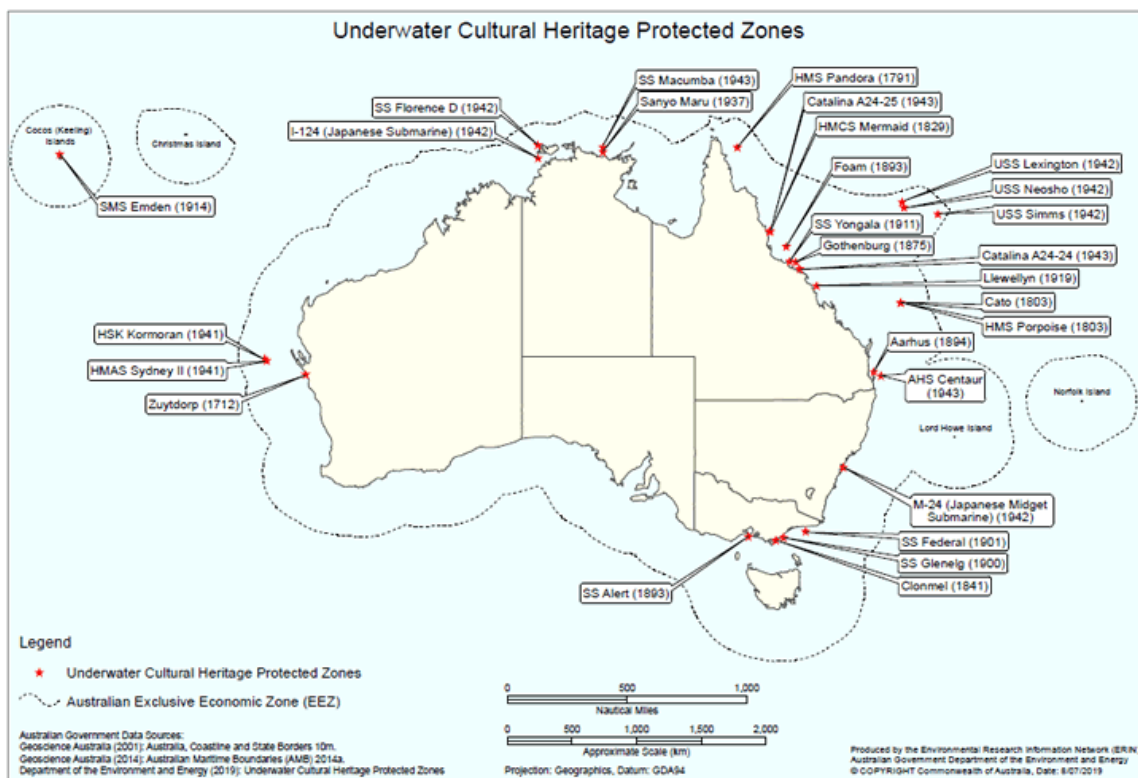


Figure 4-29: Underwater cultural heritage shipwreck protected zones

4.4.2 Australian Commercial Fisheries

A number of Commonwealth and State managed fisheries have boundaries that overlap with the operational area and EMBA (Figure 4-30 to Figure 4-39). Table 4-8 provides a summary description of the commercial fisheries with management areas overlapping the operational area and / or EMBA and therefore have the potential for their operations to be affected by the petroleum activity.

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Table 4-8: Commonwealth and State managed fisheries within the EMBA

Fishery	Target Species	Description	Presence		
			Operational Area	MDO EMBA	LOWC EMBA
Commonwealth Managed Fisheries¹					
Bass Strait Central Zone Scallop	Scallops (<i>Pecten fumatus</i>)	Towed dredge fishing method. Fishery managed via seasonal/area closures and total allowable catch (TAC) controls together with quota statutory fishing rights (48 permits for 2019 season and 43 permits for the 2020 season) and individual transferrable quotas. 9 vessels were active in the fishery in the 2020 season. Fishing season: typically July to 31 December	No 2020 fishing intensity data shows activity north and east of King Island (Figure 4-31).	Yes	Yes
Eastern Tuna and Billfish	Albacore tuna (<i>Thunnus alulunga</i>) Bigeye tuna (<i>Thunnus obesus</i>) Yellowfin tuna (<i>Thunnus albacares</i>) Broadbill swordfish (<i>Xiphias gladius</i>) Striped marlin (<i>Kajikia audux</i>)	Pelagic longline, minor line (such as handline, troll, rod and reel). A total of 81 longline boat Statutory Fishing Rights, and 83 minor line Statutory Fishing Rights were issued in 2020. Vessels operating on 2019 and 2020 season –37 and 35 longline and 0 minor-line. Fishing season: 12 months beginning on 1 January	No Fishery effort is concentrated along the NSW coast and southern Queensland coast (Figure 4-32). No Victorian ports are used to land catches.	No	No
Skipjack (eastern)	Skipjack tuna (<i>Katsuwonus pelamis</i>).	Historically, over 98% of the catch was taken using purse seine catch method. Pole and line method was used for the remaining 2% of the catch. There were 17 fishing permits for the 2019-20 fishing season, but no active Australian vessels. Fishing season: not currently active	No No fishing effort in the fishery since 2008-9 fishing season (stock highly variable and Australia is at the edge of the species range) (Figure 4-33).	No	No
Small Pelagic (western sub-area)	Jack mackerel (<i>Trachurus declivis</i> , <i>T. symmetricus</i> , <i>T. murphyi</i>) Blue mackerel (<i>Scomber australasicus</i>),	Purse seine and mid-water trawl are the main fishing methods. There were 33 Statutory Fishing Rights in the 2020-21 fishing season, with 4 purse seine and 2 mid-water trawl vessels active. Fishing season: 12 months beginning 1 May	No Fishery effort concentrated in NSW and eastern Tasmania (Figure 4-34).	No	No

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Fishery	Target Species	Description	Presence		
			Operational Area	MDO EMBA	LOWC EMBA
	Redbait (<i>Emmelichthys nitidus</i>) and Australian sardine (<i>Sardinops sagax</i>).				
Southern and Eastern Scalefish and Shark Fishery (SESSF) – CTS and Danish Seine	Blue grenadier (<i>Macruronus novaezelandiae</i>), Tiger flathead (<i>Platycephalus richardsoni</i>), Pink ling (<i>Genypterus blacodes</i>) Silver warehou (<i>Seriolella punctata</i>)	Fishing methods include otter trawl and Danish seine. There are 57 trawl licences with 30 trawl and 19 Danish seine vessels operational in the 2019/20 season. Fishing season: 12 months beginning 1 May	Unlikely (CTS) No (Danish Seine) Trawl sector is concentrated around shelf-break areas. Danish seine activity is located on the continental shelf and operate in sandy bottom environments (Figure 4-35).	Unlikely (CTS) No (Danish Seine)	Unlikely (CTS) No (Danish Seine)
SESSF – Shark Gillnet and Shark Hook Sectors	Gummy shark (<i>Mustelus antarcticus</i>)	Within the Shark Gillnet and Hook sector there were 61 gillnet fishing permits and 13 hook fishing permits issued in 2019-20 season. Vessels actively fishing during the season included 35 gillnet vessels and 36 hook vessels. Fishing season: 12 months beginning 1 May	Possible (Gillnet) No (Hook) Gillnet sector heavily utilises the continental shelf. Hook sector does not fish in the Gippsland Basin (Figure 4-35).	Possible (Gillnet) No (Hook)	Possible (Gillnet) No (Hook)
Southern Bluefin Tuna	Southern bluefin tuna (<i>Thunnus maccoyii</i>)	The primary fishing method is purse seine in waters off South Australia with a number of fishes captured by longline vessels off the East Coast. Tuna caught in SA are then transferred to aquaculture farming pens off Port Lincoln in South Australia. In the 2019-20 fishing season, there were 82 fishing permits with 7 active purse seine vessels and 23 longline vessels. Fishing season: 12 months beginning 1 December	No Fishery effort concentrated in the Great Australian Bight (GAB) off Kangaroo Island and in southern NSW coast off the continental shelf (Figure 4-36).	No	No
Southern Squid Jig	Gould's squid (<i>Nototodarus gouldi</i>)	Squid jigging is the fishing method used, mainly in water depths of 60 to 120 m, at night.	No	Possible	Possible

Description of Environment for the Minerva Field

Fishery	Target Species	Description	Presence		
			Operational Area	MDO EMBA	LOWC EMBA
		<p>In 2020, there were 5 active jig vessels in the Commonwealth fishery.</p> <p>Portland is a primary landing port.</p> <p>Fishing season: 12 month season beginning 1 January</p>	<p>Catches are concentrated in Commonwealth waters between Portland and Robe (SA). Low fishing intensity occurs in eastern Victoria and southern NSW (Figure 4-37 and Figure 4-38).</p>		
State Managed Fisheries²					
Victorian Rock Lobster	Predominantly southern rock lobster (<i>Jasus edwardsii</i>), along with small quantities of eastern rock lobster (<i>Jasus verreauxi</i>).	<p>71 licences in the Western zone, permitted to use baited rock lobster pots. In 2019/20, there were 43 vessels working in the western zone (VFA, 2021).</p> <p>In 2019/20, 225.6 tonnes were harvested in the western zone.</p> <p>Fished from rocky reefs in waters up to 150 m depth, with most of the catch coming from inshore waters less than 100 m deep. Pots are generally set and retrieved each day, marked with a surface buoy.</p> <p>Closed seasons: females 1 June to 15 November and males 15 September to 15 November.</p>	<p>Yes</p> <p>Fishing occurs throughout the area on rocky reefs.</p>	Yes	Yes
Victorian Giant Crab	Giant crab (<i>Pseudocarcinus gigas</i>).	<p>Giant crabs can only be taken using commercial rock lobster pots by Western Zone lobster fishers.</p> <p>Since the introduction of quota management in the Giant Crab Fishery in 2001, there have been <5 dedicated fishers active in the fishery and up to 20 fishers annually reporting Giant Crab catch as by-product from Rock Lobster fishing (VFA, 2021).</p> <p>In 2019/20 season 9.5t was landed (VFA, 2021).</p> <p>Fished mostly on the shelf break (150-350 m water depth).</p>	<p>Unlikely</p> <p>Although concentrated on the continental shelf, given that licence holdings are linked to southern rock lobster licences, there may be some fishing.</p>	Unlikely	Unlikely
Abalone	Blacklip abalone (<i>Haliotis rubra</i>) and greenlip abalone (<i>Haliotis laevigata</i>).	The fishery consists of 71 fishery access licences of which 14 operate in the Western Zone, 34 in the Victorian Central Zone, and 23 in the Eastern Zone.	<p>Likely</p> <p>Abalone diving activity occurs close to shoreline (generally to</p>	Likely	Likely

Description of Environment for the Minerva Field

Fishery	Target Species	Description	Presence		
			Operational Area	MDO EMBA	LOWC EMBA
		Commercial fishing methods use diving equipment such as a surface air supply to the diver (hookah system) from small high speed fishing boats. Diving is normally to depths less than 20 m. Fishing season: 12 months beginning 1 April	depths of 30 m on rocky reefs) and may operate around the assets.		
Wrasse	Blue-throat wrasse (<i>Notolabrus tetricus</i>) Saddled (or purple) wrasse (<i>Notolabrus fucicola</i>) Rosy Wrasse (<i>Pseudolabrus psittaculus</i>) Senator Wrasse (<i>Pictilabrus laticlavus</i>) Southern Maori Wrasse (<i>Ophthalmolepis lineolatus</i>)	The fishery is divided into three commercial management zones; west, central and east, with licence holders able to fish in any of these zones. There are 22 licences (2021) issued for this fishery. Licences are transferrable. Fishing method is via hand line fishing (other than longline which are not permitted) and rock lobster pots if also in possession of a Rock Lobster Access Fishing Licence.	Likely Wrasses are fished along the entire Victorian coast but in recent years, catches have been the highest off the central coast (Port Phillip Heads, Western Port, and Wilson's Promontory) and west coast of Victoria (Portland). Catches of saddled wrasse are highest in the Western part of Victoria, which is thought to be related to a greater proportion of suitable reef habitat in this area. Wrasse can inhabit depths up to 160 m but their preferred depths are approximately 30 m.	Likely	Likely
Scallop	Scallop (<i>Pecten fumatus</i>).	A total of 91 commercial licenses are issued each year and approximately 10-15 vessels operate within the fishery. Commercial vessels tow a single dredge that is dragged along the seabed. Dredges are deployed from the rear of the vessel and are up to 4.5 metres wide.	No Fishery boundary extends the entire length of the Victorian coastline and out to the 20 nmi point from the shoreline although mostly fished from	No	No

Description of Environment for the Minerva Field

Fishery	Target Species	Description	Presence		
			Operational Area	MDO EMBA	LOWC EMBA
		Fishing season: 12 months beginning 1 April	Lakes Entrance and Welshpool.		
Snapper	Snapper (<i>Pagrus auratus</i>).	A total of 246 ocean fishery access licences issued (SIV, 2016). A variety of commercial fishing equipment is used including long lines, haul seines, mesh nets, and hand lines.	Likely	Likely	Likely
Octopus	Pale Octopus (<i>Octopus pallidus</i>) Maori octopus (<i>Macroctopus maorum</i>) Gloomy Octopus (<i>Octopus tetricus</i>)	The fishery has established three zones; western, central and eastern octopus zones to manage commercial octopus fishing in Victoria. The western and central zones are less established and are being managed through exploratory, temporary permits. While the Eastern Zone (East Gippsland) is operational and extends from Seaspray to the Victorian / NSW border and out to 20 nmi offshore, except for marine reserves. There are 11 transferable licences issued for the eastern octopus zone. The fishery uses purpose-built unbaited traps which aim to minimise bycatch.	No The eastern octopus zone, from Seaspray to the Victorian / NSW border, is authorised for commercial take of octopus. Western and central octopus zones are less established.	No	No

¹ Commonwealth fisheries information sourced from DAWE, 2021 and AFMA, ND.

² State-managed fisheries information sourced from VFA, 2021a

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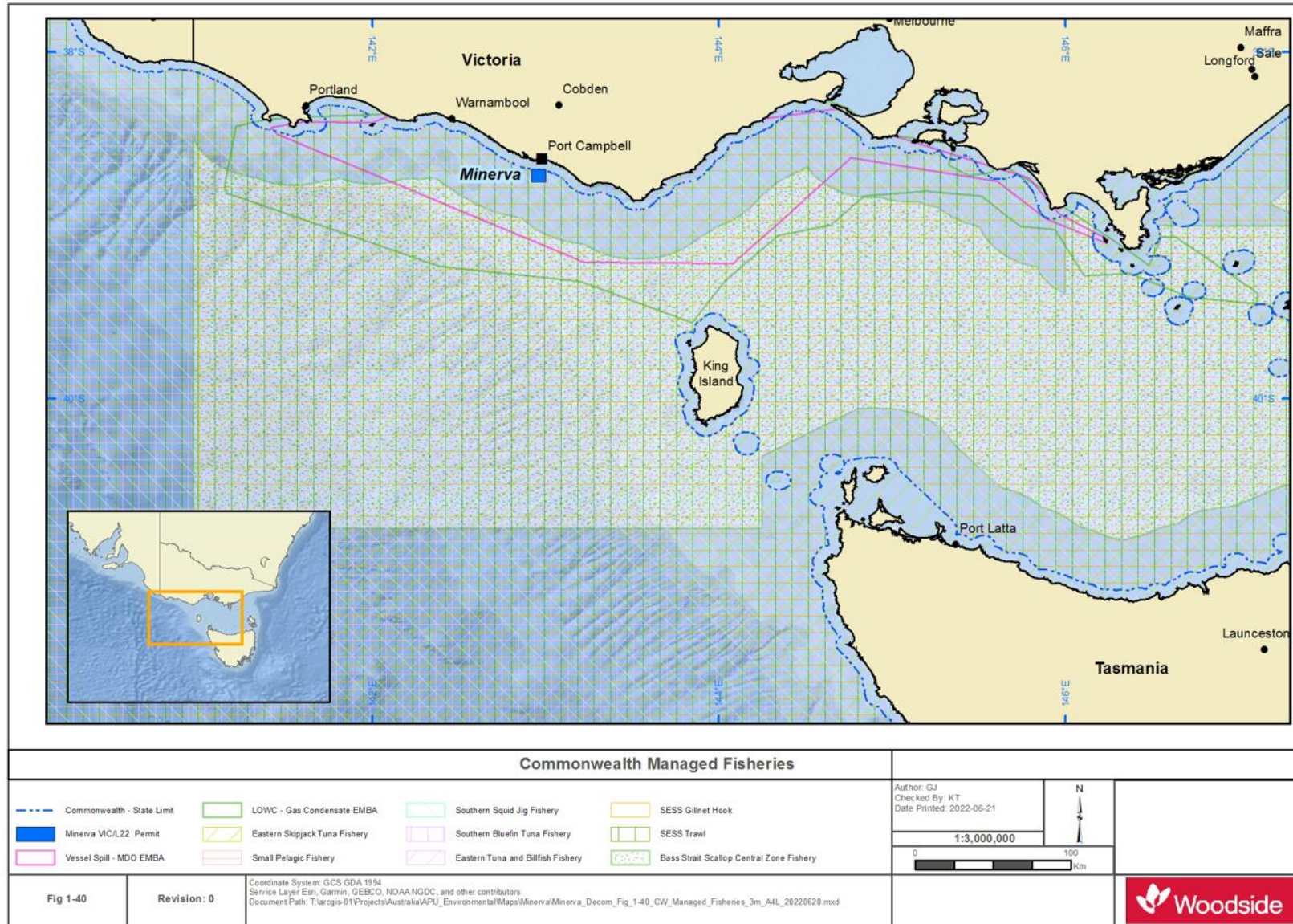
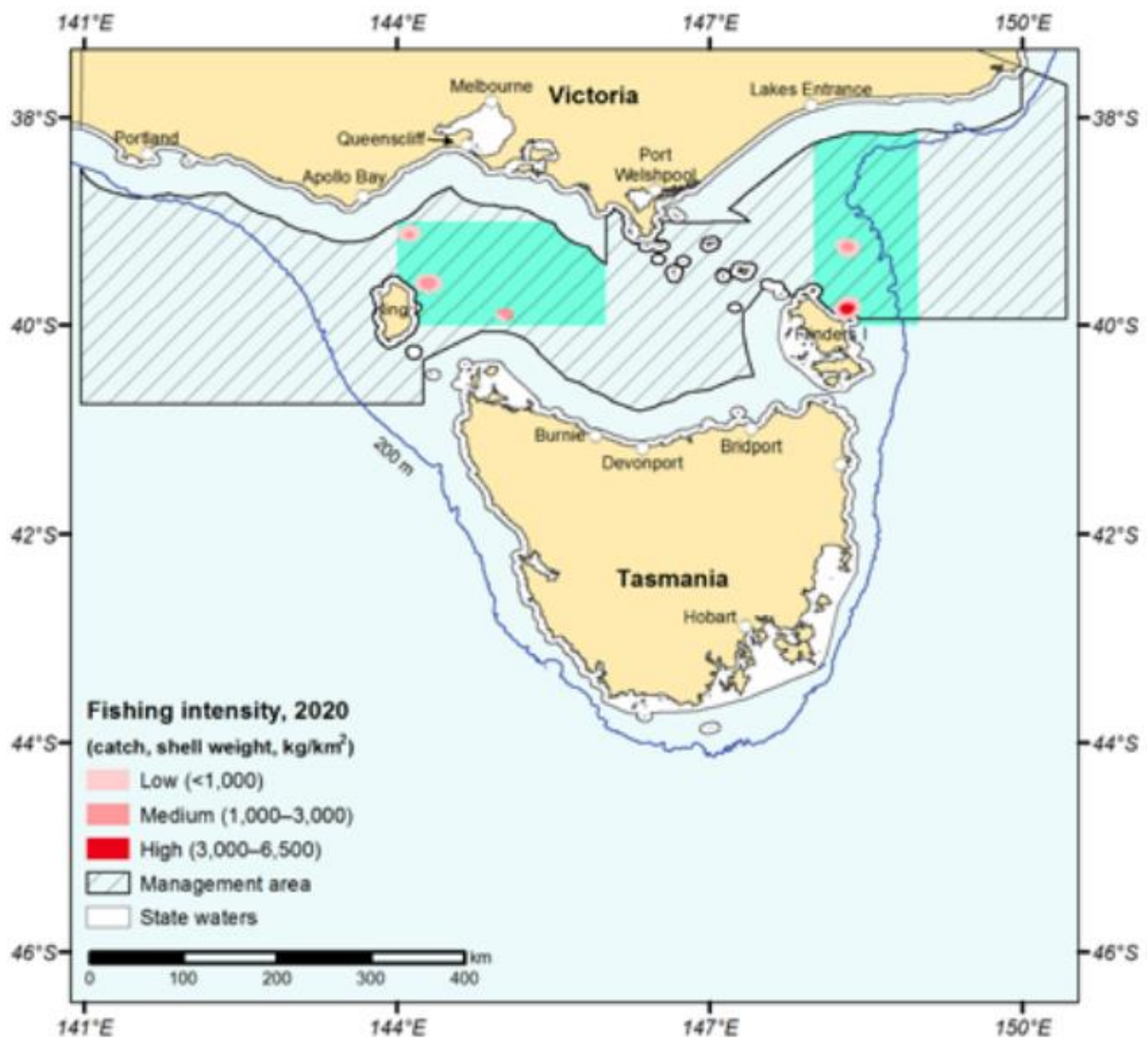


Figure 4-30: Commonwealth-managed Commercial Fisheries within the Operational Area and EMBA

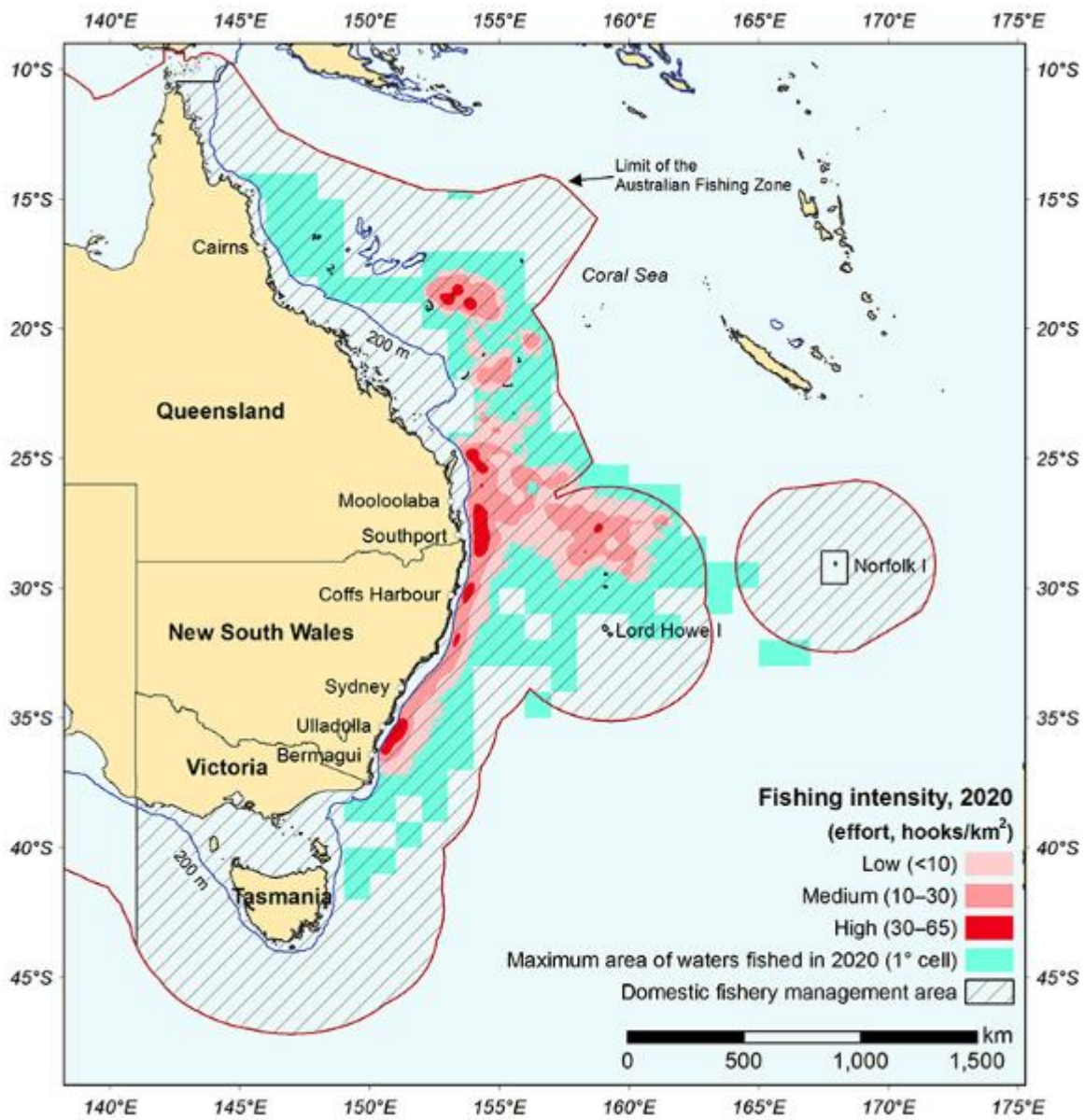
Description of Environment for the Minerva Field



Source: DAWE, 2021

Figure 4-31: Area and Relative Fishing Intensity in the Bass Strait Central Zone Scallop Fishery, 2020

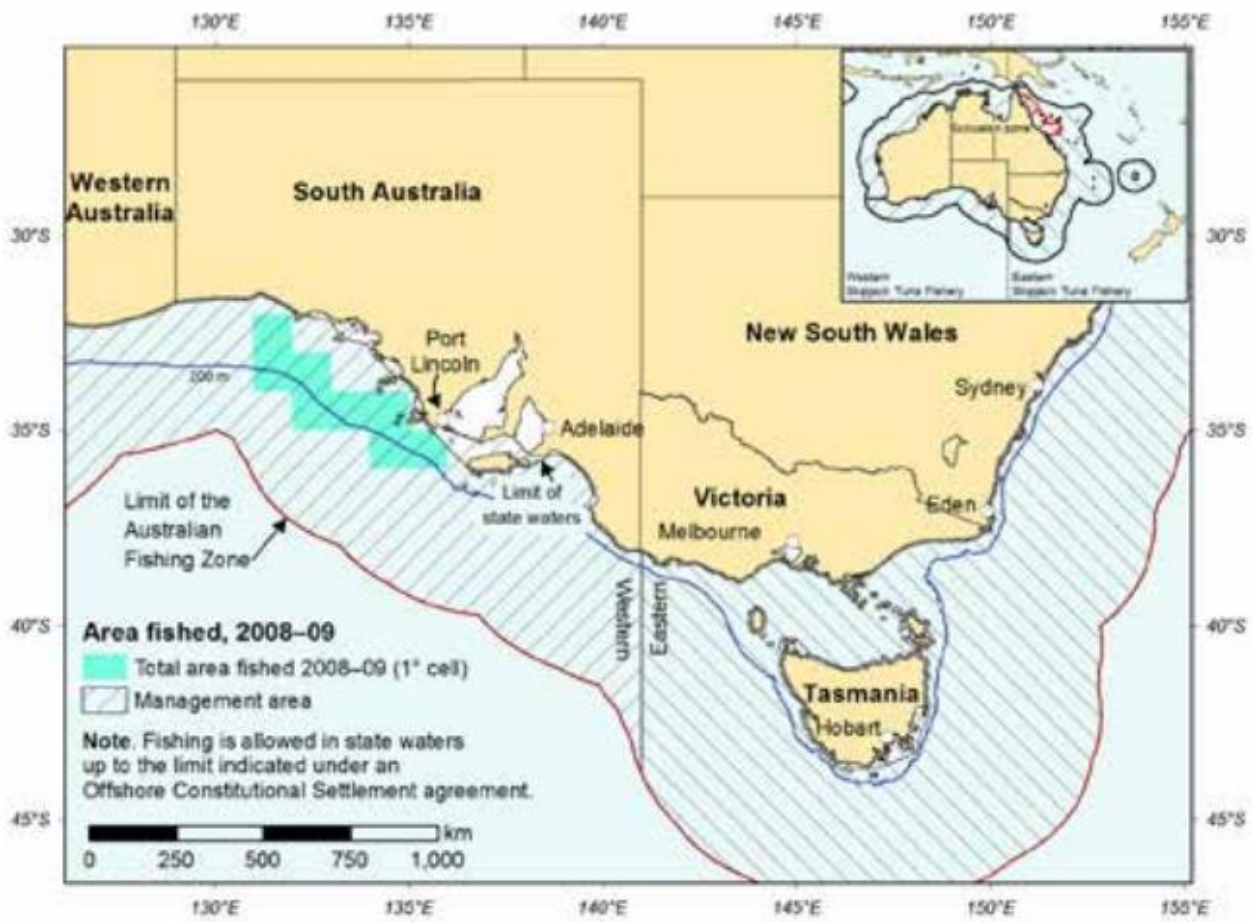
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Source: DAWE, 2021

Figure 4-32: Fishing Intensity in the Eastern Tuna and Billfish Fishery, 2020

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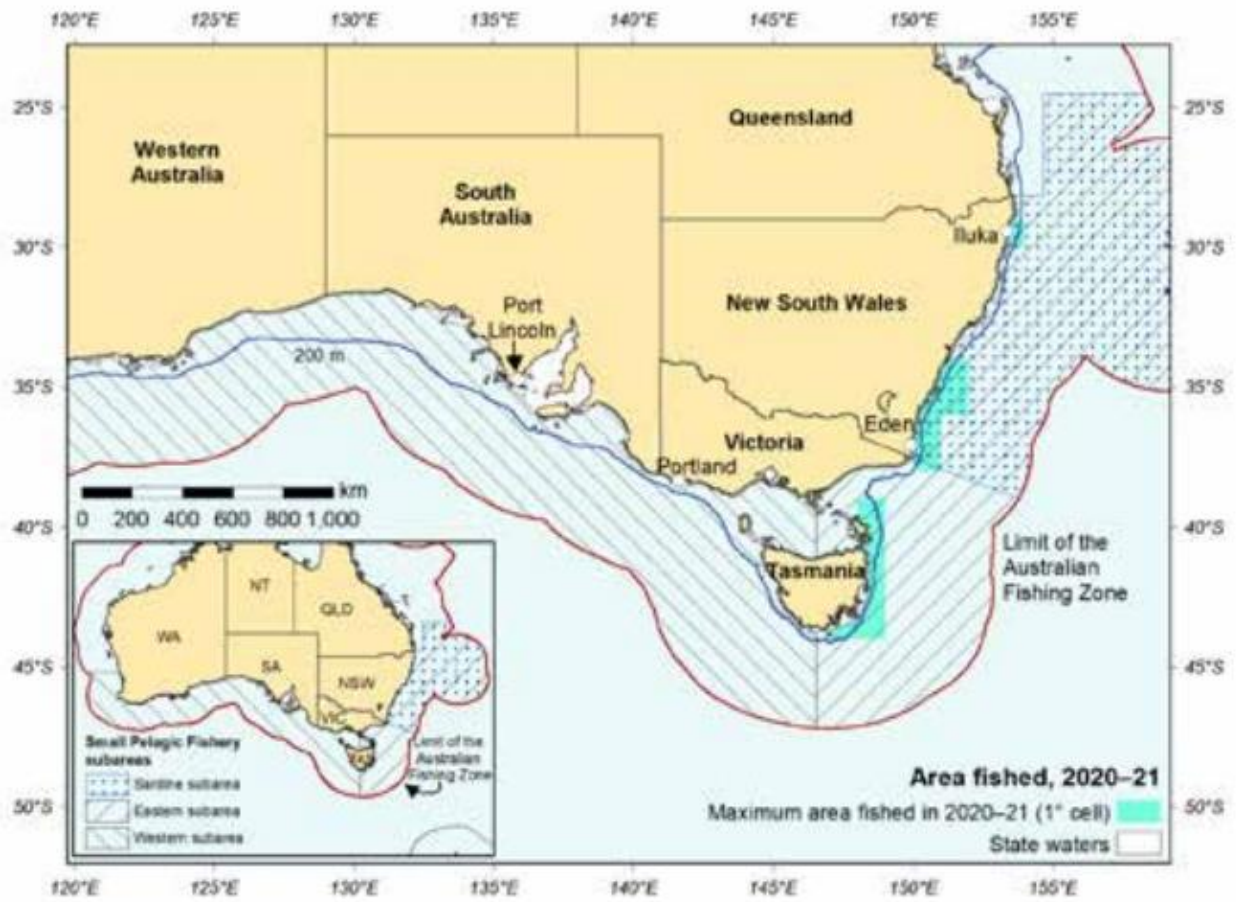


Note: The last effort in the fishery occurred in 2008-09.

Source: DAWE, 2021

Figure 4-33: Area fished in the Skipjack Tuna Fishery, 2008-09 to 2019-20

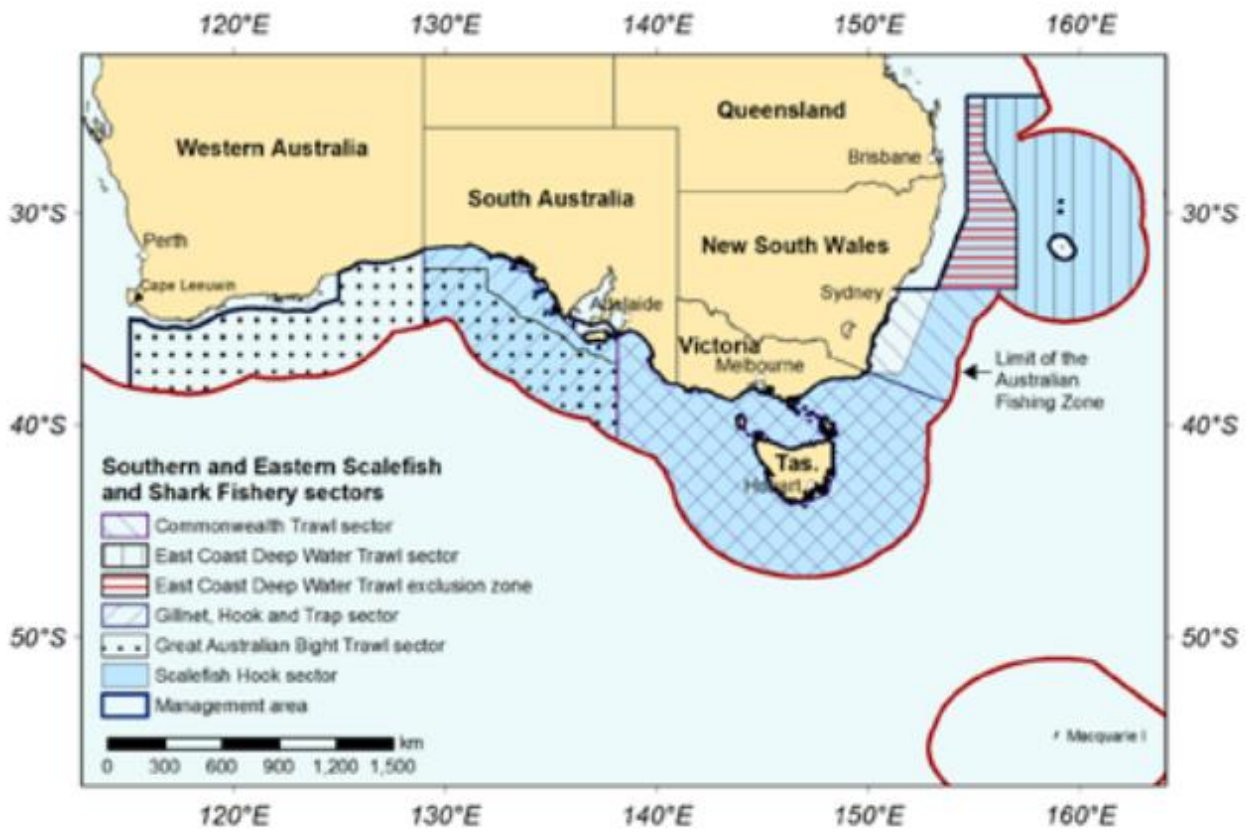
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Source: DAWE, 2021

Figure 4-34: Area fished in the Small Pelagic Fishery, 2020-2021 fishing season

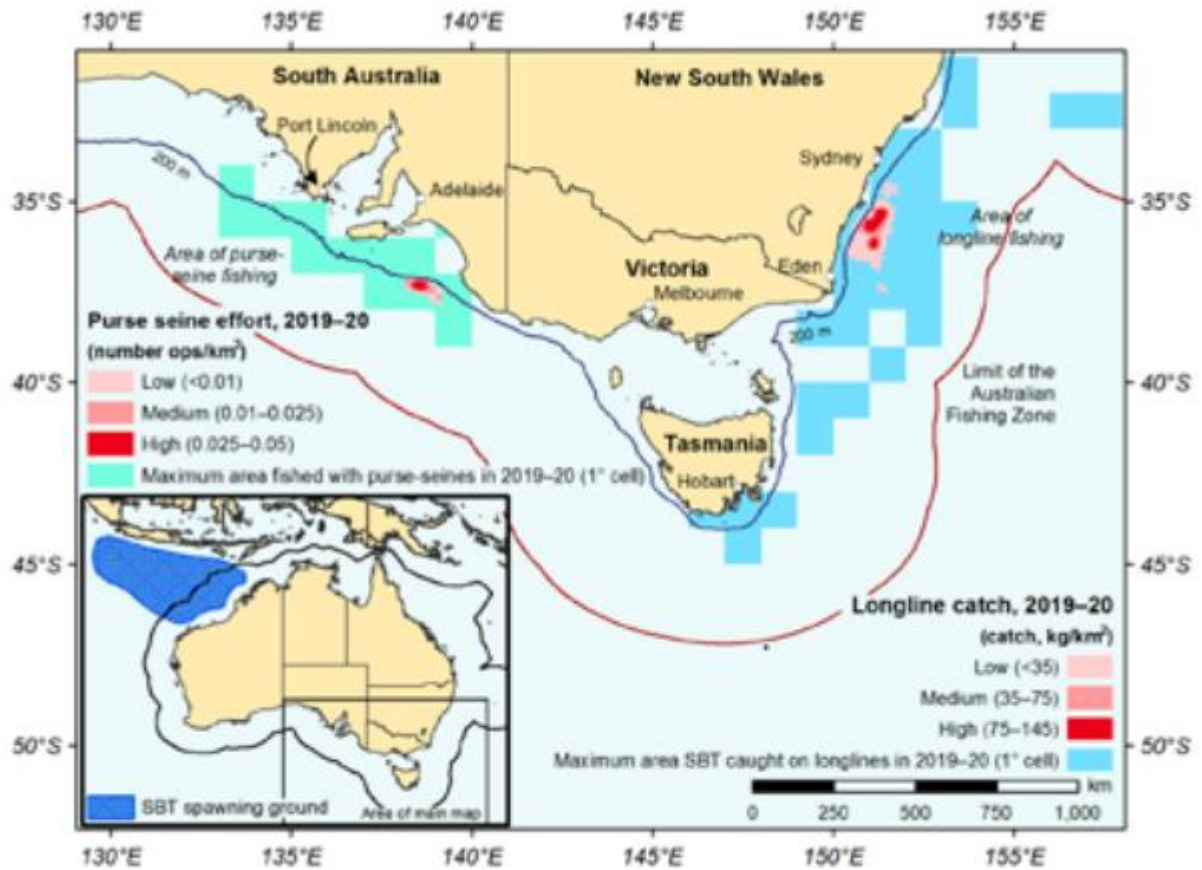
Description of Environment for the Minerva Field



Source: DAWE, 2021

Figure 4-35: Area and sectors of the Southern and Eastern Scalefish and Shark Fishery

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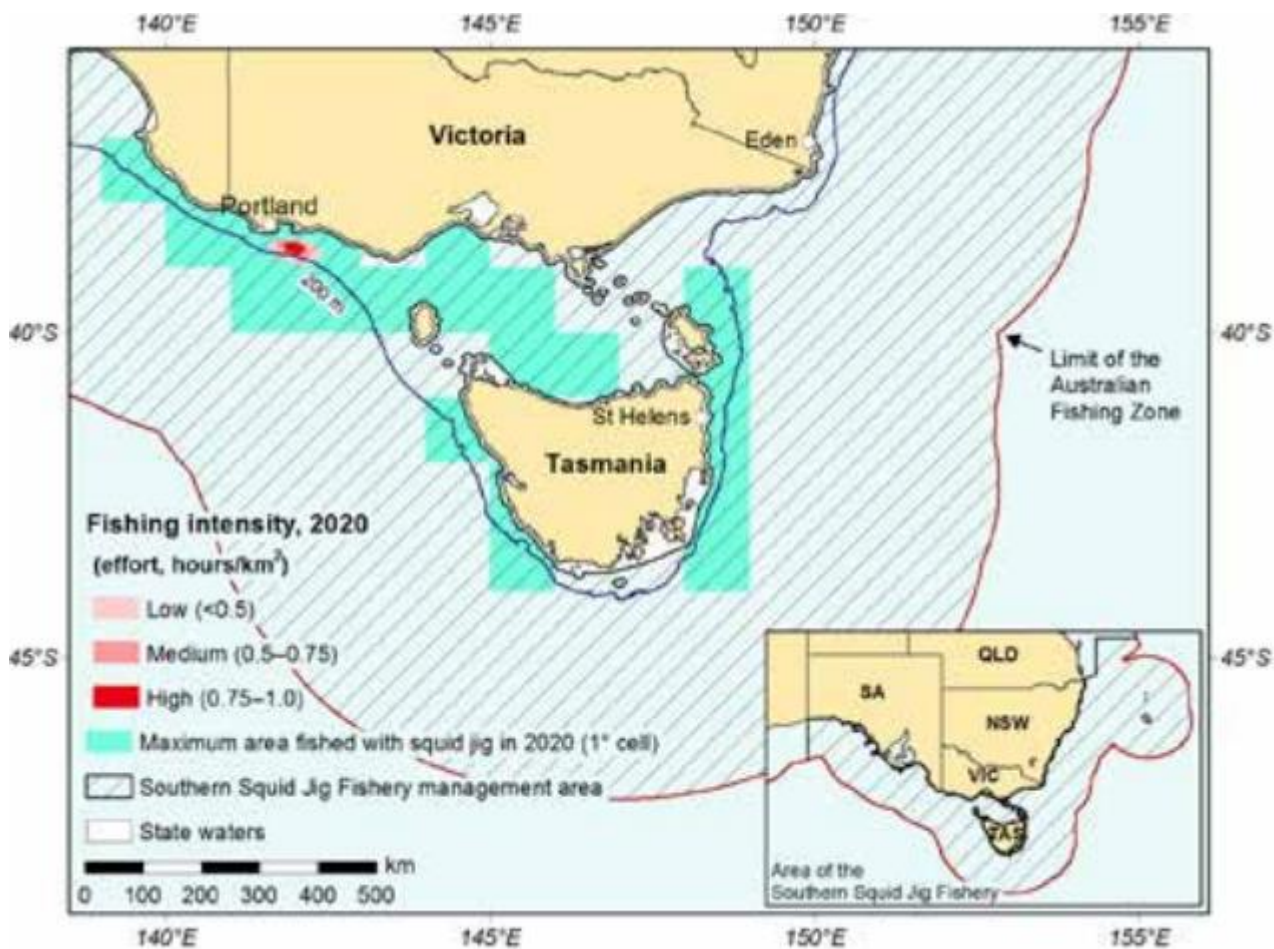


Note: SBT Southern bluefin tuna.

Source: DAWE, 2021

Figure 4-36: Purse-seine effort and longline catch in the Southern Bluefin Tuna Fishery, 2019-20 fishing season

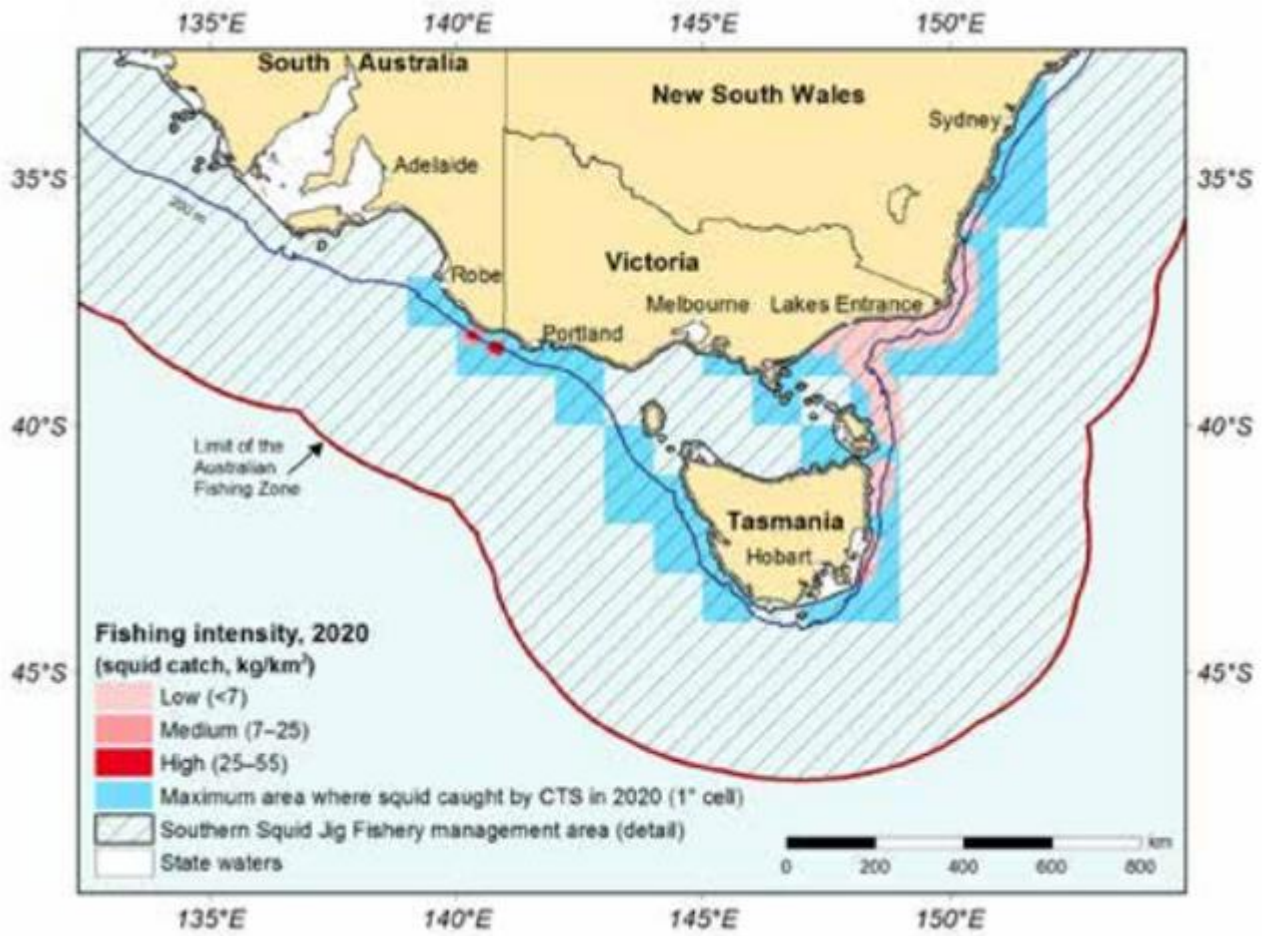
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Source: DAWE, 2021

Figure 4-37: Relative fishing intensity in the Southern Squid Jig Fishery

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Note: CTS Commonwealth Trawl Sector.

Source: DAWE, 2021

Figure 4-38: Commonwealth Trawl Sector Squid Catch, 2020

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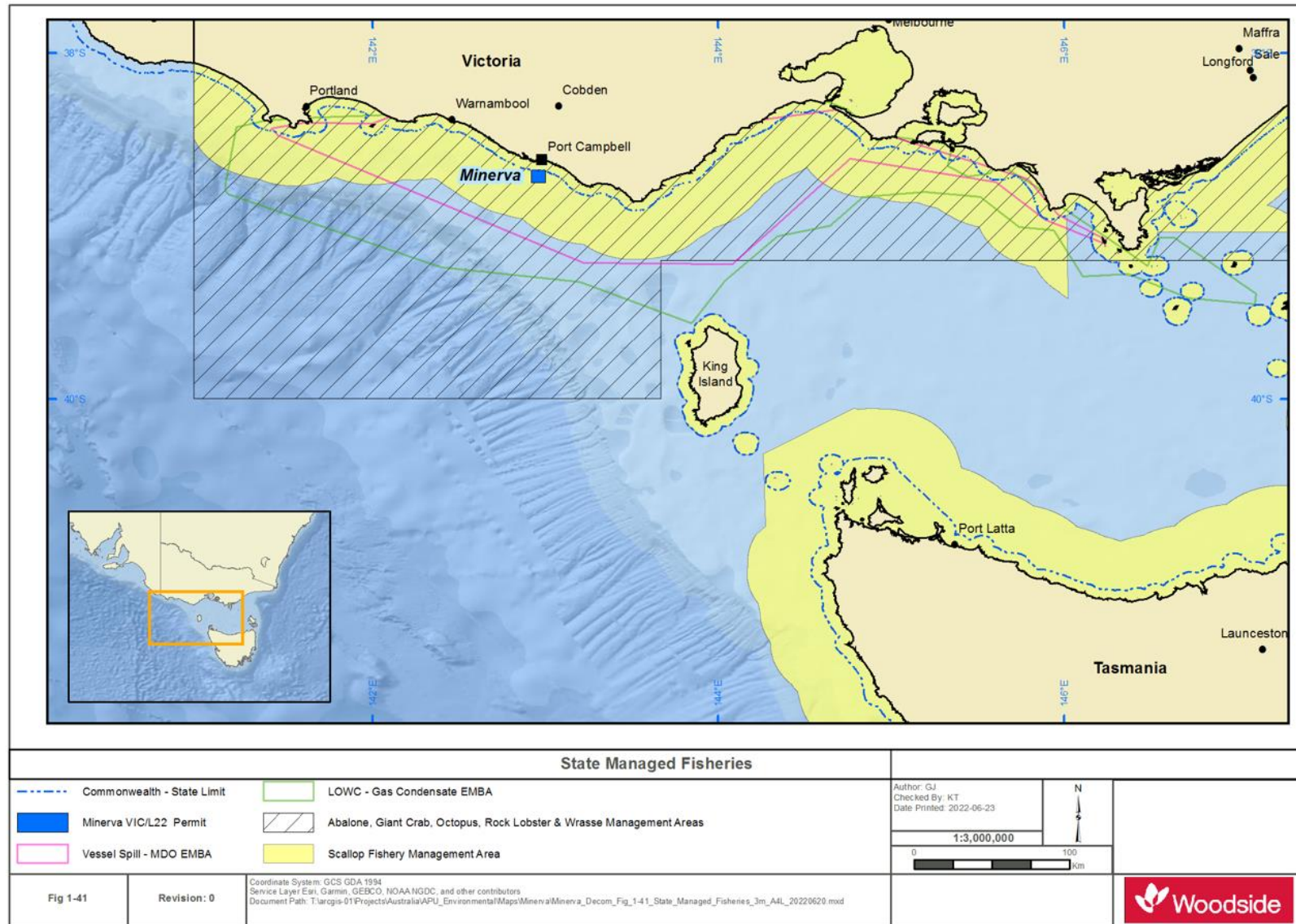


Figure 4-39: State managed fisheries within EMBA

Description of Environment for the Minerva Field

4.4.3 Tourism and Recreation

Recreational and tourism activities are extremely valuable foundations for the local and regional economy. Key activities include sight-seeing, surfing and fishing however, these are generally land-based or near-shore activities and are not impacted by the Minerva field activities.

Tourism

The Minerva field is located in an area of the Otway coastline where the Great Ocean Road is positioned. This landmark is considered one of the most famous drives in the world with Tourism Victoria (2017) reporting a total of approximately 8 million visitors to the Great Ocean Road region.

Tourist numbers peak in the area between mid-December and mid-February for the Chinese New Year, with tourist numbers still high in the shoulder periods between mid-February and end April; and November to mid-December.

Recreational Fishing

Recreational fishing is popular in Victoria and is largely centred within Port Phillip Bay and Western Port, although beach- and boat-based fishing occurs along much of the Victorian coastline.

The recreational fisheries that occur within the EMBA are:

- Rock lobster
- Finfish (multiple species are targeted, including sharks)
- Abalone
- Scallops
- Squid
- Pipi.

Of these, active recreational fishing for rock lobster, abalone, finfish and sharks is likely to occur within the EMBA. Recreational scallop and squid fishing primarily occurs within Port Phillip Bay and Western Port and as such fishing for these species is unlikely within the EMBA. Pipi harvesting occurs in Venus Bay, just outside the eastern portion of the EMBA.

Surfing

The high energy of the ocean in western Victoria and high waves (associated with the rocky reefs) make this section of coastline ideal for surfing. Surfing is concentrated at Shelly Beach, Crumpets, Murrell's, Yellow Rock, Blacknose Point, White's Beach, Bridgewater, Water Tower, Rifle Range and Narrawong. Surfing, by its very nature, takes place close to the shoreline.

Diving and Snorkelling

Scuba diving and snorkelling usually take place around the offshore reefs and historic wrecks along the coast east of Port Campbell (e.g., Twelve Apostles Marine National Park and The Arches Marine Sanctuary), north east of the Minerva field.

Sight-seeing

The visual beauty of the rugged coastal cliffs and the surf beaches make up the primary attractions to the area. This part of the Victorian coastline is promoted nationally as the 'Shipwreck Coast.' The sheer vertical coastal cliffs attract tourism, as does the promise of seeing migrating whales, such as the southern right whale, from vantage points around Warrnambool.

The Great Ocean Road tourist drive facilitates most tourist visits to the region. Numerous self-guided tours (e.g., Great South West Walk), picnic facilities and coastal lookouts are provided along the coast, with camping sites, caravan parks, guesthouses, motels and hotels encouraging tourism stays in the area. The Port Campbell visitor

Description of Environment for the Minerva Field

information centre provides visitors to the area with information on all these local attractions. A number of operators provide scenic helicopter flights around the Twelve Apostles coastal area.

4.4.4 Commercial Shipping

The South East Marine Region is one of the busiest shipping regions in Australia and Bass Strait is one of Australia's busiest shipping routes (Figure 4-41). Commercial vessels use the route when transiting between ports on the east, south and west coasts of Australia, and there are regular passenger and cargo services between mainland Australia and Tasmania (NOO, 2004). Agricultural products and woodchips are transported from the Port of Portland to receiving ports in the Gulf of St Vincent, South Australia, and through Bass Strait to Melbourne and Sydney (NOO, 2004). Bass Strait is also transited by commercial vessels that may not call into ports on the south coast. There are also numerous minor shipping routes in the area, such as those that service King Island.

The Australian Maritime Safety Authority (AMSA) indicates that there are no designated shipping lanes in the vicinity of the Minerva field, however local commercial fishing vessels utilise the area frequently. Ship tracking data from AMSA (Figure 4-41) provides details of the shipping traffic in the area.

The main shipping channel for vessels (e.g., cargo tankers) travelling between major Australian and foreign ports is located south of the Minerva field, about 75 km (40 nmi) south of Warrnambool. This shipping channel is used by over 1,000 vessels per year, or about 3-4 vessels per day.

4.4.5 Oil and Gas Activities

Petroleum exploration has been undertaken within the Otway Basin since the early 1960s. Gas reserves of approximately 2 trillion cubic feet have been discovered in the offshore Otway Basin since 1995, with production from five gas fields using 700 km of offshore and onshore pipeline. Numerous exploration wells have been drilled and seismic surveys have been undertaken in the permits of the Otway Basin.

Nearby production fields include the Otway Gas Field Development, operated by Beach Energy and the Casino, Henry, Netherby (CHN) gas field operated by Cooper Energy are within the EMBA's.

4.4.6 Defence Activities

The Defence Force uses offshore areas for training operations including live firing, bombing practice from aircraft, air-to-air and air-to-sea or ground firing, anti-aircraft firing, firing from shore batteries or ships, remote controlled craft firing, and rocket and guided weapons firing.

Five training and practice areas are located in and around Port Phillip Bay and Western Port Bay. This is to the east of the Minerva field and within the EMBA's (Figure 4-40).

Mine fields were laid in Australian waters during World War II. Post-war minefields were swept to remove mines and to make marine waters safe for maritime activities. There are three areas identified as dangerous due to unexploded ordnance (UXO), though these are located south and east of Wilson's Promontory (approximately 300 km east of the Minerva field).

Description of Environment for the Minerva Field

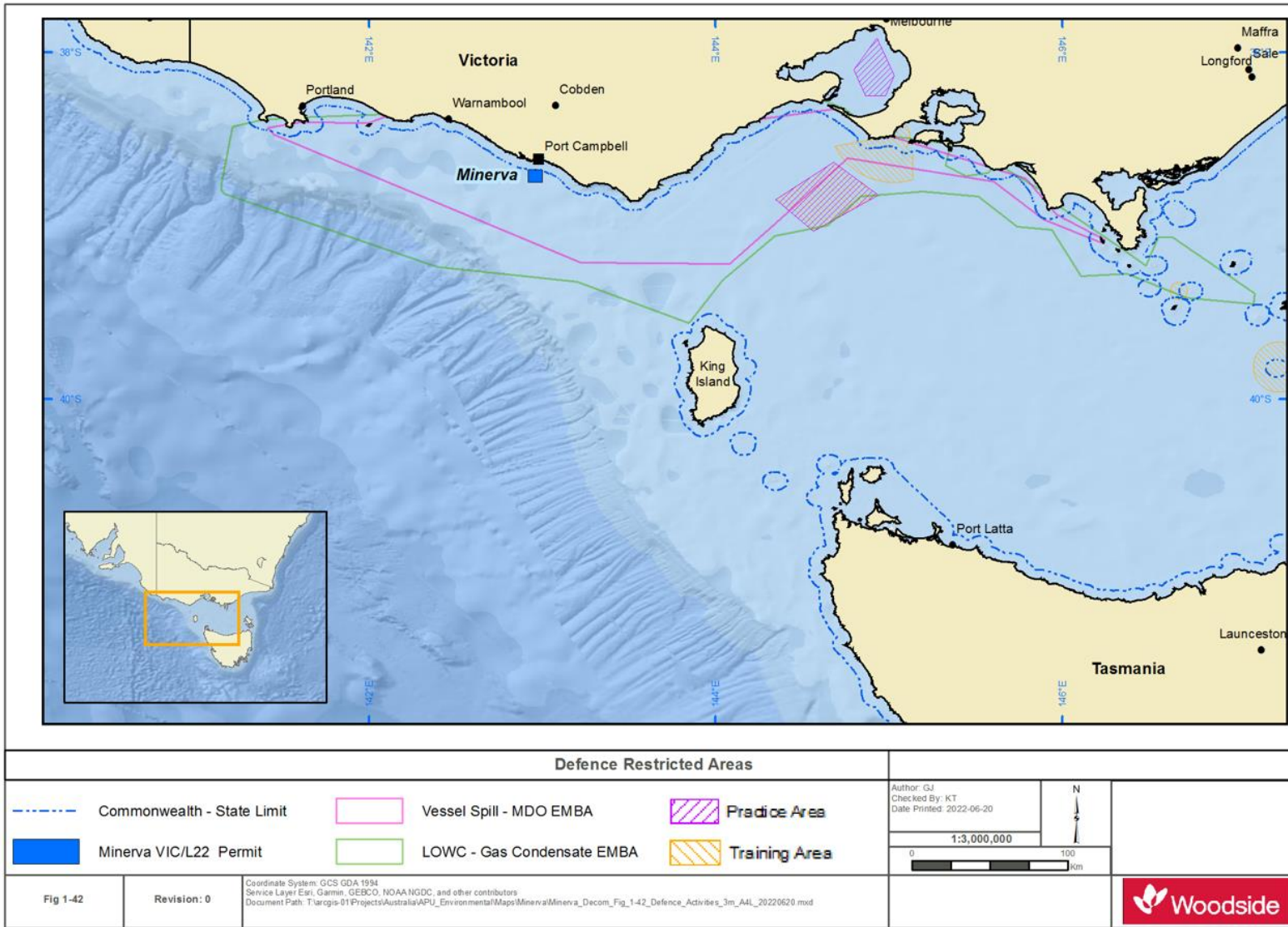


Figure 4-40: Defence activities within the region

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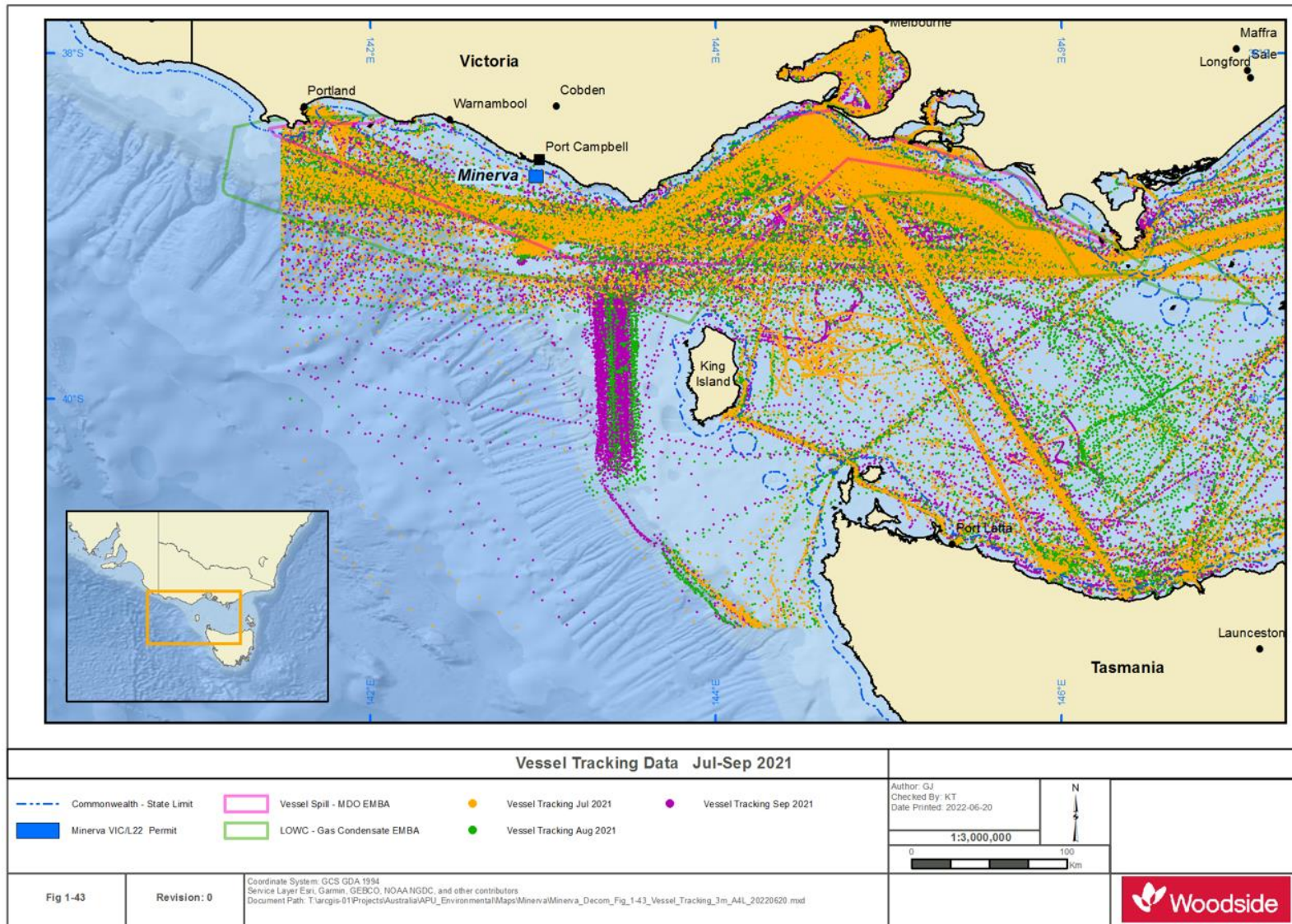


Figure 4-41: Vessel tracking data within the region

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EPBC Act Protected Matters Report - Operational Area

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 23-Feb-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	39
Listed Migratory Species:	37

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	62
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	11
Key Ecological Features (Marine):	None
Biologically Important Areas:	14
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Species

[\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Ardeanna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
FISH		
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
MAMMAL		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
REPTILE		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
SHARK		

Scientific Name	Threatened Category	Presence Text
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
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Migratory Marine Birds

Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Migratory Marine Species		
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat may occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna striata White-fronted Tern [799]		Migration route may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Fish		
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat likely to occur within area

Current Scientific Name	Status	Type of Presence
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Controlled action			
Casino Gas Field Development	2003/1295	Controlled Action	Post-Approval
Otway Development	2002/621	Controlled Action	Post-Approval
Schomberg 3D Marine Seismic Survey	2007/3754	Controlled Action	Completed
Not controlled action			
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
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Biologically Important Areas

Scientific Name	Behaviour	Presence
Seabirds		
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur

Sharks

Scientific Name	Behaviour	Presence
Carcharodon carcharias White Shark [64470]	Distribution	Known to occur
Carcharodon carcharias White Shark [64470]	Distribution (low density)	Likely to occur
Carcharodon carcharias White Shark [64470]	Known distribution	Known to occur

Whales

Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report - Ecological EMBA

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 23-Feb-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	86
Listed Migratory Species:	53

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	92
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	9
Regional Forest Agreements:	1
Nationally Important Wetlands:	3
EPBC Act Referrals:	34
Key Ecological Features (Marine):	None
Biologically Important Areas:	19
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Ecological Communities [\[Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		

Scientific Name	Threatened Category	Presence Text
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat may occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Nannoperca obscura Yarra Pygmy Perch [26177]	Endangered	Species or species habitat may occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
Serirolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
FROG		
Litoria raniformis Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
MAMMAL		
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat known to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area
Mastacomys fuscus mordicus Broad-toothed Rat (mainland), Tooarrana [87617]	Endangered	Species or species habitat known to occur within area
Miniopterus orianae bassanii Southern Bent-wing Bat [87645]	Critically Endangered	Roosting known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus trisulcatus Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat known to occur within area
Pseudomys fumeus Smoky Mouse, Koonoom [88]	Endangered	Species or species habitat may occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

PLANT

Scientific Name	Threatened Category	Presence Text
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Astelia australiana Tall Astelia [10851]	Vulnerable	Species or species habitat may occur within area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Lepidium aschersonii Spiny Peppercross [10976]	Vulnerable	Species or species habitat may occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercross, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known to occur within area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat known to occur within area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat may occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	Species or species habitat may occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area

REPTILE

Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area

SHARK

Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area

Listed Migratory Species

[\[Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text
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Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[[Resource Information](#)]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Unknown	
Commonwealth Land - [21492]	VIC
Commonwealth Land - [21583]	VIC

Listed Marine Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area overfly marine area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna carneipes as Puffinus carneipes		
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea as Puffinus griseus		
Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna tenuirostris as Puffinus tenuirostris		
Short-tailed Shearwater [82652]		Breeding known to occur within area
Bubulcus ibis as Ardea ibis		
Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Breeding known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Fish		
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus minotaur Bullneck Seahorse [66705]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys mollisoni Mollison's Pipefish [66260]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Whales and Other Cetaceans [Resource Information]		
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Apollo	Multiple Use Zone (IUCN VI)	

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	
Aire River	Heritage River	VIC	
Aire River W.R.	Natural Features Reserve	VIC	
Bay of Islands Coastal Park	Conservation Park	VIC	
Great Otway	National Park	VIC	
Johanna Falls S.R.	Natural Features Reserve	VIC	
Port Campbell	National Park	VIC	
Princetown W.R	Natural Features Reserve	VIC	
The Arches	Marine Sanctuary	VIC	
Twelve Apostles	Marine National Park	VIC	

Regional Forest Agreements

[[Resource Information](#)]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name

State

[West Victoria RFA](#)

Victoria

Nationally Important Wetlands

[[Resource Information](#)]

Wetland Name

State

[Aire River](#)

VIC

[Lower Aire River Wetlands](#)

VIC

[Princetown Wetlands](#)

VIC

EPBC Act Referrals

[[Resource Information](#)]

Title of referral

Reference

Referral Outcome

Assessment Status

Controlled action

[Casino Gas Field Development](#)

2003/1295

Controlled Action

Post-Approval

[Otway Development](#)

2002/621

Controlled Action

Post-Approval

[Schomberg 3D Marine Seismic Survey](#)

2007/3754

Controlled Action

Completed

[Strike Oil Gas Exploration Well, Otway Basin \(VIC/P44\)](#)

2000/97

Controlled Action

Completed

[Twelve Apostles Saddle Lookout](#)

2019/8571

Controlled Action

Post-Approval

Not controlled action

[CO2 geosequestration - Otway Basin Pilot Project](#)

2006/2699

Not Controlled Action

Completed

[Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic](#)

2019/8438

Not Controlled Action

Completed

[Exploration drilling for liquid/gaseous hydrocarbons](#)

2004/1681

Not Controlled Action

Completed

[Gas Fields Development](#)

2011/5879

Not Controlled Action

Completed

[Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic](#)

2015/7551

Not Controlled Action

Completed

[Henry-1 Exploration Well, Petroleum Permit Area VIC/P44](#)

2005/2147

Not Controlled Action

Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Minerva Cut Back Project, Vic	2017/8036	Not Controlled Action	Completed
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval
Southern Gas Pipeline Project	2002/619	Not Controlled Action (Particular Manner)	Post-Approval
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
Strike Oil NL Seismic Surveys	2000/107	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
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Biologically Important Areas

Scientific Name	Behaviour	Presence
Seabirds		
Ardena pacifica		
Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Ardena pacifica		
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardena tenuirostris		
Short-tailed Shearwater [82652]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur
Sharks		
Carcharodon carcharias White Shark [64470]	Distribution	Known to occur
Carcharodon carcharias White Shark [64470]	Distribution (low density)	Likely to occur
Carcharodon carcharias White Shark [64470]	Known distribution	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present

Scientific Name	Behaviour	Presence
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact us](#) page.

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EPBC Act Protected Matters Report - Socio-economic EMBA

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 23-Feb-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	2
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	86
Listed Migratory Species:	53

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	2
Commonwealth Heritage Places:	None
Listed Marine Species:	92
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	1
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	9
Regional Forest Agreements:	1
Nationally Important Wetlands:	3
EPBC Act Referrals:	34
Key Ecological Features (Marine):	None
Biologically Important Areas:	19
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status
Historic		
Great Ocean Road and Scenic Environs	VIC	Listed place

Commonwealth Marine Area [\[Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name

Commonwealth Marine Areas (EPBC Act)

Commonwealth Marine Areas (EPBC Act)

Listed Threatened Ecological Communities [\[Resource Information \]](#)

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Assemblages of species associated with open-coast salt-wedge estuaries of western and central Victoria ecological community	Endangered	Community likely to occur within area
Giant Kelp Marine Forests of South East Australia	Endangered	Community may occur within area
Natural Damp Grassland of the Victorian Coastal Plains	Critically Endangered	Community may occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		

Scientific Name	Threatened Category	Presence Text
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat may occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thinornis cucullatus cucullatus Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Nannoperca obscura Yarra Pygmy Perch [26177]	Endangered	Species or species habitat may occur within area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area
Serirolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
FROG		
Litoria raniformis Southern Bell Frog,, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]	Vulnerable	Species or species habitat known to occur within area
MAMMAL		
Antechinus minimus maritimus Swamp Antechinus (mainland) [83086]	Vulnerable	Species or species habitat known to occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area
Mastacomys fuscus mordicus Broad-toothed Rat (mainland), Tooarrana [87617]	Endangered	Species or species habitat known to occur within area
Miniopterus orianae bassanii Southern Bent-wing Bat [87645]	Critically Endangered	Roosting known to occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus trisulcatus Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat known to occur within area
Pseudomys fumeus Smoky Mouse, Koonoom [88]	Endangered	Species or species habitat may occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

PLANT

Scientific Name	Threatened Category	Presence Text
Amphibromus fluitans River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]	Vulnerable	Species or species habitat may occur within area
Astelia australiana Tall Astelia [10851]	Vulnerable	Species or species habitat may occur within area
Eucalyptus strzeleckii Strzelecki Gum [55400]	Vulnerable	Species or species habitat known to occur within area
Glycine latrobeana Clover Glycine, Purple Clover [13910]	Vulnerable	Species or species habitat known to occur within area
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat known to occur within area
Lepidium aschersonii Spiny Peppercross [10976]	Vulnerable	Species or species habitat may occur within area
Lepidium hyssopifolium Basalt Pepper-cress, Peppercross, Rubble Pepper-cress, Pepperweed [16542]	Endangered	Species or species habitat may occur within area
Prasophyllum spicatum Dense Leek-orchid [55146]	Vulnerable	Species or species habitat known to occur within area
Pterostylis chlorogramma Green-striped Greenhood [56510]	Vulnerable	Species or species habitat may occur within area
Pterostylis cucullata Leafy Greenhood [15459]	Vulnerable	Species or species habitat known to occur within area
Pterostylis tenuissima Swamp Greenhood, Dainty Swamp Orchid [13139]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Senecio psilocarpus Swamp Fireweed, Smooth-fruited Groundsel [64976]	Vulnerable	Species or species habitat known to occur within area
Thelymitra epipactoides Metallic Sun-orchid [11896]	Endangered	Species or species habitat known to occur within area
Thelymitra matthewsii Spiral Sun-orchid [4168]	Vulnerable	Species or species habitat may occur within area
Thelymitra orientalis Hoary Sun-orchid [88011]	Critically Endangered	Species or species habitat may occur within area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat likely to occur within area

REPTILE

Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Lissolepis coventryi Swamp Skink, Eastern Mourning Skink [84053]	Endangered	Species or species habitat known to occur within area

SHARK

Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area

Listed Migratory Species

[\[Resource Information \]](#)

Scientific Name	Threatened Category	Presence Text
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Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat may occur within area
Ardenna tenuirostris Short-tailed Shearwater [82652]		Breeding known to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area

Scientific Name	Threatened Category	Presence Text
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Isurus oxyrinchus Shortfin Mako, Mako Shark [79073]		Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands

[[Resource Information](#)]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name

State

Unknown

Commonwealth Land - [21583]

VIC

Commonwealth Land - [21492]

VIC

Listed Marine Species

[[Resource Information](#)]

Scientific Name

Threatened Category

Presence Text

Bird

[Actitis hypoleucos](#)

Common Sandpiper [59309]

Species or species habitat known to occur within area

[Anseranas semipalmata](#)

Magpie Goose [978]

Species or species habitat may occur within area overfly marine area

[Apus pacificus](#)

Fork-tailed Swift [678]

Species or species habitat likely to occur within area overfly marine area

[Ardenna carneipes as Puffinus carneipes](#)

Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]

Foraging, feeding or related behaviour likely to occur within area

[Ardenna grisea as Puffinus griseus](#)

Sooty Shearwater [82651]

Vulnerable

Species or species habitat may occur within area

[Ardenna tenuirostris as Puffinus tenuirostris](#)

Short-tailed Shearwater [82652]

Breeding known to occur within area

[Bubulcus ibis as Ardea ibis](#)

Cattle Egret [66521]

Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Eudyptula minor Little Penguin [1085]		Breeding known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Breeding known to occur within area
Halobaena caerulea Blue Petrel [1059]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Migration route likely to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Phalacrocorax fuscescens Black-faced Cormorant [59660]		Breeding known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat likely to occur within area
Pterodroma mollis Soft-plumaged Petrel [1036]	Vulnerable	Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche chrysostoma Grey-headed Albatross [66491]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Thinornis cucullatus as Thinornis rubricollis Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Fish		
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area
Hippocampus minotaur Bullneck Seahorse [66705]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Histiogamphelus cristatus Rhino Pipefish, Macleay's Crested Pipefish, Ring-back Pipefish [66243]		Species or species habitat may occur within area
Hypselognathus rostratus Knifesnout Pipefish, Knife-snouted Pipefish [66245]		Species or species habitat may occur within area
Kaupus costatus Deepbody Pipefish, Deep-bodied Pipefish [66246]		Species or species habitat may occur within area
Leptoichthys fistularius Brushtail Pipefish [66248]		Species or species habitat may occur within area
Lissocampus caudalis Australian Smooth Pipefish, Smooth Pipefish [66249]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Mitotichthys mollisoni Mollison's Pipefish [66260]		Species or species habitat may occur within area
Mitotichthys semistriatus Halfbanded Pipefish [66261]		Species or species habitat may occur within area
Mitotichthys tuckeri Tucker's Pipefish [66262]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phycodurus eques Leafy Seadragon [66267]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Pugnaso curtirostris Pugnose Pipefish, Pug-nosed Pipefish [66269]		Species or species habitat may occur within area
Solegnathus robustus Robust Pipehorse, Robust Spiny Pipehorse [66274]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area
Stipecampus cristatus Ringback Pipefish, Ring-backed Pipefish [66278]		Species or species habitat may occur within area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area
Vanacampus poecilolaemus Longsnout Pipefish, Australian Longsnout Pipefish, Long-snouted Pipefish [66285]		Species or species habitat may occur within area
Mammal		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area
Neophoca cinerea Australian Sea-lion, Australian Sea Lion [22]	Endangered	Species or species habitat may occur within area
Reptile		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
Whales and Other Cetaceans [Resource Information]		
Current Scientific Name	Status	Type of Presence
Mammal		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Foraging, feeding or related behaviour known to occur within area
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Breeding known to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area

Current Scientific Name	Status	Type of Presence
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area
Pseudorca crassidens False Killer Whale [48]		Species or species habitat likely to occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Australian Marine Parks		[Resource Information]
Park Name	Zone & IUCN Categories	
Apollo	Multiple Use Zone (IUCN VI)	

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	
Aire River	Heritage River	VIC	
Aire River W.R.	Natural Features Reserve	VIC	
Bay of Islands Coastal Park	Conservation Park	VIC	
Great Otway	National Park	VIC	
Johanna Falls S.R.	Natural Features Reserve	VIC	
Port Campbell	National Park	VIC	
Princetown W.R	Natural Features Reserve	VIC	
The Arches	Marine Sanctuary	VIC	
Twelve Apostles	Marine National Park	VIC	

Regional Forest Agreements

[[Resource Information](#)]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name

State

[West Victoria RFA](#)

Victoria

Nationally Important Wetlands

[[Resource Information](#)]

Wetland Name

State

[Aire River](#)

VIC

[Lower Aire River Wetlands](#)

VIC

[Princetown Wetlands](#)

VIC

EPBC Act Referrals

[[Resource Information](#)]

Title of referral

Reference

Referral Outcome

Assessment Status

Controlled action

[Casino Gas Field Development](#)

2003/1295

Controlled Action

Post-Approval

[Otway Development](#)

2002/621

Controlled Action

Post-Approval

[Schomberg 3D Marine Seismic Survey](#)

2007/3754

Controlled Action

Completed

[Strike Oil Gas Exploration Well, Otway Basin \(VIC/P44\)](#)

2000/97

Controlled Action

Completed

[Twelve Apostles Saddle Lookout](#)

2019/8571

Controlled Action

Post-Approval

Not controlled action

[CO2 geosequestration - Otway Basin Pilot Project](#)

2006/2699

Not Controlled Action

Completed

[Enterprise 1 Exploration Drilling Program, near Port Campbell, Vic](#)

2019/8438

Not Controlled Action

Completed

[Exploration drilling for liquid/gaseous hydrocarbons](#)

2004/1681

Not Controlled Action

Completed

[Gas Fields Development](#)

2011/5879

Not Controlled Action

Completed

[Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic](#)

2015/7551

Not Controlled Action

Completed

[Henry-1 Exploration Well, Petroleum Permit Area VIC/P44](#)

2005/2147

Not Controlled Action

Completed

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Minerva Cut Back Project, Vic	2017/8036	Not Controlled Action	Completed
Nirranda South Wind Farm Pty Ltd	2002/763	Not Controlled Action	Completed
Offshore exploration drilling within permit area VIC/P 37(v)	2004/1466	Not Controlled Action	Completed
Port Campbell Headland Walking Trail Realignment	2012/6676	Not Controlled Action	Completed
Track construction - Great Ocean Walk	2002/793	Not Controlled Action	Completed
VIC-P44 Stage 2 Gas Field Development	2007/3767	Not Controlled Action	Completed
Victorian Generator Project	2005/1984	Not Controlled Action	Completed
Wind Farm Construction and Operation	2001/471	Not Controlled Action	Completed
Not controlled action (particular manner)			
'Moonlight Head' 3D seismic survey, VIC/P38(V), VIC/P43 and VIC/RL8	2005/2236	Not Controlled Action (Particular Manner)	Post-Approval
3D seismic program VIC/P38(v), VIC/P43 and VIC/RL8	2003/1137	Not Controlled Action (Particular Manner)	Post-Approval
Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria	2016/7800	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval
Santos Otway 3d Seismic VIC/P44	2007/3367	Not Controlled Action (Particular Manner)	Post-Approval

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
Schomberg 3D Marine Seismic survey	2007/3868	Not Controlled Action (Particular Manner)	Post-Approval
Southern Gas Pipeline Project	2002/619	Not Controlled Action (Particular Manner)	Post-Approval
Speculant 3D Transition Zone Seismic Survey	2010/5558	Not Controlled Action (Particular Manner)	Post-Approval
Strike Oil NL Seismic Surveys	2000/107	Not Controlled Action (Particular Manner)	Post-Approval
The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic	2012/6565	Not Controlled Action (Particular Manner)	Post-Approval
Vic/P37(v) and Vic/P44 3D marine seismic survey	2003/1102	Not Controlled Action (Particular Manner)	Post-Approval
VIC P44 Gas Exploration Wells	2002/662	Not Controlled Action (Particular Manner)	Post-Approval

Referral decision

The Enterprise 3D Seismic Acquisition Survey, Otway Basin, VIC	2012/6545	Referral Decision	Completed
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Biologically Important Areas

Scientific Name	Behaviour	Presence
Seabirds		
Ardena pacifica		
Wedge-tailed Shearwater [84292]	Breeding	Known to occur
Ardena pacifica		
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur
Ardena tenuirostris		
Short-tailed Shearwater [82652]	Foraging	Known to occur

Scientific Name	Behaviour	Presence
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Foraging	Known to occur
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur
Pelagodroma marina White-faced Storm-petrel [1016]	Foraging	Known to occur
Pelecanoides urinatrix Common Diving-petrel [1018]	Foraging	Known to occur
Thalassarche bulleri Bullers Albatross [64460]	Foraging	Known to occur
Thalassarche cauta cauta Shy Albatross [82345]	Foraging likely	Likely to occur
Thalassarche chlororhynchos bassi Indian Yellow-nosed Albatross [85249]	Foraging	Known to occur
Thalassarche melanophris Black-browed Albatross [66472]	Foraging	Known to occur
Thalassarche melanophris impavida Campbell Albatross [82449]	Foraging	Known to occur
Sharks		
Carcharodon carcharias White Shark [64470]	Distribution	Known to occur
Carcharodon carcharias White Shark [64470]	Distribution (low density)	Likely to occur
Carcharodon carcharias White Shark [64470]	Known distribution	Known to occur
Whales		
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Distribution	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging	Likely to be present

Scientific Name	Behaviour	Presence
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Foraging (annual high use area)	Known to occur
Balaenoptera musculus brevicauda Pygmy Blue Whale [81317]	Known Foraging Area	Known to occur

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

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Appendix E Oil Pollution Emergency Plan

CONTROLLED DOCUMENT

Title: Oil Spill Preparedness and Response Mitigation Assessment for Minerva Decommissioning and Field Management Environment Plan



Controlled Ref No: Z0005AF1401798056

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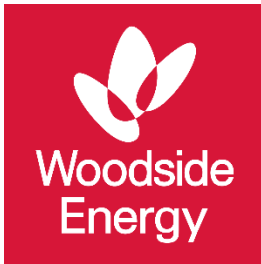
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Oil Spill Preparedness and Response Mitigation Assessment for Minerva Decommissioning and Field Management Environment Plan

Corporate HSE

Hydrocarbon Spill Preparedness

March 2024

Revision 0

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EXECUTIVE SUMMARY

Woodside Energy (Victoria) Pty Ltd (Woodside) has developed its oil spill preparedness and response position for Minerva Decommissioning and Field Management activities, hereafter known as the Petroleum Activities Program (PAP).

This document demonstrates that the risks and impacts from an unplanned hydrocarbon release, and the associated response operations, are controlled to As Low as Reasonably Practicable (ALARP) and Acceptable levels. It achieves this by evaluating response options to address the potential environmental impacts resulting from an unplanned loss of hydrocarbon containment associated with the PAP detailed in the Environment Plan (EP). This document then details Woodside’s decisions and techniques for responding to a hydrocarbon release event and the process for determining its level of hydrocarbon spill preparedness.

A summary of the key facts and references to additional detail within this document are presented below.

Table 0-1: Summary of the key details for assessment

Key details of assessment	Summary	Reference to additional detail	
Worst Case Credible Scenario	<p>Credible Scenario-02 (CS-02): Loss of containment of Marine Diesel Oil (MDO) resulting from a vessel collision at the nearest point of the operational area to the Victorian coast</p> <p>38° 42' 6.89" S 142° 57' 17.28" E, surface release.</p> <p>Six-hour release of 330 m³ of MDO</p>	Section 2.2	
Hydrocarbon Properties	<p>Marine Diesel Oil (MDO) (API Gravity 0.843)</p> <p>Marine Diesel (IKU) was selected as representative of MDO for the vessel collision loss of containment scenario (CS-02).</p> <p>MDO is a moderate weight, moderately persistent oil in the marine environment. Under low winds (1 m/s), 60% of the surface slick is predicted to remain after 120 hours (5 days). Under moderate winds (5 m/s), 40% of the initial surface slick is predicted to remain after 24 hours, decreasing further to ~10% after 48 hours and ~1% after 72 hours. With high winds (10 m/s), the surface slick is predicted to be almost entirely evaporated (~25%) and dispersed (~75%) after 12 hours.</p>	Section 8 of the EP Appendix A of the First Strike Plan	
Modelling Results	<p>Stochastic modelling</p> <p>A quantitative, stochastic assessment has been undertaken for credible spill scenarios to help assess the environmental risk of a hydrocarbon spill.</p> <p>A total of 400 replicate simulations were completed for CS-02 to test for trends and variations in the trajectory and weathering of the spilled oil, with an even number of replicates completed in Autumn-Winter and Spring-Summer seasons.</p>	Section 2.2	
			<p>CS-02: MDO release of 330 m³ over six hours resulting from a vessel collision – results from stochastic modelling</p>
	<p>Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline</p>		<p>0.1 days at Otway</p>

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	receptor polygon (at a concentration of 10 g/m ²)		
	Minimum time to shoreline contact (above 100 g/m ²)	0.2 days at Warrnambool Plain (186.7 tonnes)	
	Peak mass of oil ashore (tonnes) at any individual shoreline receptor (at concentrations exceeding 100 g/m ²)	186.7 tonnes at Warrnambool Plain (0.2 days)	
	Peak mass shoreline accumulation (above 100 g/m ²) all shorelines	186.7 tonnes at Warrnambool Plain (0.2 days)	
	Minimum time to entrained/dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a threshold of 100 ppb)	0.1 days at Otway	
Net Environmental Benefit Analysis	Operational monitoring, source control via vessel SOPEP, protection and deflection, shoreline clean-up, oiled wildlife response, are all identified as potentially having a net environmental benefit (dependent on the actual spill scenario) and carried forward for further assessment.		Section 4
ALARP evaluation of selected response techniques	The evaluation of the selected response techniques shows the proposed controls reduced the risk to an ALARP and Acceptable level for the risk presented in Section 2, without the implementation of considered additional, alternative or improved control measures.		Section 7

1 INTRODUCTION

1.1 Overview

Woodside Energy (Victoria) Pty Ltd (Woodside) has developed its oil spill preparedness and response position for Minerva Decommissioning and Field Management activities, hereafter known as the Petroleum Activities Program (PAP). This document details Woodside's decisions and techniques for responding to a hydrocarbon loss of containment event and the process for determining its level of hydrocarbon spill preparedness.

1.2 Purpose

This document, together with the documents listed below, meet the requirements of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Environment Regulations) relating to hydrocarbon spill response arrangements.

- The Minerva Decommissioning and Field Management Environment Plan (EP)
- Oil Pollution Emergency Arrangements (OPEA) (Australia)
- The Minerva Decommissioning and Field Management Oil Pollution Emergency Plan (OPEP) including
 - First Strike Plan (FSP)
 - Relevant Operations Plans
 - Relevant Tactical Response Plans (TRPs)
 - Relevant Supporting Plans
 - Data Directory.

1.3 Scope

This document demonstrates that the risks and impacts from an unplanned hydrocarbon release, and the associated response operations, are controlled to As Low as Reasonably Practicable (ALARP) and Acceptable levels. It achieves this by evaluating response options to address the potential environmental risks and impacts resulting from an unplanned loss of hydrocarbon containment associated with the PAP detailed in the EP. This document then details Woodside's decisions and techniques for responding to a hydrocarbon release event and the process for determining its level of hydrocarbon spill preparedness. It should be read in conjunction with the documents listed in **Table 1-1**. The location of the PAP is shown in Figure 2-3.

1.4 Oil spill response document overview

The documents outlined in **Table 1-1** and **Figure 1-1** are collectively used to manage the preparedness and response for a hydrocarbon release.

The Oil Pollution First Strike Plan (FSP) contains a pre-operational Net Environmental Benefit Analysis (NEBA) summary, detailing the selected response techniques for this PAP. Relevant Operational Plans to be initiated for associated response techniques are identified in the FSP and relevant forms to initiate a response are appended to the FSP.

The process to develop an Incident Action Plan (IAP) begins once the Oil Pollution FSP is underway. The IAP includes inputs from the Operational Monitoring operations and the operational NEBA (**Section 4**). Planning, coordination and resource management are initiated by the Corporate Incident Management Team (CIMT). In some instances, technical specialists may be utilised to provide expert advice. The planning may also involve liaison officers from supporting government agencies.

During each operational period, field reports are continually reviewed to evaluate the effectiveness of response operations. In addition, the operational NEBA is continually reviewed and updated to confirm that the response techniques implemented continue to result in a net environmental benefit (**Section 4**).

The response will continue as described in **Section 5** until the response termination criteria have been met.

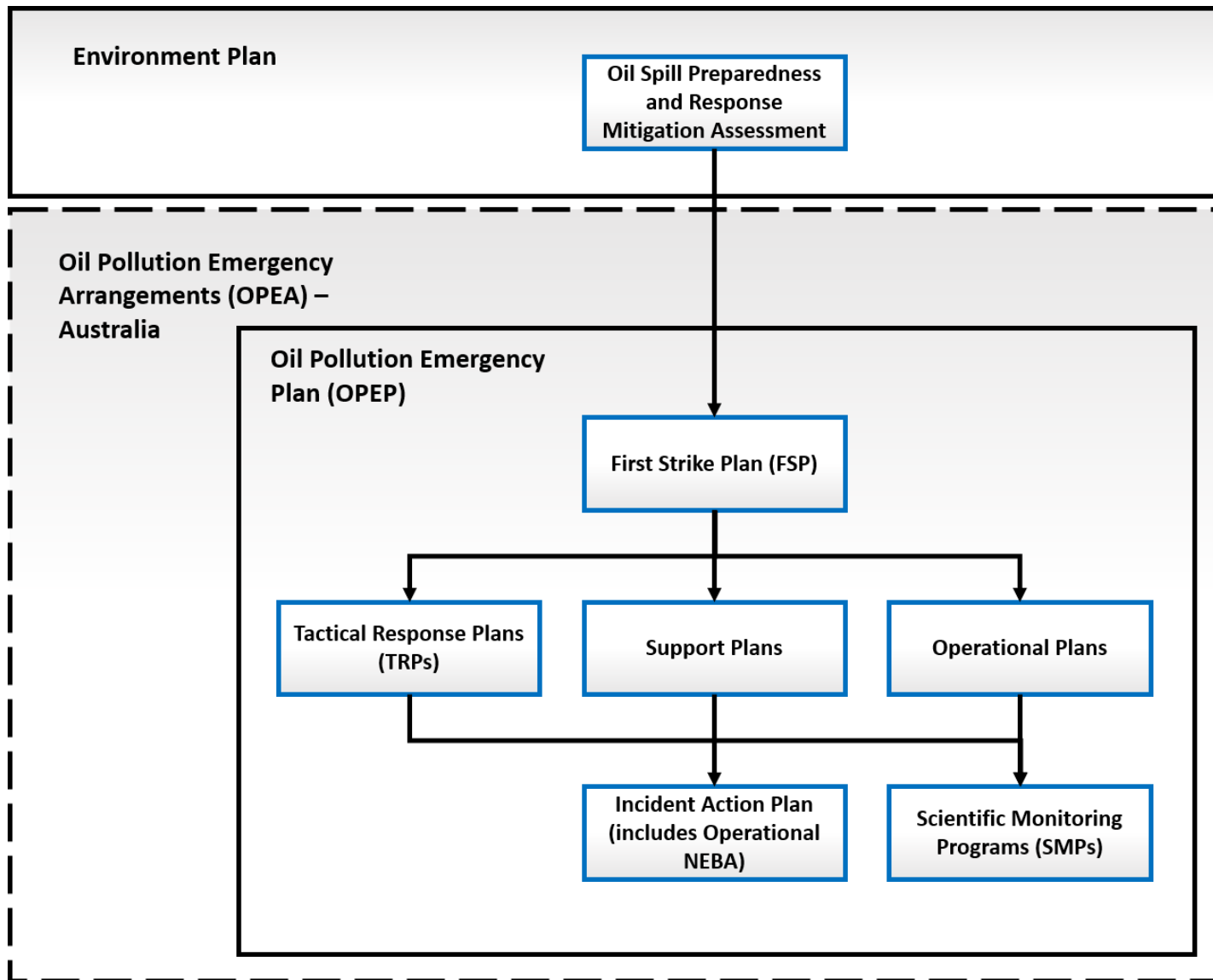


Figure 1-1: Woodside hydrocarbon spill document structure

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Table 1-1: Hydrocarbon Spill preparedness and response – document references

Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Minerva Decommissioning and Field Management Environment Plan (EP)	Demonstrates that potential adverse impacts on the environment associated with Minerva Decommissioning and Field Management activities (during both routine and non-routine operations) are mitigated and managed to As Low As Reasonably Practicable (ALARP) and will be of an acceptable level.	NOPSEMA Woodside internal	EP Section 4 (Identification and evaluation of environmental risks and impacts, including credible spill scenarios) EP Section 8 (Performance outcomes, standards and measurement criteria) EP Section 9 (Implementation strategy – including emergency preparedness and response, and reporting and compliance)	
Oil Pollution Emergency Arrangements (OPEA) Australia	Describes the arrangements and processes adopted by Woodside when responding to a hydrocarbon spill from a petroleum activity.	Regulatory agencies Woodside internal	All	
Oil Spill Preparedness and Response Mitigation Assessment for Minerva Decommissioning and Field Management activities (this document)	Evaluates response options to address the potential environmental impacts resulting from an unplanned loss of hydrocarbon containment associated with the PAP described in the EP.	Regulatory agencies Corporate Incident Management Team (CIMT): Control function in an ongoing spill response for activity-specific response information.	All Performance outcomes, standards and measurement criteria related to hydrocarbon spill preparedness and response are included in this document.	
Minerva Decommissioning and Field Management Oil	Facility specific document providing details and tasks to mobilise a first strike response.	Site-based IMT for initial response, activation and notification. CIMT for initial response, activation and notification.	Initial notifications and reporting within the first 24 hours of a spill event.	

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Pollution First Strike Plan	<p>Primarily applied to the first 24 hours of a response until a full Incident Action Plan (IAP) specific to the event is developed.</p> <p>Oil Pollution First Strike Plans are intended to be the first document used to provide immediate guidance to the responding Incident Management Team (IMT).</p>	<p>CIMT: Control function in an ongoing spill response for activity-specific response information.</p>	<p>Relevant spill response options that could be initiated for mobilisation in the event of a spill.</p> <p>Recommended pre-planned tactics.</p> <p>Details and forms for use in immediate response. Activation process for oil spill trajectory modelling, aerial surveillance and oil spill tracking buoy details.</p>	
Operational Plans	<p>Lists the actions to activate, mobilise and deploy personnel and resources to commence response operations.</p> <p>Includes details on access to equipment and personnel (available immediately) and steps to mobilise additional resources depending on the nature and scale of a release.</p> <p>Relevant operational plans will be initially selected based on the Oil Pollution First Strike Plan; additional operational plans will be activated depending on the nature and scale of the release.</p>	<p>CIMT: Operations and Logistics functions for first strike activities.</p> <p>CIMT: Planning Function to help inform the IAP on resources available.</p>	<p>Locations from where resources may be mobilised.</p> <p>How resources will be mobilised.</p> <p>Details of where resources may be mobilised to and what facilities are needed once the resources arrive.</p> <p>Details on how to implement resources to undertake a response.</p>	<p>Operational Monitoring Operational Plan</p> <p>Vessel Shipboard Oil Pollution Emergency Plan (SOPEP)</p> <p>Shoreline Protection and Deflection Operational Plan</p> <p>Shoreline Clean-Up Operational Plan</p> <p>Oiled Wildlife Response Operational Plan</p> <p>Scientific Monitoring Program</p>

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Document	Document overview	Stakeholders	Relevant information	Document subsections (if applicable)
Tactical Response Plans	Provides options for response techniques in selected RPAs. Provides site, access and deployment information to support a response at the location.	CIMT: Planning Function to help develop IAPs, and Logistics Function to assist with determining resources needed.	Indicative response techniques. Access requirements and/or permissions. Relevant information for undertaking a response at that site. Where applicable, may include equipment deployment locations and site layouts.	Tactical Response Plans available for Minerva Decommissioning and Field Management activities include: <ul style="list-style-type: none"> • Aire River • Curdies Inlet • Gellibrand River • Warrnambool
Support Plans	Support Plans detail Woodside's approach to resourcing and the provision of services during a hydrocarbon spill response.	CIMT: Operations, Logistics and Planning functions.	Technique for mobilising and managing additional resources outside of Woodside's immediate preparedness arrangements.	Logistics Support Plan Aviation Support Plan Marine Support Plan Waste Management Plan – Australia Health and Safety Support Plan Hydrocarbon Spill Responder Health Monitoring Guidelines People and Global Capability (Surge Labour Requirements) Support Plan Stakeholder Engagement Support Plan Guidance for Hydrocarbon Spill Claims Management

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2 RESPONSE PLANNING PROCESS

This document details Woodside's process for identifying potential response options for the hydrocarbon release scenarios, identified in the EP. **Figure 2-1** details the interaction between Woodside's response, planning/ preparedness and selection process.

This structure has been used because it shows how the planning and preparedness activities inform a response and provides indicative guidance on what activities would be undertaken, in sequential order, if a real event were to occur. The process also evaluates alternative, additional and/or improved control measures specific to the PAP.

The Minerva Decommissioning and Field Management Oil Pollution First Strike Plan (FSP) then summarises the outcome of the response planning process and provides initial response guidance and a summary of ongoing response activities, if an incident were to occur.

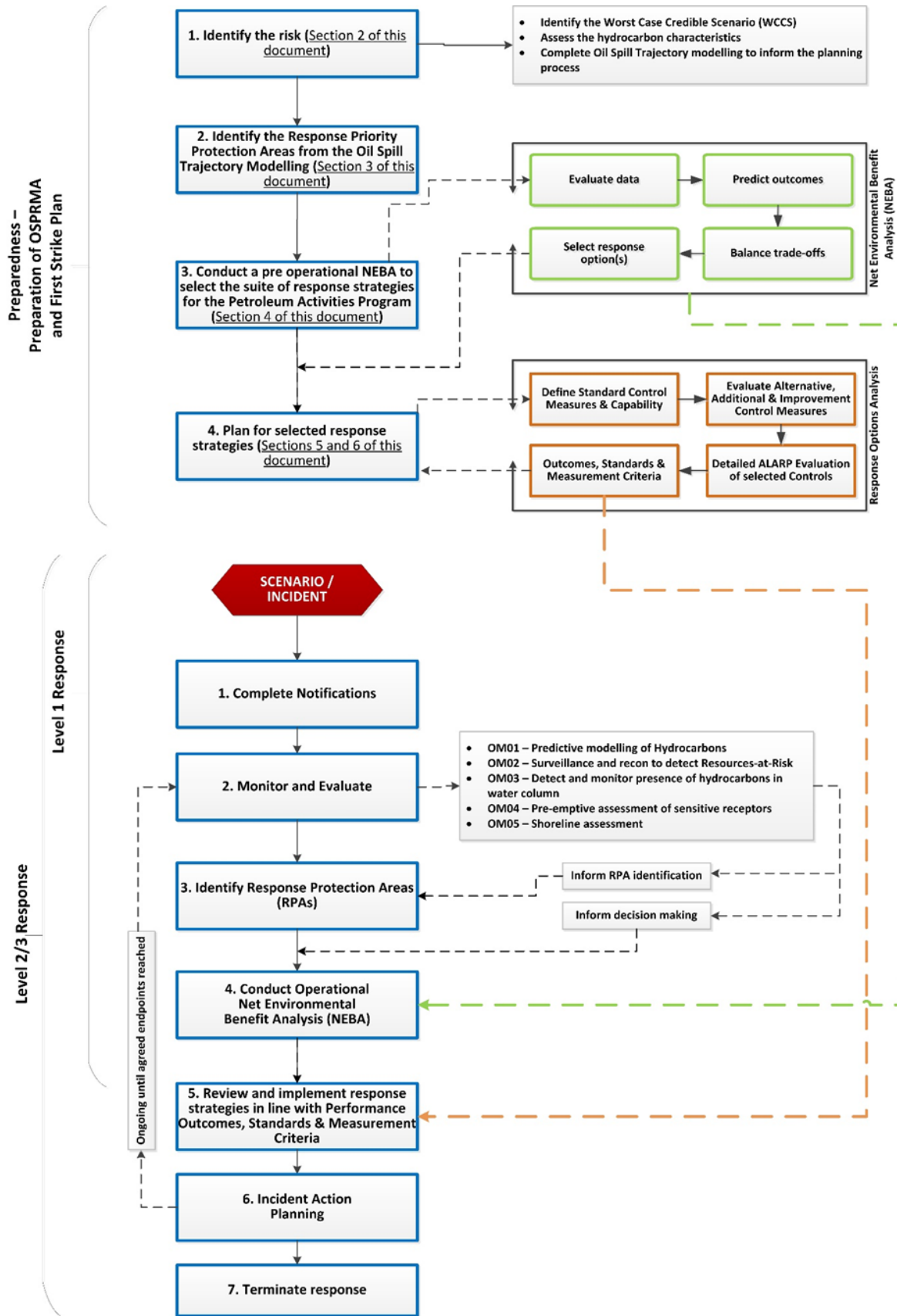


Figure 2-1: Response planning and selection process

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2.1 Response planning process outline

This document is expanded below to provide additional context on the key steps in determining capability, evaluating ALARP and hydrocarbon spill response requirements.

- Section 1. INTRODUCTION
- Section 2. RESPONSE PLANNING PROCESS
 - identification of worst-case credible scenario(s) (WCCS)
 - spill modelling for WCCS.
- Section 3. IDENTIFY RESPONSE PROTECTION AREAS (RPAs)
 - areas predicted to be contacted at concentration >100 g/m².
- Section 4. NET ENVIRONMENTAL BENEFIT ANALYSIS (NEBA)
 - pre-operational NEBA (during planning/ALARP evaluation): this must be reviewed during the initial response to an incident to confirm its accuracy
 - selected response techniques prioritised and carried forward for ALARP assessment.
- Section 5. HYDROCARBON SPILL ALARP PROCESS
 - determines the response need based on predicted consequence parameters.
 - details the environmental performance of the selected response options based on need.
 - sets the environmental performance outcomes, environmental performance standards and measurement criteria.
- Section 6. ALARP EVALUATION
 - evaluates alternative, additional, and improved options for each response technique to demonstrate the risk has been reduced to ALARP.
 - provides a detailed ALARP assessment of selected control measure options against:
 - predicted cost associated with implementing the option
 - predicted change to environmental benefit
 - predicted effectiveness/ feasibility of the control measure.
- Section 7. ENVIRONMENTAL RISK ASSESSMENT OF SELECTED RESPONSE TECHNIQUES
 - evaluation of impacts and risks from implementing selected response options.
- Section 8. ALARP CONCLUSION
- Section 9. ACCEPTABILITY CONCLUSION

2.1.1 Response Planning Assumptions

Figure 2-2 illustrates the initial steps of a response to an oil spill event and, where available, the indicative timing. For the latter stages, the timing will be specific to the selective response option.

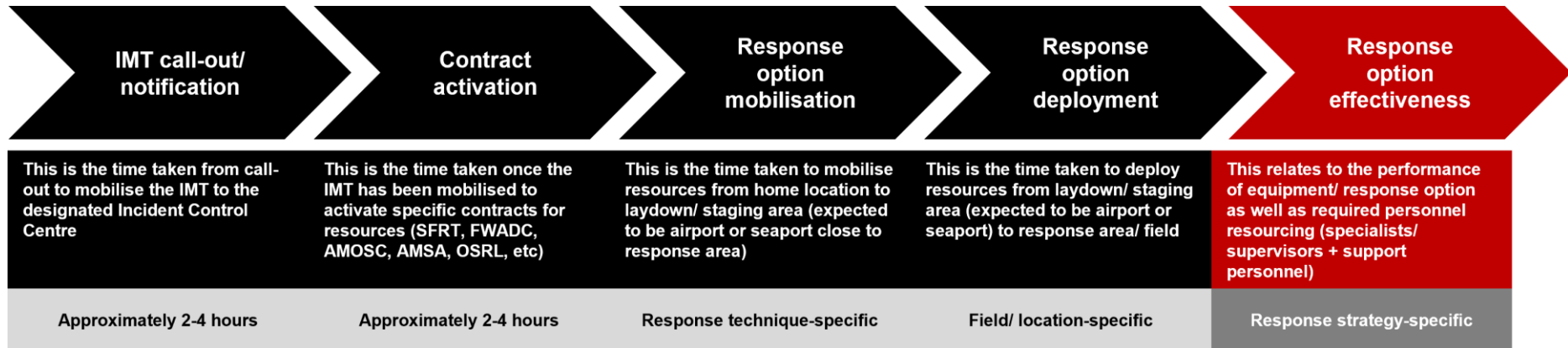


Figure 2-2: Response planning assumption – timing, resourcing and effectiveness

2.2 Environment plan risk assessment (credible spill scenarios)

Potential hydrocarbon release scenarios from the PAP have been identified during the risk assessment process in the EPs. Further descriptions of risk, impacts and mitigation measures (which are not related to hydrocarbon preparedness and response) are provided in Section 8 of the EP. Two unplanned events or credible spill scenarios for the PAP have been selected as representative across types, sources and incident/response levels, up to and including the WCCS.

Table 2-1 presents the credible scenario for the PAP. The WCCS for the activity is then used for response planning purposes, as all other scenarios are of a lesser scale and extent. By demonstrating capability to manage the response to the WCCS, Woodside assumes other scenarios that are smaller in nature and scale can also be managed by the same capability. Response performance measures have been defined based on a response to the WCCS.

One oil spill modelling scenario was selected as representative of the planned Minerva Decommissioning and Field Management activities. Credible Scenario-02 (CS-02) is a loss of containment of marine diesel oil (MDO) following a collision between the project vessel and a third-party vessel at the nearest point of the Operational Area to the Victorian Coast.

The location of CS-02 is shown in Figure 2-3.

Table 2-1: Petroleum Activities Program credible spill scenarios

Credible Spill Scenarios	Scenario selected for planning purposes	Scenario description	Maximum credible volume released (liquid m ³)	Incident level	Hydrocarbon type	Residual proportion	
						Wind speed	Residue
CS-02	Yes	Surface loss of containment resulting from a vessel collision at the nearest point of the Operational Area to the Victorian coast	330 m ³ MDO	2	MDO	Low wind	40%, 132 m ³
						Moderate wind	1%, 3.3 m ³ (within 72 hours)
						High wind	0%, 0 m ³ (within 12 hours)

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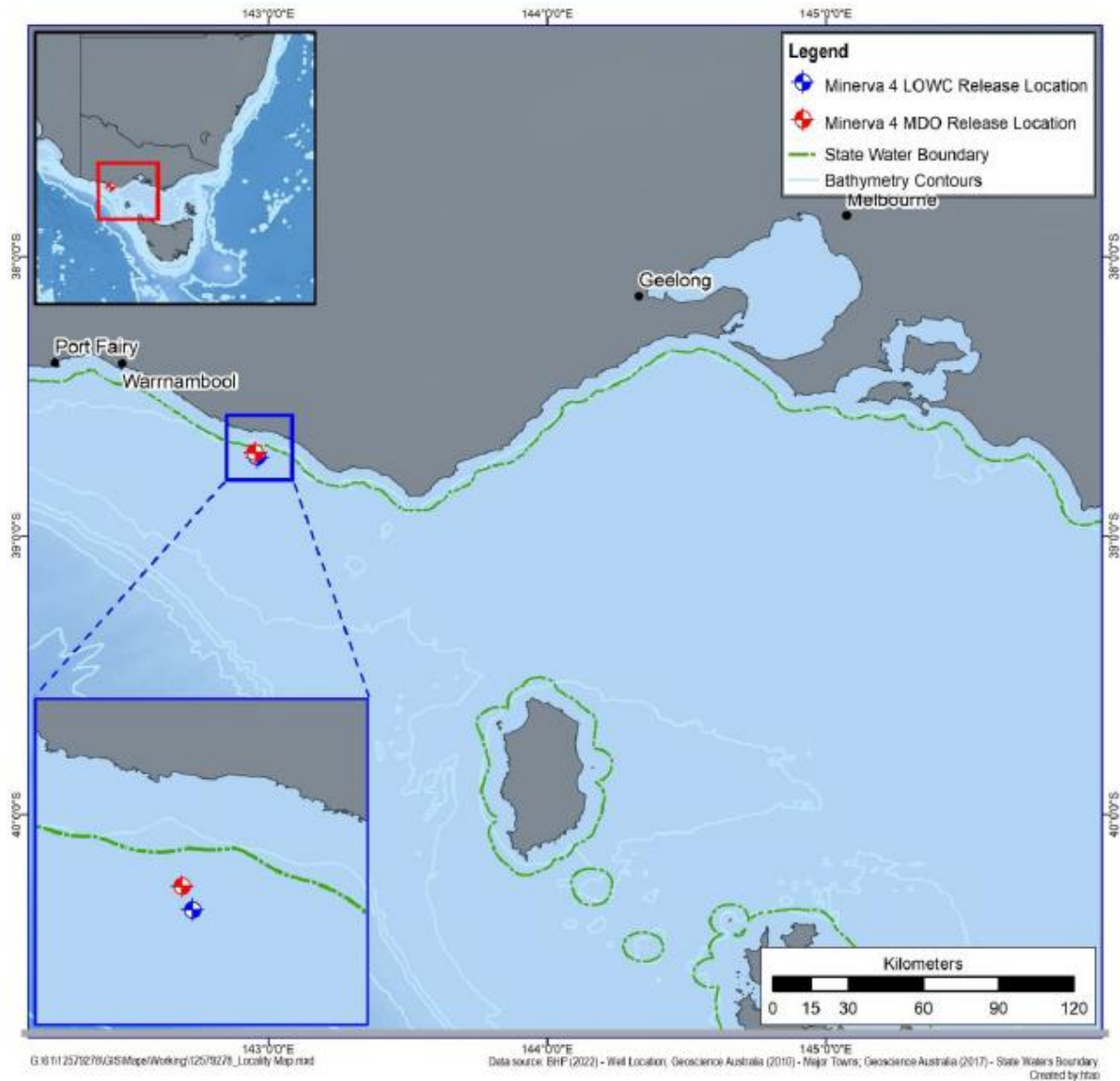


Figure 2-3: Location of CS-02

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2.2.1 Hydrocarbon characteristics

Hydrocarbon characteristics, including modelled weathering data and ecotoxicity, are included in Section 8 of the EP.

Marine Diesel Oil

Marine Diesel (IKU) was selected as representative of MDO.

MDO is a moderate weight, moderately persistent oil in the marine environment. Under low winds (1 m/s), 60% of the surface slick is predicted to remain after 120 hours (5 days). Under moderate winds (5 m/s), 40% of the initial surface slick is predicted to remain after 24 hours, decreasing further to ~10% after 48 hours and ~1% after 72 hours. With high winds (10 m/s), the surface slick is predicted to be almost entirely evaporated (~25%) and dispersed (~75%) after 12 hours.

2.3 Hydrocarbon spill modelling

Oil spill trajectory modelling tools are used for environmental impact assessment and during response planning to understand spatial scale and timeframes for response operations. Woodside recognises that there is a degree of uncertainty related to the use of modelling data and has subsequently utilised conservative approaches to volumes, weathering, spatial areas, timing and response effectiveness to scale capability to need.

Spill modelling was carried out using SINTEF's Oil Spill Contingency and Response (OSCAR) System (Version 13.0.1). OSCAR is a system of integrated models that quantitatively assess the fate and transport of hydrocarbons in the marine environment, as well as evaluate the efficacy of response measures (Reed et al., 2001; Reed et al., 2004).

OSCAR provides an integrated hydrocarbon transport and weathering model that accounts for hydrocarbon advection, dispersion, surface spreading, entrainment, dissolution, biodegradation, emulsification, volatilisation and shoreline interaction.

Three-dimensional (3D) OSCAR modelling was undertaken in stochastic mode with start dates spaced approximately fortnightly over a five-year period. Inputs into the model were sourced from HYCOM (regional ocean currents, temperature and salinity profiles), TPXO7.2 (tidal currents) and NCEP/NCAR (regional winds). The weathering model (Daling et al., 1997) is supported by an extensive oil library that contains detailed, laboratory-derived data for a wide range of hydrocarbons subjected to a wide range of environmental conditions.

OSCAR enables simulation of a hydrocarbon release scenario in deterministic mode (i.e., a scenario is simulated with one start date with spatial results available at fixed time intervals over the duration of the simulation) or stochastic mode (i.e., a scenario is simulated numerous times with varying start dates, and the results are outputted spatially in a probabilistic manner).

2.3.1 Environmental impact thresholds – EMBA and hydrocarbon exposure

The outputs of the stochastic spill modelling are used to assess the potential environmental impact from the credible scenario. The stochastic modelling results are used to delineate areas of the marine and shoreline environment that could be exposed to hydrocarbon levels exceeding environmental impact threshold concentrations. The summary of all the locations where hydrocarbon thresholds could be exceeded by any of the simulations modelled is defined as the EMBA and is discussed further in Section 8 of the EP. As the weathering of different fates of hydrocarbons (surface, entrained and dissolved) differs due to the influence of the metocean mechanism of transportation, a different EMBA is presented for each fate within the EP.

A conservative approach – adopting accepted contact thresholds for impacts on the marine environment – is used to define the EMBA. These hydrocarbon thresholds are presented in **Table 2-2**.

Deterministic modelling is ordinarily undertaken where initial stochastic modelling has indicated that floating oil is present at a contact threshold of 50 g/m² and/or where there are shoreline accumulations at a contact threshold of 100 g/m². The deterministic modelling outputs are then used to scale the required capability for the offshore (containment and recovery and dispersant) and/or shoreline responses. As CS-02 is for an MDO scenario, therefore offshore response is not feasible. Additionally, shoreline contact at response threshold is all predicted to occur on one day therefore deterministic modelling was not required.

Table 2-2: Summary of thresholds applied to the stochastic hydrocarbon spill modelling to determine the EMBA and environmental impacts

Threshold (MDO)	Description
10 g/m ²	Surface hydrocarbon
100 ppb	Entrained hydrocarbon
50 ppb	Dissolved aromatic hydrocarbon
100 g/m ²	Shoreline accumulation

2.3.2 Response planning thresholds for surface and shoreline hydrocarbon exposure

Thresholds to determine the EMBA are used to predict and assess environmental impacts and inform the scientific monitoring program (SMP); however, they do not appropriately represent the thresholds at which an effective response can be implemented. Additional response thresholds are used for response planning and to determine areas where response techniques would be most effective.

In the event of an actual response, modelling would be reviewed for suitability and additional modelling would be conducted using real-time data and field information to inform Incident Management Team decisions.

The modelling outputs are presented at response planning thresholds for surface hydrocarbons for the WCCS. Surface spill concentrations are expressed as grams per square metre (g/m²). The thresholds used are derived from oil spill response planning literature and industry guidance and are summarised in the next subsections.

2.3.2.1 Surface hydrocarbon concentrations

The surface hydrocarbon thresholds for response planning are summarised in **Table 2-3**. The surface thickness of oil at which dispersants are typically effective is approximately 100 g/m². However, substantial variations occur in the thickness of the oil within the slick, and most fresh crude oils spread within a few hours, so that overall, the average thickness is 0.1 mm (or approximately 100 g/m²) (ITOPF, 2011). Additionally, the recommended rate of application for surface dispersant is typically one part dispersant to 20 or 25 parts of spilled oil. These figures assume a 0.1 mm slick thickness, averaged over the thickest part of the spill, to calculate a litres/hectare application rate from vessels and aircraft. In practice, this can be difficult to achieve as it is not possible to accurately assess the thickness of the floating oil.

Table 2-3: Surface hydrocarbon thresholds for response planning

Surface hydrocarbon concentration (g/m ²)	Description	Bonn Agreement Oil Appearance Code (BAOAC)	Mass per area (g/m ²)
>10	Predicted minimum threshold for commencing operational monitoring ¹	Code 3 – Dull metallic colours	5 to 50
>50	Predicted minimum floating oil threshold for containment and recovery and surface dispersant application ²	Code 4 – Discontinuous true oil colour	50 to 200
>100	Predicted optimum floating oil threshold for containment and recovery and surface dispersant application	Code 5 – Continuous true oil colour	>200
>100	Predicted minimum shoreline accumulation threshold for shoreline assessment operations	Stain	>100
>250	Predicted minimum threshold for commencing shoreline clean-up operations	Level 3 – Thin Coating	200 to 1000

Some degree of localised over-dosage and under-dosage is inevitable in dispersant response. An average oil layer thickness of 0.1 mm is often assumed, although the actual thickness can vary over a wide range (from less than 0.0001 mm to more than 1 mm) over short distances (International Petroleum Industry Environment Conservation Association [IPIECA], 2015).

Guidance from Australian Maritime Safety Authority (AMSA) (AMSA, 2020) indicates that spreading of spills of Group II or III products will rapidly decrease slick thickness over the first 24 hours of a spill resulting in the potential requirement of up to a ten-fold increase in capability on day 2 to achieve the same level of performance.

Further guidance from the European Maritime Safety Authority (EMSA) states that spraying the ‘metallic’ looking area of an oil slick (Bonn Agreement Oil Appearance Code (BAOAC) 3, approximately 5 to 50 µm) with dispersant from spraying gear designed to treat an oil layer 0.1 mm (100 µm) thick, will inevitably cause dispersant over-treatment by a factor of 2 to 20 times (EMSA, 2012).

Therefore, dispersant application should be concentrated on the thickest areas of an oil slick and Woodside intends on applying surface dispersants to only BAOAC 4 and 5. Spraying areas of oil designated as BAOAC Code 4 (Discontinuous true oil colour) with dispersant will, on average, deliver approximately the recommended treatment rate of dispersant.

Spraying areas of oil designated as BAOAC Code 5 with dispersant (Continuous true oil colour and more than 0.2 mm thick) will, on average, deliver approximately half the recommended treatment rate of dispersant. Repeated application of these areas of thicker oil, or increased dosage ratios, will be required to achieve the recommended treatment rate of dispersant (EMSA, 2012).

¹ Operational monitoring will be undertaken from the outset of a spill as to whether this threshold has been reached. Monitoring is needed throughout the response to assess the nature of the spill, track its location and inform the need for any additional monitoring and/or response techniques. It also informs when the spill has entered State Waters and control of the incident passes to a regulatory or other jurisdictional authority.

² At 50 g/m², containment and recovery and surface dispersant application operations are not expected to be particularly effective. This threshold represents a conservative approach to planning response capability and containing the spread of surface oil.

The volatile nature of MDO (CS-02) is not appropriate for surface dispersant application.

Guidance from the National Oceanic and Atmospheric Administration (NOAA) in the United States is found in the document: Characteristics of Response Techniques: A Guide for Spill Response Planning in Marine Environments 2013 (NOAA, 2013). This guide outlines advice for response planning across all common techniques, including surface dispersant spraying and containment and recovery. It states that oil thickness can vary by orders of magnitude within distinct areas of a slick, thus the actual slick thickness and oil distribution of target areas are crucial for determining response method feasibility. Further to this, ITOPF also states that in terms of oil spill response, sheen can be disregarded as it represents a negligible quantity of oil, cannot be recovered or otherwise dealt with to a significant degree by existing response techniques, and is likely to dissipate readily and naturally (ITOPF, 2014a, 2014b).

Figure 2-4 from AMSA’s Identification of Oil on Water – Aerial Observation and Identification Guide (AMSA, 2014) shows expected percent coverage of surface hydrocarbons as a proportion of total surface area. Windrows, heavy oil patches and tar balls, for example, must be considered, as they influence oil encounter rates, chemical dosages and ignition potential. Each method has different thickness thresholds for effective response.

From this information and other relevant sources (Allen and Dale, 1996; EMSA, 2012; Spence, 2018) the surface threshold of 50 g/m² was chosen as an average/equilibrium thickness (50 g/m² as an average is 50% coverage of 0.1 mm Bonn Agreement Code 4 – discontinuous true oil colour, or 25% coverage of 0.2 mm Bonn Agreement Code 5 – continuous true oil colour, which would represent small patches of thick oil or windrows).

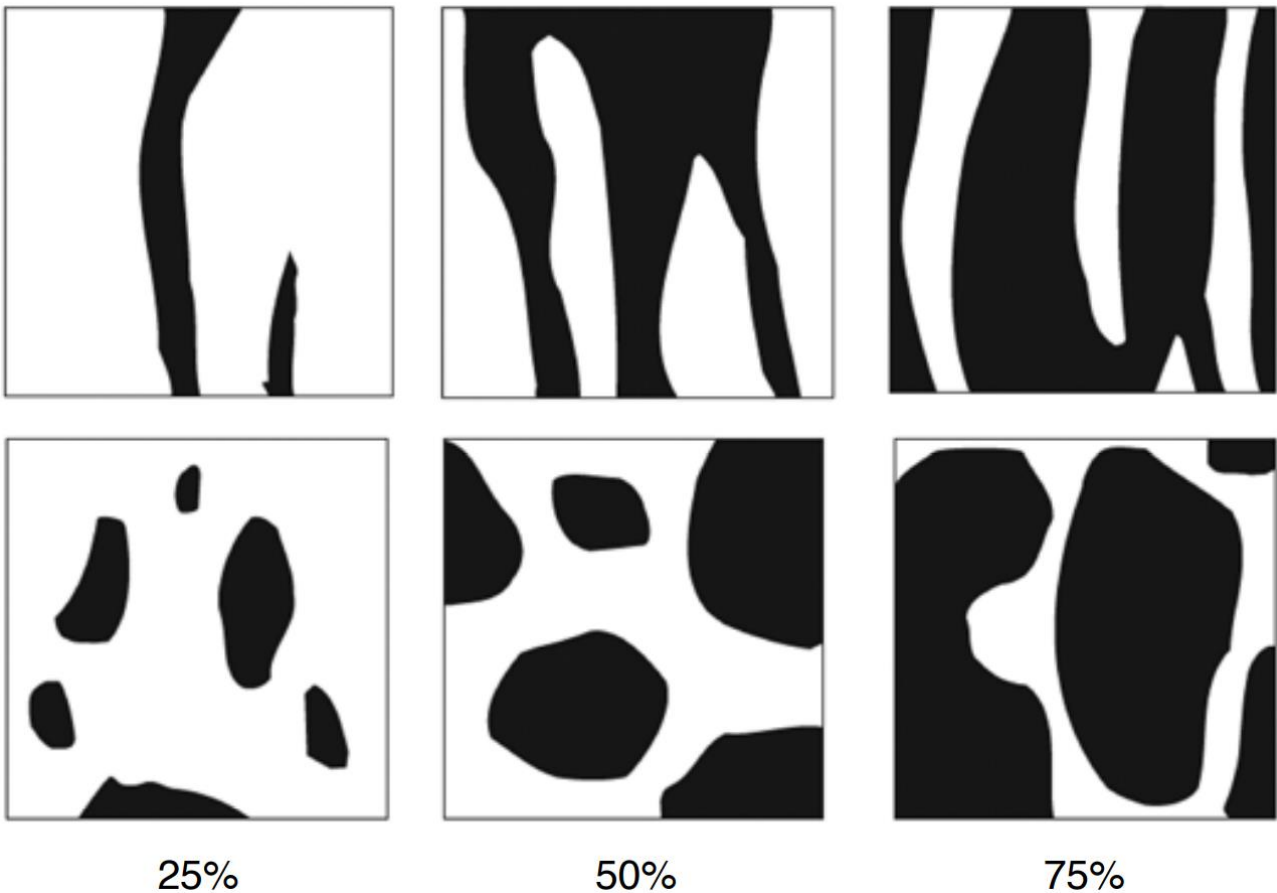


Figure 2-4: Proportion of total area coverage (AMSA, 2014)

Figure 2-5 illustrates the general relationships between on-water response techniques and slick thickness. Windrows, heavy oil patches and tar balls, for example, must be considered, as they

influence oil encounter rates, chemical dosages and ignition potential. Each method has different thickness thresholds for effective response.

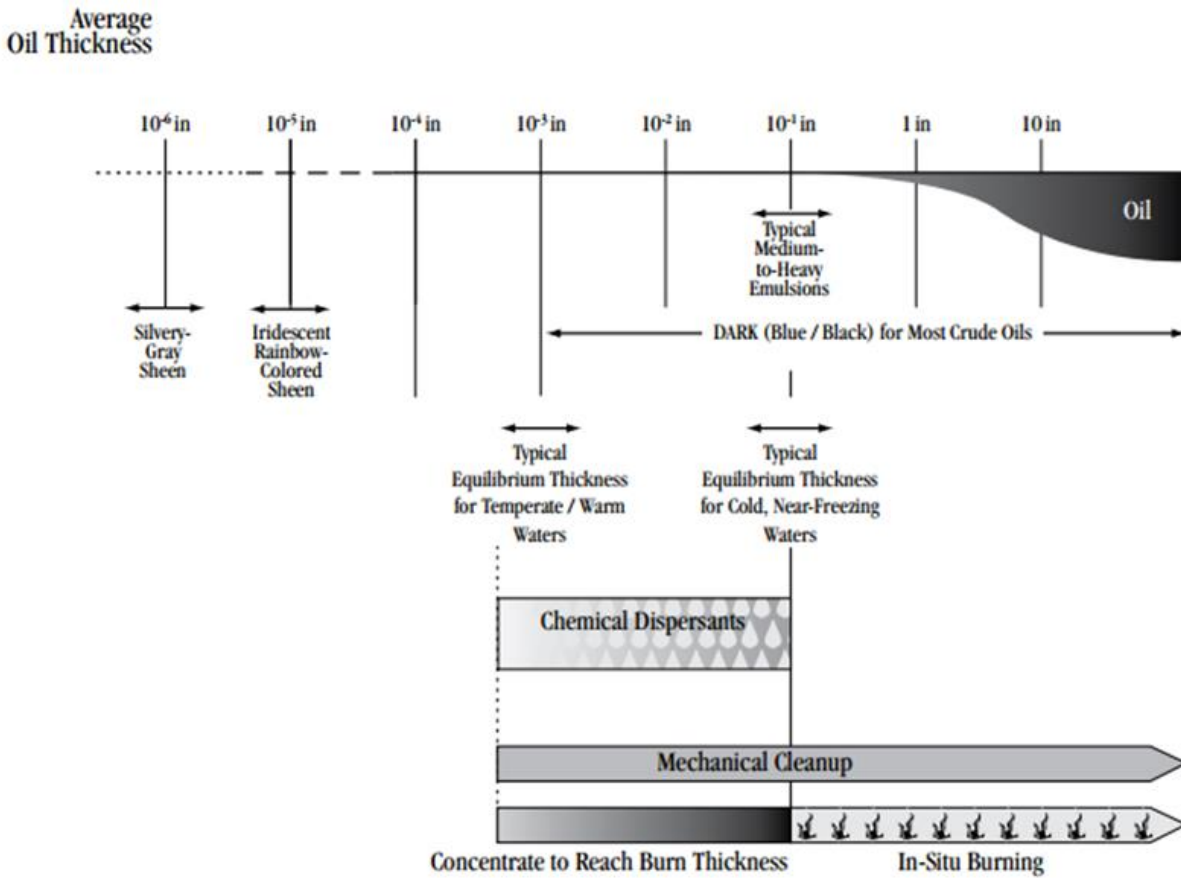


Figure 2-5: Oil thickness versus potential response options (from Allen and Dale, 1996)

Wind and waves influence the feasibility of mechanical clean-up operations, dropping the effectiveness significantly because of entrainment and/or splash-over as short period waves develop beyond two to three feet (0.6 to 0.9 m) in height. Waves and wind can also be limiting factors for the safe operation of vessels and aircraft.

2.3.2.2 Surface hydrocarbon viscosity

Table 2-4: Surface hydrocarbon viscosity thresholds

Surface viscosity (cSt)	Description	European Maritime Safety Authority	Viscosity at sea temperature (cSt)
5,000*	Predicted optimum viscosity for surface dispersant operations	Generally possible to disperse	500 to 5000
10,000*	Predicted maximum viscosity for effective surface dispersant operations	Sometimes possible to disperse	5,000 to 10,000

* Measured at sea surface temperature

Further to the required thickness for surface dispersant application and containment and recovery to be deployed effectively as outlined above, changes to viscosity will also limit the treatment of offshore response techniques. As outlined in the EMSA Manual on the Applicability of Oil Spill Dispersants (EMSA, 2012), guidance around changes to viscosity and likely effectiveness of surface dispersant application is provided.

This includes the following statements: “It has been known for many years that it is more difficult to disperse a high viscosity oil than a low or medium viscosity oil. Laboratory testing had shown that the effectiveness of dispersants is related to oil viscosity, being highest for modern “Concentrate, UK Type 2/3” dispersants at an oil viscosity of about 1000 or 2000 mPa.s (1000 to 2000 cSt) and then declining to a low level with an oil viscosity of 10,000 mPa.s (10,000 cSt). It was considered that some generally applicable viscosity limit, such as 2000 or 5000 mPa.s (2000 to 5000 cSt), could be applied to all oils.”

However, modern oil spill dispersants are generally effective up to an oil viscosity of 5000 mPa.s (5000 cSt) or more, and their performance gradually decreases with increasing viscosity; oils with a viscosity of more than 10,000 cSt are, in most cases, no longer dispersible. Guidance from CEDRE (EMSA, 2012) also indicates that products with a range of 500 to 5000 cSt at sea temperature are generally possible to disperse, while 5000 to 10,000 cSt at sea temperature above pour point are sometimes possible to disperse, with products beyond 10,000 cSt at sea temperature below pour point are generally impossible to disperse.

To support decision making and response planning, a threshold of 10,000 cSt at sea temperature was chosen as a conservative estimate of maximum viscosity for surface dispersant spraying operations.

A condensate or MDO spill scenario will not reach the 10,000 cSt threshold for the duration of the spill.

2.3.3 Spill modelling results

Details of the scenario and modelling inputs are included along with deterministic results in Table 2-5.

The selected deterministic runs used to represent the WCCS are:

- Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a concentration of 10 g/m²)
- Minimum time to shoreline contact (above 100 g/m²)
- Peak mass of oil ashore (tonnes) at any individual shoreline receptor (at concentrations exceeding 100 g/m²)
- Peak mass shoreline accumulation (above 100 g/m²) all shorelines
- Minimum time to entrained/dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a threshold of 100 ppb).

Table 2-5: Worst case credible scenario modelling results

Scenario description									
CS-02									
WCCS – total volume released Refer to Section 2.1.1 for detailed hydrocarbon characteristics	Loss of MDO containment resulting from a vessel collision at the nearest point of the operational area to the Victorian coast Hydrocarbon release – 330 m ³ MDO over 6 hours Surface release								
WCCS – residual volume remaining post-weathering	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #cccccc;">Wind speed</th> <th style="background-color: #cccccc;">Residue</th> </tr> </thead> <tbody> <tr> <td>Low wind</td> <td>40%, 132 m³</td> </tr> <tr> <td>Moderate wind</td> <td>1%, 3.3 m³ (within 72 hours)</td> </tr> <tr> <td>High wind</td> <td>0%, 0 m³ (within 12 hours)</td> </tr> </tbody> </table>	Wind speed	Residue	Low wind	40%, 132 m ³	Moderate wind	1%, 3.3 m ³ (within 72 hours)	High wind	0%, 0 m ³ (within 12 hours)
Wind speed	Residue								
Low wind	40%, 132 m ³								
Moderate wind	1%, 3.3 m ³ (within 72 hours)								
High wind	0%, 0 m ³ (within 12 hours)								
Location	38° 42' 6.89" S 142° 57' 17.28" E								
Modelling results									
Surface area of hydrocarbons (>50 g/m²)	<i>Surface area not available.</i> Contact at 50 g/m ² predicted on day 0.1 day at Otway								
Surface area of hydrocarbons (>50 g/m² and <10,000 cSt)	<i>Surface area not available.</i>								
Minimum time to floating hydrocarbon contact with the offshore edge(s) of any shoreline receptor polygon (at a concentration of 10 g/m²)	0.1 day at Otway								
Minimum time to shoreline contact (above 100 g/m²)	0.2 days at Warrnambool Plain (186.7 tonnes)								
Peak mass of oil ashore (tonnes) at any individual shoreline receptor (at concentrations exceeding 100 g/m²)	186.7 tonnes at Warrnambool Plain (0.2 days)								
Peak mass shoreline accumulation (above 100 g/m²) all shorelines	186.7 tonnes at Warrnambool Plain (0.2 days)								
Minimum time to entrained/dissolved hydrocarbon contact with the offshore edges of any receptor polygon (at a threshold of 100 ppb)	0.1 days at Otway								
The full list of response protection areas (RPAs) predicted from modelling is available in Table 3-1									

Analysis of the modelling results, results in the following predictions:

CS-02 – MDO

- Whilst modelling predicts that floating oil will reach the minimum feasible thresholds (>50 g/m²) at which to commence offshore response techniques (containment and recovery and surface dispersant application), these techniques are not suitable for MDO spills:
 - surface dispersant is not effective when applied on thin surface films such as marine diesel as the dispersant droplets tend to pass through the surface films without binding to the hydrocarbon resulting in the unnecessary addition of chemicals to the marine environment

- corralling a volatile hydrocarbon such as MDO is deemed unsafe for response personnel. MDO is also prone to rapid spreading and evaporation and thus is deemed unsuitable for effective containment and recovery operations.

3 IDENTIFY RESPONSE PROTECTION AREAS (RPAs)

In a response, operational monitoring programs – including trajectory modelling and vessel/aerial observations – would be used to predict RPAs that may be impacted. For the purposes of planning and appropriately scaling a response, modelling has been used to identify RPAs as outlined below in Figure 3-1.

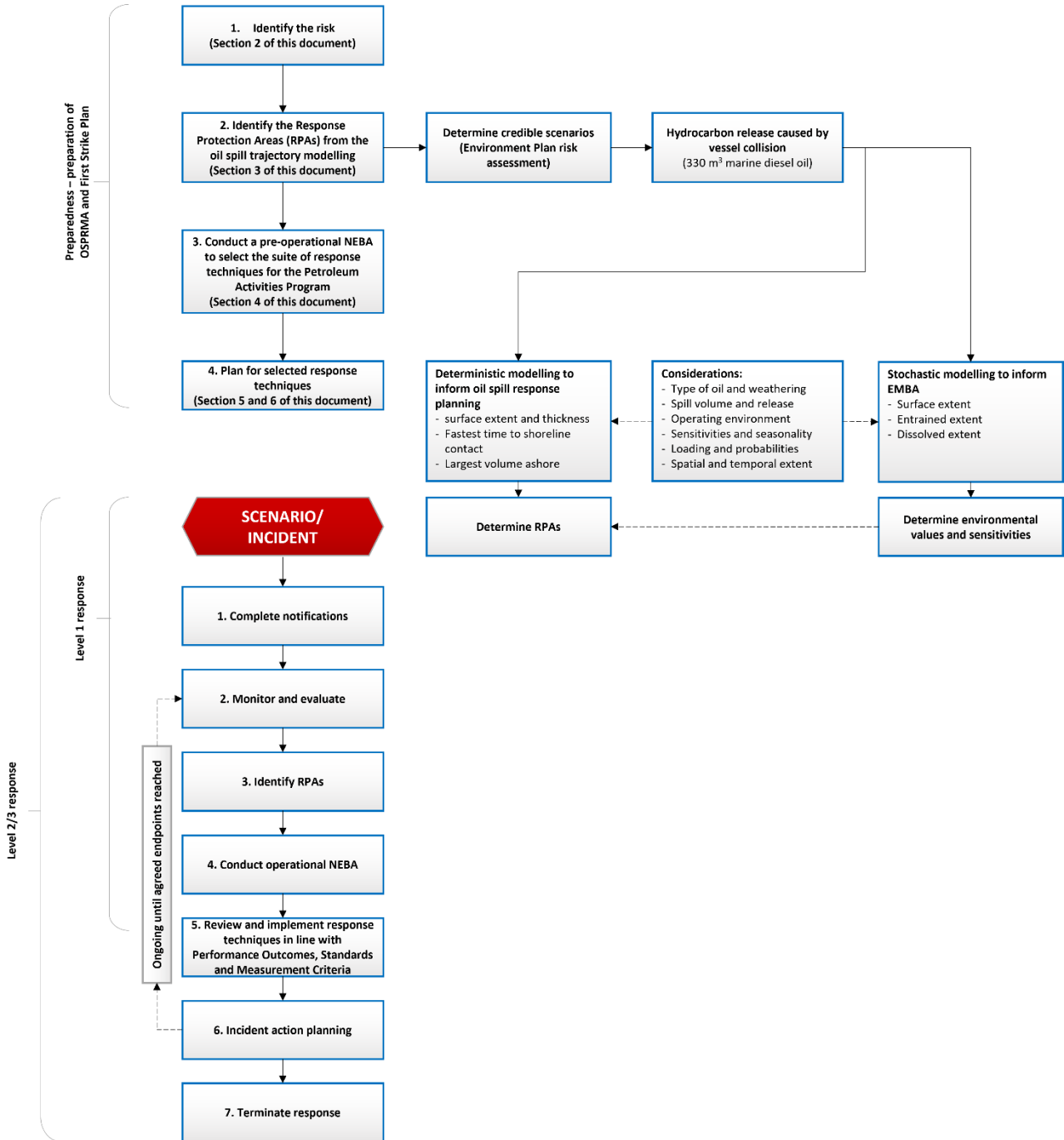


Figure 3-1: Identify Response Protection Areas (RPAs) flowchart

3.1 Identified sensitive receptor locations

Section 8 of the EP includes the list of sensitive receptor locations that have been identified by stochastic modelling as meeting the requirements outlined below:

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- receptors with the potential to incur surface, entrained or shoreline accumulation contact above environmental impact thresholds
- receptors within the EMBA which meet any of the following:
 - priority protection criteria/ categories
 - International Union of Conservation of Nature IUCN marine protected area categories
 - high conservation value habitat and species
 - important socio-economic/ heritage value.

3.2 Identify Response Protection Areas (RPAs)

RPAs have been selected based on their environmental ecological, social, economic, cultural and heritage values and sensitivities and the ability to conduct a response based on the minimum response thresholds (Section 2.3.1). The figures outlined in Table 3-1 are the combined results of the individual worst-case runs and do not indicate a single worst case credible scenario (where the timings and volumes are all expected from one release).

From the identified sensitive receptors described in Section 8 of the EP, only those which a shoreline response could feasibly be conducted (accumulation $>100 \text{ g/m}^2$ for shoreline assessment and/or contact with surface slicks $>10 \text{ g/m}^2$ for operational monitoring) have been selected for response planning purposes. While not discounting other sensitivities, these RPAs have been used as the basis for demonstrating the capability to respond to the nature and scale of a spill from the WCCS and prioritising response techniques.

Table 3-1 outlines locations which were identified from the modelling runs for the WCCS but does not constitute the full list of Priority Protection Areas (PPAs) potentially contacted from stochastic modelling (as per EMBA definition) (see Section 8 of the EP). Other RPA outliers were identified from the modelling and have been included in the assessment of capability in Sections 5 and 6.

Additional sensitive receptors are presented the existing environment description (Section 4 of the EP) and impact assessment section (Section 8 of the EP) for each respective spill scenario. The pre-operational NEBA (Section 4) considers the results from the stochastic modelling to consider all feasible response techniques in the planning phase, therefore additional receptors are also included in the pre-operational NEBA.

The RPAs identified in Table 3-1 are used to plan for the nature and scale of a shoreline response.

Table 3-1: Response Protection Areas (RPAs) from stochastic modelling (CS-02)

Response protection area	Conservation status	IUCN protection category	CS-02	
			Minimum time to shoreline contact (above 100 g/m ²) in days ⁽³⁾	Maximum shoreline accumulation (above 100 g/m ²) in m ³ ⁽⁴⁾
Warrnambool Plain	State Marine Park	IUCN II – National Park IUCN III – Natural Monument or Feature	0.2 days (186.7 tonnes)	186.7 (0.2 days)
Otway Plain	State Marine Park	IUCN II – National Park IUCN III – Natural Monument or Feature	1 day (26.5 tonnes)	26.5 tonnes (1 days)
Otway Ranges	Ramsar Site and State Marine Park	IUCN II – National Park IUCN III – Natural Monument or Feature	0.8 days (7.6 tonnes)	7.6 tonnes (0.8 days)

³ This volume and time represent the first time to contact on defined shoreline polygon and the maximum volume ashore for that 24-hour period.

⁴ This volume and time represent the maximum volume ashore on defined shoreline polygon for any 24-hour time period

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4 NET ENVIRONMENTAL BENEFIT ANALYSIS (NEBA)

A Net Environmental Benefit Analysis (NEBA) is a structured process to consider which response techniques are likely to provide the greatest net environmental benefit.

The NEBA process typically involves four key steps outlined in Figure 4-1: evaluate data, predict outcomes, balance trade-offs, and select response options. These steps are followed in the planning/preparedness process and would also be followed in a response.

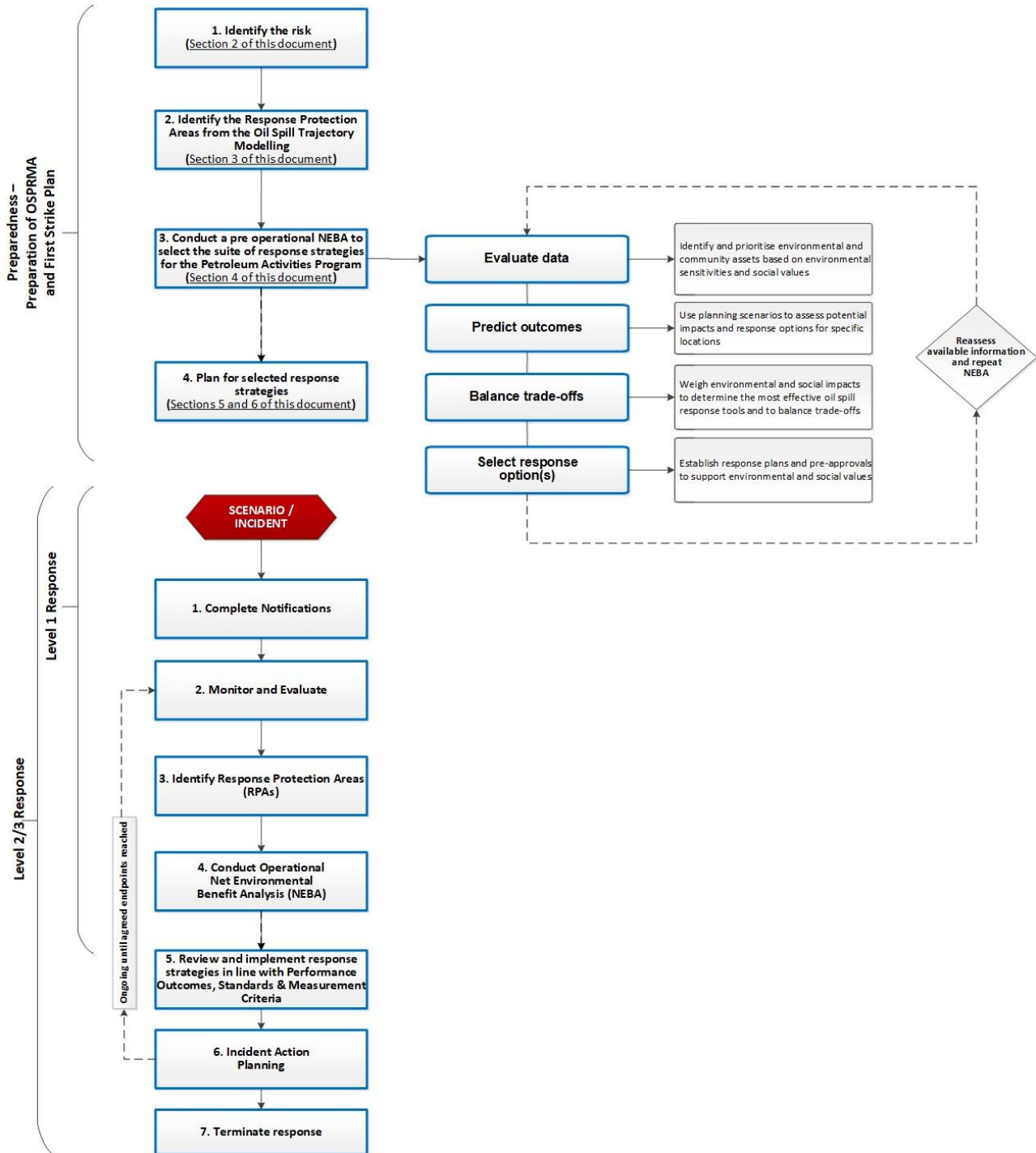


Figure 4-1: Net Environmental Benefit Analysis (NEBA) flowchart

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4.1 Pre-operational / Strategic NEBA

The pre-operational NEBA identifies positive and negative impacts to sensitive receptors from implementing the response techniques. Feasibility is considered by assessing the receptors potentially impacted above response thresholds and the surface concentrations (Table 2-3) from the modelling.

Completing a pre-operational NEBA is a key response planning control that reduces the environmental risks and impacts of implementing the selected response techniques. Comprehensive details of the pre-operational NEBA for this PAP are contained in **ANNEX A: Net Environmental Benefit Analysis detailed outcomes**.

4.2 Stage 1: Evaluate data

Woodside identifies and prioritises environmental and community assets based on environmental sensitivities and social values, informed using trajectory modelling. Interpretation of stochastic oil spill modelling determines the EMBA for the release, which defines the spatial area that may be potentially impacted by the PAP activities.

4.2.1 Define the scenario(s)

Woodside uses scenarios identified from the risk assessment in the EP to assess potential impacts and response options for specific locations. The WCCS is then selected for deterministic modelling and is used for this pre-operational NEBA. Outlier locations with potential environmental impacts, selected from the stochastic modelling may also be included for assessment. Response thresholds and deterministic modelling are then used to assess the feasibility/effectiveness and scale of the response. Modelling results are available in **Table 3-1**.

4.3 Stage 2: Predict outcomes

Woodside uses planning scenarios to assess potential impacts and response options for specific locations. Locations with potential environmental impacts, selected from the stochastic modelling are included for assessment. Response thresholds and deterministic modelling are then used to assess the feasibility/ effectiveness of a response.

4.4 Stage 3: Balance trade-offs

Woodside considers environmental impacts and response feasibility/ effectiveness to determine the most effective oil spill response tools and balance trade-offs, using an automated NEBA tool. The tool considers potential benefits and impacts associated with a response at sensitive receptors and then considers the feasibility/ effectiveness of the response to select the response techniques carried forward to the ALARP assessment. The NEBA can be found in **ANNEX A: Net Environmental Benefit Analysis detailed outcomes**.

4.5 Stage 4: Select best response options

To select the response technique, all the other stages in the NEBA process are considered and used to establish response plans and any pre-approvals to support protection of identified environmental and social values.

The response techniques implemented may vary according to a particular spill. The hydrocarbon type released and the sensitivities of the receptors (both ecological and socio-economic) may influence the response. The pre-operational NEBA broadly evaluates each response technique and supports decisions on whether they are feasible and of net environmental benefit. Response techniques that are not feasible or beneficial are rejected at this stage and not progressed to planning.

Further risks and impacts from implementing these selected response options are outlined in Section 7.

4.5.1 Determining potential response options

The available response techniques based on current technology can be summarised under the following headings:

- Operational monitoring
- Source control via vessel SOPEP
- Surface dispersant application:
 - aerial dispersant application
 - vessel dispersant application
- Mechanical dispersion
- In-situ burning
- Containment and recovery
- Shoreline protection and deflection:
 - protection
 - deflection
- Shoreline clean-up:
 - Phase 1 – mechanical clean-up
 - Phase 2 – manual clean-up
 - Phase 3 – final polishing
- Oiled wildlife response (including hazing)

Support functions may include:

- Waste management
- Post spill/ scientific monitoring

Table 4-1 includes scenario-specific assessments of feasible response options and justification for the exclusion of inappropriate options. These options are evaluated against the scenario parameters including oil type, volume, characteristics, prevailing weather conditions, logistical support, and resource availability to determine deployment feasibility.

A shortlist of the feasible response options is then carried forward for the ALARP assessment. This assessment will typically result in a range of available options, that are deployed at different areas (at-source, offshore, nearshore and onshore) and different times during the response. The NEBA process assists in prioritising which options to use where and when, and timings throughout the response.

Table 4-1: Response technique evaluation – vessel collision at nearest point of the operational area to the Victorian coast (CS-02)

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
Hydrocarbon: MDO				
Operational Monitoring	<p>Will be effective in tracking the location of the spill, predicting potential impacts and triggering further monitoring and response techniques as required. Monitoring techniques include:</p> <ul style="list-style-type: none"> OM01 Predictive modelling of hydrocarbons – used throughout spill. 'Ground-truthed' using the outputs of all other monitoring techniques. OM02 Surveillance and reconnaissance to detect hydrocarbons and resources at risk – from outset of spill. OM03 Monitoring of hydrocarbon presence, properties, behaviour and weathering in water – from outset of spill. OM04 Pre-emptive assessment of sensitive receptors at risk – triggered once OM01, OM02 and OM03 inform likely RPAs at risk. <p>OM05 Shoreline assessment – once OM02, OM03 and OM04 inform if any RPAs have been impacted.</p>	<p>Monitoring of a Minerva-4 Condensate spill is a feasible response technique and an essential element of all spill response incidents. Outputs will be used to guide decision making on the use of other monitoring/response techniques and providing required information to regulatory agencies.</p>	Yes	<p>Monitoring the spill will make it possible to:</p> <ul style="list-style-type: none"> validate trajectory and weathering models determine the behaviour of the oil in water determine the location and state of the slick provide forecasts of spill trajectory determine appropriate response techniques determine effectiveness of response techniques confirm impact pathways to receptors provide regulatory agencies with required information.
Source control via vessel SOPEP	<p>Controlling the spill of diesel at source would be the most effective way to limit the quantity of hydrocarbon entering the marine environment.</p>	<p>A spill of diesel from a vessel collision will be instantaneous and source control will be limited to what the vessel or facility can safely achieve whilst responding to the incident.</p>	Yes	<p>Ability to stop the spill at source will be dependent upon the specific spill circumstances and whether or not it is safe for response personnel to access/isolate the source of the spill.</p>
Surface dispersant application	<p>Application of surface dispersant would likely reduce the volumes of hydrocarbons contacting sensitive surface receptors.</p> <p>Dispersant can also enhance biodegradation and may reduce VOCs in some circumstances therefore reducing potential health and safety risk to responders.</p> <p>Dispersant can increase dispersed/entrained hydrocarbons which can potentially have higher toxicity to biota in shallow water than naturally dispersed hydrocarbons.</p> <p>Subsurface oil plume likely to increase in size resulting in greater spatial extent of entrained oil.</p> <p>Entrained oil could potentially impact on sensitive shallow-water receptors e.g. corals, which otherwise may have been unaffected.</p>	<p>Whilst modelling predicts that floating oil will reach the minimum feasible threshold at which to commence surface dispersant application (>50 g/m²) within Otway, this technique is not suitable for MDO spills as this hydrocarbon is prone to rapid spreading and evaporation. Dispersants are not considered effective when applied on thin surface films such as MDO as the dispersant droplets tend to pass through the surface films without binding to the hydrocarbon resulting in the unnecessary addition of chemicals to the marine environment.</p> <p>The volatile nature of MDO is also likely to lead to unsafe conditions in the vicinity of fresh hydrocarbon thus this response technique is deemed inappropriate.</p>	No	<p>The application of dispersant to marine diesel is unnecessary as the diesel will rapidly evaporate and would thus unnecessarily introduce additional chemical substances to the marine environment. The additional entrainment would also increase exposure of subsea species and habitats to hydrocarbons.</p>
Mechanical dispersion	<p>Mechanical dispersion involves the use of a vessel's prop wash and/or fire hose to target surface hydrocarbons to achieve dispersion into the water column. However, this technique is of limited benefit in an open ocean environment where wind and wave action are likely to deliver similar advantages.</p>	<p>Although the technique is feasible, highly volatile hydrocarbons are likely to weather, spread and evaporate quickly.</p> <p>The volatile nature of the oil likely to lead to unsafe conditions in the vicinity of fresh hydrocarbon.</p> <p>Additionally, any vessel used for mechanical dispersion activities would be contaminated by the hydrocarbon and could potentially cause secondary contamination of unimpacted areas when exiting the spill area.</p>	No	<p>Given the limited benefit of mechanical dispersion over natural wind and wave action, secondary contamination and waste issues, and the associated safety risk of implementing the response for this activity, this strategy is deemed unsuitable.</p>

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
		The decontamination of a vessel used for mechanical dispersion activities would result in additional quantities of oily waste requiring appropriate handling and treatment.		
In-situ burning	In-situ burning is only effective where minimum slick thickness can be achieved.	Use of in-situ burning as a response technique for marine diesel is unfeasible as the minimum slick thickness cannot be attained due to rapid spreading. In addition, there is a limited window of opportunity in which this technique can be applied (prior to evaporation of the volatiles) which is unlikely to be achieved. Furthermore, entering a volatile environment to undertake this technique would be unsafe for response personnel and its used would unnecessarily cause an increase the release of atmospheric pollutants.	No	Diesel characteristics are not appropriate for the use of in-situ burning and would unnecessarily cause an increase the release of atmospheric pollutants.
Containment and recovery	Containment and recovery has an effective recovery rate of 5-10% when a hydrocarbon encounter rate of 25-50% is achieved at BAOAC 4 and 5 with a 50-100% coverage of 100 g/m ² to 200 g/m ² .	Whilst modelling predicts that floating oil will reach the minimum feasible threshold at which to commence containment and recovery (50 g/m ²) within Otway, this technique is not suitable for MDO spills as it is prone to rapid spreading and evaporation and is therefore deemed unsuitable for effective containment and recovery operations. The volatile nature of marine diesel is also likely to lead to unsafe conditions in the vicinity of the hydrocarbon thus this response technique is deemed inappropriate.	No	Containment and recovery would be an inappropriate response technique for a spill of marine diesel. Corraling a volatile hydrocarbon such as MDO is deemed unsafe for response personnel thus this response strategy is not considered feasible. In addition to the safety issues, most of the spilled diesel would have been subject to rapid evaporation prior to the commencement of containment and recovery operations.
Shoreline protection and deflection	Shoreline protection and deflection can be effective at preventing contamination of sensitive resources and can be used to corral oil into slicks thick enough to skim effectively.	For CS-02, stochastic modelling predicts first shoreline accumulation from floating surface hydrocarbon will occur on Day 0.2 (186.7 tonnes at Warrnambool Plain). Protection strategies can be used for targeted protection of sensitive resources. Real-time Operational Monitoring activities (OM01, OM02 and OM03) will be deployed to inform shorelines at risk of contact. Pre-emptive assessments of sensitive receptors at risk (OM04) and existing TRPs will be utilised to guide shoreline protection and deflection operations, in agreement with regulatory and control agencies (for Level 2/3 spills). Access to sensitive areas may cause more negative impact than benefit.	Yes	RPAs predicted to be contacted are based on modelling outputs and thus may differ under the prevailing conditions of a real event. If RPAs are deemed to be at risk, based on real-time operational monitoring during a spill event, shoreline protection and deflection techniques will be employed to minimise hydrocarbon accumulations providing net environmental benefit.
Shoreline clean-up	Shoreline clean-up is an effective means of hydrocarbon removal from contaminated shorelines where coverage is at an optimum level of 250 g/m ² .	For CS-02, stochastic modelling predicts first shoreline accumulation from floating surface hydrocarbon will occur on Day 0.2 (186.7 tonnes at Warrnambool Plain). Can reduce or prevent impact on sensitive receptors in most cases. Real-time Operational Monitoring activities (OM01, OM02 and OM03) will be deployed to inform shorelines at risk of contact. Pre-emptive assessments of sensitive receptors at risk (OM04), shoreline assessment (OM05) and existing TRPs will be utilised to guide shoreline clean-up operations, in agreement with regulatory and control agencies (for Level 2/3 spills). Verify through shoreline assessment, that sensitive sites will benefit from clean-up activities as the response itself may cause more negative impact than benefit through disturbance of habitats and species.	Yes	Response Protection Areas predicted to be contacted are based on modelling outputs and thus may differ under the prevailing conditions of a real event. If RPAs are at risk, based on real-time operational monitoring during a spill event, shoreline clean-up techniques will be deployed to expedite clean-up of the impacted sites. Removal of hydrocarbons will help shorten the recovery window unless shoreline type is of a sensitive nature. This technique can help prevent remobilisation of hydrocarbon and impact on shorelines.
Oiled wildlife response	Oiled wildlife response is an effective response technique for reducing the overall impact of a spill on wildlife. This is mostly achieved through hazing to prevent additional wildlife from being contaminated and through rehabilitation of those already subject to contamination.	If wildlife is at risk of contamination, oiled wildlife response will be undertaken in accordance with the Oiled Wildlife Response Operational Plan as and where required. In addition, any rehabilitation could only be undertaken by trained specialists.	Yes	This technique may prevent impact to and/or treat oiled wildlife providing net environmental benefit.

Response Technique	Effectiveness	Feasibility	Decision	Rationale for the decision
		Due to the likely volatile atmospheric conditions surrounding an MDO spill, response options may be limited to hazing to keep response personnel safe.		

5 HYDROCARBON SPILL ALARP PROCESS

Woodside's hydrocarbon spill ALARP process is aligned with guidance provided by NOPSEMA in *ALARP Guidance Note N-04300-GN0166 (2022)* and *Oil Spill Risk Management Guidance Note N-04750-GN1488 (2021)* and is set out in the 'Woodside Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA) Guidelines'.

From the identified response planning need and pre-operational NEBA/SIMA, Woodside conducts a structured, semi-quantitative hydrocarbon spill process which has the following steps:

1. considers the Response Planning Need identified in terms of surface area (km²) and available surface hydrocarbon volumes (tonnes/ m³) against existing Woodside capability.
2. considers alternative, additional, and improved options for each response technique/control measure by providing an initial and, if required, detailed evaluation of:
 - predicted cost associated with adopting the control measure
 - predicted change/environmental benefit
 - predicted effectiveness/feasibility of the control measure.
3. evaluates the risks and impacts of implementing the proposed response techniques, and any further control measures with associated environmental performance to manage these additional risks and impacts.

Woodside considers the risks and impacts from a hydrocarbon spill to have been reduced to ALARP when:

1. a structured process for identifying and considering alternative, additional, and improved options has been completed for each selected response technique.
2. the analysis of alternate, additional, and improved control measures meets one of the following criteria:
 - all identified, reasonably practicable control measures have been adopted; or
 - no identified reasonably practicable additional, alternative and/or improved control measures would provide further overall increased proportionate environmental benefit; or
 - no reasonably practical additional, alternative, and/or improved control measures have been identified.
3. where an alternative, additional and/or improved control measure is adopted, a measurable level of environmental performance has been assigned.
4. higher order impacts/ risks have received more comprehensive alternative, additional, and improved control measure evaluations and do not just compare the cost of the adopted control measures to the costs of an extreme or unreasonable control measure.
5. cumulative effects have been analysed when considered in combination across the whole activity.

The response technique selection is based on the risk assessment conducted in the EP. The risk assessment identifies the type of oil, volume of release, duration of release, predicted fate, weathering and the EMBA (along with other requirements such as time to impact and predicted volumes ashore). Modelling is then used to inform the NEBA and the prioritisation of suitable response options. The scale of the response techniques selected in the pre-operational NEBA is informed through the assessment of results from deterministic modelling.

For the ALARP assessment, the following terms and definitions have been used:

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- Response techniques are considered the control measures that reduce consequences from hydrocarbon spill events. The terms 'response technique' and 'control measure' are used interchangeably.
- Cost is defined as the time, effort and/or trouble taken in financial, safety, design/storage/installation, capital/lease, and/or operations/maintenance terms to adopt a control measure.
- Where the predicted change to environmental impact is compared against standard environmental values and sensitivities impacts using positive or negative criteria from the NEBA Impact Ranking Classification Guidance in Annex A.

5.1 Operational Monitoring

Operational Monitoring includes the gathering and evaluation of data to inform the oil spill response planning and operations. It includes fate and trajectory modelling, spill tracking, weather updates and field observations. This response option is deployed in some capacity for every event.

The table below provides the operations monitoring plans that support the successful execution of this response technique.

Table 5-1: Description of supporting operational monitoring plans

ID	Title
OM01	Predictive modelling of hydrocarbons to assess resources at risk
OM02	Surveillance and reconnaissance to detect hydrocarbons and resources at risk
OM03	Monitoring of hydrocarbon presence, properties, behaviour and weathering in water
OM04	Pre-emptive assessment of sensitive receptors at risk
OM05	Shoreline assessment

Woodside maintains an *Operational Monitoring Operational Plan*. If shoreline contact is predicted, Response Protection Areas (RPAs) will be identified and assessed before contact. If shorelines are contacted, a shoreline assessment survey will be completed to guide effective shoreline clean-up operations. This plan includes the process for the CIMT to mobilise resources depending on the nature and scale of the spill.

The proximity of Avalon and Ballarat airports to the spill event location means that multiple logistical options are available to monitor the spill in relatively short timeframes. In the unlikely event of an extended spill with potential to impact receptors further afield, monitoring activities may also be mobilised from other airfields in Victoria.

5.1.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which a response need can be based:

- Floating oil at 1 g/m², 10 g/m² or 50 g/m² are predicted up to 75 km, 25 km and 10 km from the spill location respectively.
- The shortest timeframe that shoreline contact from floating oil is predicted is 0.2 days.
- The time to contact for oil at concentrations of entrained hydrocarbons greater than 100 ppb at shoreline receptors is 0.1 days at Otway.
- Arrangements for support organisations who provide specialist services or resources should be tested regularly.
- Plans, procedures and support documents need to be in place for Operational and Support functions. These should be reviewed and updated regularly.
- The duration of the spill may extend up to 81 days with response operations extending to month 3 based on the predicted time to complete shoreline clean-up operations.

5.1.2 Environmental performance based on need

Table 5-2: Environmental Performance – Operational Monitoring

Environmental Performance Outcome		To gather information from multiple sources to establish an accurate common operating picture as soon as possible and predict the fate and behaviour of the spill to validate planning assumptions and adjust response plans as appropriate to the scenario.		
Control measure		Performance Standard		Measurement Criteria (Section 5.9)
1	Oil spill trajectory modelling	1.1	Initial modelling available within 6 hours using the Rapid Assessment Tool	1, 3B, 3C, 4
		1.2	Detailed modelling available within 4 hours of APASA receiving information from Woodside	
		1.3	Detailed modelling service available for the duration of the incident upon contract activation	
2	Tracking buoy	2.1	Tracking buoy located on facility/ lead vessel and ready for deployment 24/7	1, 3A, 3C, 4
		2.2	Deploy tracking buoy from facility/ lead vessel within 2 hours as per the First Strike Plan.	1, 3A, 3B, 4
		2.3	Contract in place with service provider to allow data from tracking buoy to be received 24/7 and processed.	1, 3B, 3C, 4
		2.4	Data received to be uploaded into Woodside COP daily to improve the accuracy of other Operational Monitoring techniques.	1, 3B, 4
3	Satellite imagery	3.1	Contract in place with 3 rd party provider to enable access and analysis of satellite imagery. Imagery source/type requested on activation of service.	1, 3C, 4
		3.2	3 rd party provider will confirm availability of an initial acquisition within 2 hours	1, 3B, 3C, 4
		3.3	First image received with 24 hours of Woodside confirming to 3 rd party provider its acceptance of the proposed acquisition plan.	1
		3.4	3 rd party provider to submit report to Woodside per image. Report is to include a polygon of any possible or identified slick(s) with metadata.	1
		3.5	Data received to be uploaded into Woodside COP daily to improve accuracy of other Operational Monitoring techniques.	1, 3B, 4
		3.6	Satellite Imagery services available and employed during response	1, 3C, 4
4	Aerial surveillance	4.1	1 trained aerial observer available to be deployed by day 1 from resource pool.	1, 2, 3B, 3C, 4
		4.2	1 aircraft available for two sorties per day, available for the duration of the response from day 1	1, 3C, 4
		4.3	Observer to compile report during flight as per First Strike Plan. Observers report available to the CIMT within 2 hours of landing after each sortie.	1, 2, 3B, 4

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Environmental Performance Outcome		To gather information from multiple sources to establish an accurate common operating picture as soon as possible and predict the fate and behaviour of the spill to validate planning assumptions and adjust response plans as appropriate to the scenario.		
Control measure		Performance Standard		Measurement Criteria (Section 5.9)
		4.4	Unmanned Aerial Vehicles/Systems (UAV/UASs) to support SCAT, containment and recovery and surface dispersal and pre-emptive assessments as contingency if required.	1, 2
5	Hydrocarbon detections in water	5.1	Activate 3 rd party service provider as per First Strike Plan. Deploy resources within 3 days: <ul style="list-style-type: none"> • 3 specialists in water quality monitoring • 2 monitoring systems and ancillaries • 1 vessel for deploying the monitoring systems with a dedicated winch, A-frame or Hiab and ancillaries to deploy the equipment. 	1, 2, 3C, 3D, 4
		5.2	Water monitoring services available and employed during response	
		5.3	Preliminary results of water sample as per contractor's implementation plan within 7 days of receipt of samples at the accredited lab	
		5.4	Daily fluorometry reports as per service provider's implementation plan will be provided to CIMT to validate modelling and monitor presence/ absence of entrained hydrocarbons.	
6	Pre-emptive assessment of sensitive receptors	6.1	Within 24 hours, in liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), deployment of 2 specialists from resource pool in establishing the status of sensitive receptors.	1, 2, 3B, 3C, 4
		6.2	Daily reports provided to CIMT on the status of the receptors to prioritise Response Protection Areas (RPAs) and maximise effective utilisation of resources.	
7	Shoreline assessment	7.1	Within 24 hours, in liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), deployment of 2 specialists in SCAT from resource pool for each of the Response Protection Areas (RPAs) with predicted impacts	1, 2, 3B, 3C, 4
		7.2	SCAT reports provided to CIMT daily detailing the assessed areas to maximise effective utilisation of resources	
		7.3	Shoreline access routes with the least environmental impact identified will be selected by a specialist in SCAT operations	1

The control measures and capability of Woodside and its third-party service providers are shown to support Operational Monitoring activities up to and including the identified WCCS. This is demonstrated by the following:

- Woodside has a documented, structured and tested capability for Operational Monitoring operations including internal trajectory modelling capabilities, tracking buoys located offshore and contracted aerial observation platforms with access to trained observers.
- Woodside and its third-party service providers seek to maintain sufficient capability for the duration of the response.

- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in **Section 6.1**.

5.2 Source Control via Vessel SOPEP

Vessel source control will be conducted, where feasible and in accordance with MARPOL 73/78 Annex I, by the Vessel Master under the Shipboard Oil Pollution Emergency Plan (SOPEP) triggered by any loss of containment from the PAP vessels.

The SOPEP provides guidance to the Master and Officers on board the vessel with respect to the extra steps to be taken when an unexpected pollution incident has occurred or is likely to occur. The SOPEP contains all information and operational instructions required by IMO Resolution MEPC.54 (32) adopted on 6 March 1992, as amended by resolution MEPC.86 (44) adopted on 13 March 2000.

The SOPEP's purpose is to set in motion the necessary actions to stop or minimise oil discharge and mitigate its effects and outlines responsibilities, pollution reporting requirements, procedures and resources needed in the event of a hydrocarbon spill from vessel activities.

In the event of the WCCS vessel collision event, the vessel master may engage precautionary marine manoeuvres to avoid collision or commence pumping operations to transfer marine diesel and thus minimise the release.

5.2.1 Environmental performance based on need

Woodside has established control measures, environmental performance outcomes, performance standards and measurement criteria to be used for vessel-source oil spill response during the PAP, which are detailed in Section 8 of the EP. The vessel master's roles and responsibilities are described in EP Section 9.

Performance standards for each contracted PAP vessel are detailed in the vessel's specific SOPEP.

These standards confirm the availability of sufficient resources and adequate testing of those resources to implement the SOPEP in the event of a hydrocarbon spill.

5.3 Shoreline Protection and Deflection

The placement of containment, protection or deflection booms on and near a shoreline is a response technique to reduce the potential volume of hydrocarbons contacting or spreading along shorelines, which may reduce the scale of shoreline clean-up. Hydrocarbons contained by the booms would be collected where practicable.

Shorelines would be protected where accessible via vessel or shore. Where hydrocarbon contact has already occurred, there may still be value in deploying protection equipment to limit further accumulations and preventing remobilisation of stranded hydrocarbons.

Shoreline protection and deflection equipment would be mobilised to selected locations, where the following conditions were met:

- Sea-states and hydrocarbon characteristics are safe to deploy protection and deflection measures,
- Oil trajectory has been identified as heading towards identified RPAs.

5.3.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which the response need can be based:

- The shortest timeframe that shoreline contact from floating oil is predicted is at Warrnambool Plains on 0.2 days.
- Pre-emptive assessment and shoreline assessments (OM04 and OM05) will be mobilised to locations with shoreline contact at 100 g/m², which occurs at Warrnambool Plains on 0.2 days.
- Arrangements for support organisations who provide specialist services (trained personnel, protection and deflection equipment) and/or resources and should be tested regularly.
- Tactical Response Plans (TRPs) for Response Protection Areas (RPAs) along with other relevant plans, procedures and support documents need to be in place for Operational and Support functions. These should be reviewed and updated regularly.
- Following Shoreline Assessment and agreement of prioritisation with regulatory or jurisdictional authorities, clean-up operations would commence until agreed termination criteria are reached.

In addition, assumptions are required to estimate the response need for Shoreline Protection and Deflection. These assumptions have been described in the table below.

Table 5-3: Response Planning Assumptions – Shoreline Protection and Deflection

Response Planning Assumptions	
Safety considerations	<p>Shoreline protection and deflection operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include:</p> <ul style="list-style-type: none"> • hydrocarbon gas and/or liquid exposure • safe for deployment and conditions within range of vessels • high ambient temperatures.
Shoreline Protection and Deflection	<p>One shoreline protection and deflection operation may include:</p> <ul style="list-style-type: none"> • Quantity of shoreline sealing boom (as outlined in TRP) • Quantity of fence or curtain boom (as outlined in TRP) • 1-2 x trained supervisors • 8-10 x personnel/ labour hire <p>Specific details of each operation would be tailored to the Tactical Response Plan implemented (where available).</p>

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5.3.2 Environmental performance based on need

Table 5-4: Environmental Performance – Shoreline protection and deflection

Environmental Performance Outcome		To stop hydrocarbons encountering particularly sensitive areas		
Control measure		Performance Standard		Measurement Criteria (Section 5.9)
8	Response teams	8.1	In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), relevant Tactical Response Plans (TRPs) will be identified in the First Strike Plan for activation within 24-48 hours of predicted impact.	1, 3A, 3C, 4
		8.2	In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), mobilise teams to RPAs within 24-48 hours of predicted impact. Teams to contaminated RPAs comprised of: <ul style="list-style-type: none"> • 1-2 trained specialists per operation • 8-10 personnel/labour hire • Personnel sourced through resource pool. 	1, 2, 3B, 3C, 4
		8.3	In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), 1 operation mobilised within 24-48 hours to each identified RPA. Expected to be 3 RPAs within 24-48 hours for CS-02 (operation as detailed above)	1, 3A, 3B, 4
		8.4	14 trained personnel available within 24-48 hours sourced through resource pool.	1, 2, 3A, 3B, 3C, 4
		8.5	Open communication line to be maintained between CIMT and infield operations to ensure awareness of progress against plan(s)	1, 3A, 3B
		8.6	The safety of shoreline response operations will be considered and appropriately managed. During shoreline operations: <ul style="list-style-type: none"> • All personnel in a response will receive an operational/safety briefing before commencing operations • Gas monitoring and site entry protocols will be used to assess safety of an operational area before allowing access to response personnel 	1, 3B, 4
9	Response equipment	9.1	Equipment mobilised from closest stockpile within 24 hours.	1, 3A, 3C, 4
		9.2	Supplementary equipment mobilised from State and AMSA stockpiles 48 hours.	1, 3C, 3D, 4
		9.3	Supplementary equipment mobilised from OSRL within 48 hours.	
		9.4	Woodside maintains integrated fleet of vessels. Additional vessels can be sourced through existing contracts/frame agreements	1, 3A, 3C, 4
10	Management of Environmental Impact of the response risks	10.1	If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic primary producer habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore benthic environments with a preference for areas of sandy seabed where they can be identified	1
		10.2	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	

The resulting shoreline protection and deflection capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to shoreline protection and deflection at identified RPAs.

Under optimal conditions, during the subsea and surface releases the capability available meets the need identified. It indicates that, the shoreline protection and deflection capability have the following expected performance:

- The shortest timeframe that shoreline contact is predicted is at Warrnambool Plains on 0.2 days.
- Existing capability allows for mobilization and deployment of shoreline protection operations within 24-48 (if required). The existing capability is considered sufficient to mobilise and deploy protection at RPAs prior to hydrocarbon contact, guided by the ongoing operational monitoring.
- The most significant constraint on expanding the scale of response operations is the availability of accommodation and transport services in the region, and the management of response generated waste.
- TRPs have been developed for all identified RPAs.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in **Section 6.3**.

5.4 Shoreline Clean-up

Shoreline clean-up may be undertaken using a broad range of techniques when floating hydrocarbons contact shorelines. The timing, location and extent of shoreline clean-up activities can vary from one scenario to another, depending on the hydrocarbon type, sensitivities and values contacted, shoreline type and access, degree of oiling, and area oiled.

Shoreline clean-up is typically undertaken as a three-phase process:

- phase one (gross contamination removal) involving the collection of bulk oil, either floating against the shoreline or stranded on it
- phase two (moderate to heavy contamination removal) involving removal or in-situ treatment of shoreline substrates such as sand or pebble beaches, and
- phase three (final treatment or polishing) involving removal of the remaining residues of oil.

As phase one typically involves recovery of floating and pooled oil, and phase three removes minor volumes, they have not been considered in the assessment of response need for the scenarios identified.

The *Shoreline Clean-up Operational Plan* details the mobilisation and resource requirements for a shoreline clean-up operation including the logistics, support and facility arrangements to manage the movement of personnel and resources.

The *Shoreline Clean-up Operational Plan* includes the process for the CIMT to mobilise resources depending on the nature and scale of the spill. Woodside would activate and mobilise trained and competent personnel in shoreline assessment before or following shoreline contact at response thresholds.

Shoreline clean-up consists of different manual and mechanical recovery techniques to remove hydrocarbons and contaminated debris from a shoreline to minimise ongoing environmental contamination and impact. The National Plan also provides guidance on shoreline clean-up techniques as outlined in National Plan Guidance *Response assessment and termination of cleaning for oil contaminated foreshores* (AMSA 2015).

5.4.1 Response need based on predicted consequence parameters

The following statements identify the key parameters upon which the response need can be based:

- The shortest timeframe that shoreline contact from floating oil is predicted is at Warrnambool Plains on 0.2 days.
- Pre-emptive assessment and shoreline assessments (OM04 and OM05) will be mobilised to locations with shoreline contact at 100 g/m², which occurs at Warrnambool Plains on 0.2 days.
- Arrangements for support organisations who provide specialist services (trained personnel, protection and deflection equipment) and/or resources and should be tested regularly.
- Tactical Response Plans (TRPs) for Response Protection Areas (RPAs) along with other relevant plans, procedures and support documents need to be in place for Operational and Support functions. These should be reviewed and updated regularly.
- Following Shoreline Assessment and agreement of prioritisation with regulatory or jurisdictional authorities, clean-up operations would commence until agreed termination criteria are reached.

In addition, assumptions are required to estimate the response need for shoreline clean-up. These assumptions have been described in the table below.

Table 5-5: Response Planning Assumptions – Shoreline Clean-up

Response planning assumptions: Shoreline clean-up	
Safety considerations	<p>Shoreline clean-up operations cannot be implemented if the safety of response personnel cannot be guaranteed. This requires an initial and ongoing risk assessment of health and safety hazards and risks at the site. Personnel safety issues may include:</p> <ul style="list-style-type: none"> • hydrocarbon gas and/or liquid exposure • waves and/or sea states, tidal cycle and intertidal zone limits • presence of wildlife • high ambient temperatures.
Manual shoreline clean-up operation (Phase 2)	<p>One, manual shoreline clean-up operation (Phase 2) may include:</p> <ul style="list-style-type: none"> • 1–2 x trained supervisor • 8–10 x personnel/ labour hire • Supporting equipment for manual clean-up including rakes, shovels, plastic bags etc.
Physical properties	<p>Surface Threshold</p> <ul style="list-style-type: none"> • Lower – 100 g/m²–100% coverage of ‘stain’ – cannot be scratched off easily on coarse sediments or bedrock <ul style="list-style-type: none"> – Expected trigger to undertake detailed shoreline survey • Optimum – 250 g/m²– 25% coverage of ‘coat’ – can be scratched off with a fingernail on coarse sediments <ul style="list-style-type: none"> – Expected trigger to commence clean-up operations
Efficiency (m³ oil recovered per person per day)	<p>Manual shoreline clean-up (Phase 2) – approximately 0.25–1 m³ oil recovered per person per 10-hour day is based on moderate to high coverage of oil (100 g/m²–1000 g/m²) with manual removal using shovels/rakes, etc. from studies of previous response operations and exercises</p>

Table 5-6: Shoreline Clean-up techniques and recommendations

Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Natural recovery	Allowing shoreline to self-clean; no intervention undertaken.	<p>Remote and inaccessible shorelines for personnel, vehicles and machinery.</p> <p>Other clean-up techniques may cause more damage than allowing the shoreline to naturally recover.</p> <p>Natural recovery may be recommended for areas with mangroves and coral reefs due to their sensitivity to disturbance from other shoreline clean-up techniques.</p> <p>High-energy shorelines: where natural removal rates are high, and hydrocarbons will be removed over a short timeframe.</p>	<p>Low-energy shorelines: these areas tend to be where hydrocarbon accumulates and penetrates soil and substrates.</p>	<p>May be employed, if the operational NEBA identifies that other clean-up techniques will have a negligible or negative environmental impact on the shoreline.</p> <p>May also be used for buried or reworked hydrocarbons where other techniques may not recover these.</p>
Manual recovery	<p>Use of manpower to collect hydrocarbons from the shoreline.</p> <p>Use of this form of clean-up is based on type of shoreline.</p>	<p>Remote and inaccessible shorelines for vehicles and machinery.</p> <p>Areas where shorelines may not be accessible by vehicles or machinery and personnel can recover hydrocarbons manually.</p> <p>Where hydrocarbons have formed semi-solid to solid masses that can be picked up manually.</p> <p>Areas where nesting and breeding fauna cannot or should not be disturbed.</p>	<p>Coral reef or other sensitive intertidal habitats, as the presence of a response may cause more environmental damage than allowing them to recover naturally.</p> <p>For some high-energy shorelines such as cliffs and sea walls, manual recovery may not be recommended as it may pose a safety threat to responders.</p>	<p>May be used for sandy shorelines. Buried hydrocarbons may be recovered using shovels into small carry waste bags, but where possible the shoreline should be left to naturally recover to prevent any further burying of hydrocarbons (from general clean-up activities).</p>

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Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Sorbents	Sorbent boom or pads used to recover fluid or sticky hydrocarbons. Can also be used after manual clean-up to remove any residues from crevices or from vegetation.	<p>When hydrocarbons are free-floating close to shore or stranded onshore.</p> <p>As a secondary treatment method after hydrocarbon removal and in sensitive areas where access is restricted.</p>	Access for deploying and retrieving sorbents should not be through soft or sensitive habitats or affect wildlife.	<p>Used for rocky shorelines.</p> <p>Sorbent boom will allow for deployment from small shallow draught vessels, which will allow deployment close to shore where water is sheltered and to aid recovery.</p> <p>Sorbents will create more solid waste compared with manual clean-up, so will be limited to cleaning rocky shorelines.</p>
Vacuum recovery, flushing, washing	The use of high volumes of low-pressure water, pumping and/or vacuuming to remove floating hydrocarbons accumulated at shorelines.	<p>Suited to rocky or pebble shores where flushing can remobilise hydrocarbons (to be broken up) and aid natural recovery.</p> <p>Any accessible shoreline type from land or water. May be mounted on barges for water-based operations, on trucks driven to the recovery area, or hand-carried to remote sites.</p> <p>Flushing and vacuum may be useful for rocky substrate.</p> <p>Medium- to high-energy shorelines where natural removal rates are moderate to high.</p> <p>Where flushed hydrocarbons can be recovered to prevent further oiling of shorelines.</p>	<p>Areas of pooled light, fresh hydrocarbons may not be recoverable via vacuum due to fire and explosion risks.</p> <p>Shorelines with limited access.</p> <p>Flushing and washing not recommended for loose sediments.</p> <p>High-energy shorelines where access is restricted.</p>	High volume low pressure (HVLP) flushing and washing into a sorbent boom could be used for rocky substrate, if protection booming has been unsuccessful in deflecting hydrocarbons from these areas.

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Technique	Description	Shoreline type		Application
		Recommended	Not recommended	
Sediment reworking	Movement of sediment to surf to allow hydrocarbons to be removed from the sediment and move sand via heavy machinery.	When hydrocarbons have penetrated below the surface. Recommended for pebble/cobble shoreline types. Medium- to high-energy shorelines where natural removal rates are moderate to high.	Low-energy shorelines as the movement of substrate will not accelerate the natural cleaning process. Areas used by fauna which could potentially be affected by remobilised hydrocarbons.	Use of wave action to clean sediment: appropriate for sandy beaches where light machinery is accessible.
Vegetation cutting	Cutting vegetation to prevent oiling and reduce volume of waste and debris.	Vegetation cutting may be recommended to reduce the potential for wildlife being oiled. Where oiling is restricted to fringing vegetation.	Access in bird-nesting areas should be restricted during nesting seasons. Areas of slow-growing vegetation.	May be used on shorelines where vegetation can be safely cleared to reduce oiling.
Cleaning agents (OSCA)	Application of chemicals such as dispersants to remove hydrocarbons.	May be used for manmade structures and where public safety may be a concern.	Natural substrates and in low-energy environments where sufficient mixing energy is not present.	Not recommended for shorelines. Could be used for manmade structures such as boat ramps.

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5.4.2 Environmental performance based on need

Table 5-7: Environmental Performance – Shoreline Clean-up

Environmental Performance Outcome		To remove bulk and stranded hydrocarbons from shorelines and facilitate shoreline amenity habitat recovery.		
Control measure			Measurement Criteria (Section 5.9)	
11	Shoreline responders	11.1	In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), deployment of 1 shoreline clean-up teams to each contaminated RPAs comprised of: <ul style="list-style-type: none"> • 1-2 trained specialists per operation • 8-10 personnel/labour hire • Personnel sourced through resource pool within 24-48 hours of request from the CIMT. 	1, 2, 3A, 3B, 3C, 4
		11.2	In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), relevant Tactical Response Plans (TRPs) will be identified in the First Strike plan for activation within 24-48 hours of predicted impact.	1, 3A, 3C, 4
		11.3	Clean-up operations for shorelines in line with results and recommendations from SCAT outputs	1, 3A, 3B
		11.4	All shoreline clean-up sites will be zoned and marked before clean-up operations commence to prevent secondary contamination and minimise the mixing of clean and oiled sediment and shoreline substrates.	
		11.5	In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), mobilise and deploy up to 3 shoreline clean-up operations within 24-48 hours	1, 2, 3A, 3C, 4
		11.6	The safety of shoreline response operations will be considered and appropriately managed. During shoreline clean-up operations: <ul style="list-style-type: none"> • All personnel in a response will receive an operational/safety briefing before commencing operations • Gas monitoring and site entry protocols will be used to assess safety of an operational area before allowing access to response personnel 	1, 3B, 4
		11.7	Open communication line to be maintained between CIMT and infield operations to ensure awareness of progress against plan(s)	1, 3A, 3B
12	Shoreline clean up equipment	12.1	Contract in place with 3 rd party providers to access equipment.	1, 3A, 3C, 4
		12.2	Equipment mobilised from closest stockpile within 24 hours.	
		12.3	Supplementary equipment mobilised from State and AMSA stockpiles within 48 hours.	1, 3C, 3D, 4
		12.4	Supplementary equipment mobilised from OSRL within 48 hours.	
13	Management of environmental impact of the response risks	13.1	If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic primary producer habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore benthic environments with a preference for areas of sandy seabed where they can be identified	1

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Environmental Performance Outcome		To remove bulk and stranded hydrocarbons from shorelines and facilitate shoreline amenity habitat recovery.	
Control measure		Measurement Criteria (Section 5.9)	
	13.2	Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines	
	13.3	Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves	
	13.4	Removal of vegetation will be limited to moderately or heavily oiled vegetation	
	13.5	Oversight by trained personnel who are aware of the risks.	
	13.6	Trained unit leaders will brief personnel prior to operations of the environmental risks of presence of personnel on the shoreline.	

The resulting shoreline clean-up capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to shoreline clean-up at identified RPAs. Woodside's capability can cover all required shoreline clean-up operations for the PAP.

Whilst modelling predicts shoreline contact from day 1 (Warrnambool), Woodside is satisfied that the current capability is managing risks and impacts to ALARP.

The capability available meets the need identified for this activity. The shoreline clean-up capability has the following expected performance (if required during a response):

- Woodside has the capacity to mobilise and deploy up to 6-10 shoreline clean-up teams (approximately 18-70 responders in total) by the end of week 1 using existing labour hire contracts with Woodside, AMOSC, Core Group, AMSA, and OSRL team leads.
- Assessment of response capability indicates that for a worst-case scenario the actual teams required would meet the available capability and the response would be completed by end month 1.
- Woodside has considered deployment of additional personnel to undertake shoreline clean-up operations but is satisfied that the identified level of resource is balanced between cost, time and effectiveness. The most significant constraint on expanding the scale of response operations is the availability of accommodation and transport services in the region and management of response generated waste.
- TRPs have been developed for all identified RPAs.
- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in Section 6.4.

5.5 Oiled wildlife response (including hazing)

Oiled wildlife response (OWR) includes wildlife surveillance/reconnaissance, 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 a petroleum activity spill in Commonwealth waters, Woodside will act as the Control Agency and will be responsible for the wildlife response with advice and assistance from Department of Energy, Environment and Climate Action (DEECA). For a petroleum activity spill in State waters, DEECA will act as the Control Agency and will be responsible for the wildlife response. Woodside will continue to function as a support organisation for the OWR and will continue to provide planning and resources as required.

In such circumstances, Woodside would implement a response in accordance with the *Victorian Emergency Animal Welfare Plan* (Department of Jobs, Skills, Industry and Regions (DJSIR) (formerly Department of Jobs, Precincts and the Regions (DJPR)) and DEECA (formerly Department of Environment, Land Water and Planning (DELWP)), 2019) and Woodside's *Oiled Wildlife Response Operational Plan*. The latter includes the process for the CIMT to mobilise resources depending on the nature and scale of the spill.

Woodside retains specialist personnel to support and manage oiled wildlife operations, including trained and competent responders. Additional personnel would be sourced through Woodside's arrangements to support an oiled wildlife response as required.

5.5.1 Response need based on predicted consequence parameters

Wildlife Response Priority Areas and Assessment of Wildlife Impact

French-McCay et al. (2002), based on a review of existing literature at the time, determined lethal thresholds for floating and shoreline oil for the external coating of wildlife to be 10 g/m² for floating, and 100 g/m² for shoreline accumulation. It should however be noted that toxicity thresholds for wildlife are likely to be highly variable due to differences in species sensitivity, type of hydrocarbon, type of exposure (ingestion or external oiling), life-stage, and on-water versus land habitat.

For planning purposes, determination of wildlife priority protection areas is based on stochastic modelling of the worst-case spill scenarios at 10 g/m² for floating, and 100 g/m² for shoreline accumulation (acknowledging that impacts to wildlife may occur at lower concentrations), the known presence of wildlife, and in consideration of the following:

- Presence of high densities of wildlife, threatened species, and/or endemic species with high site fidelity
- Greatest probability of shoreline accumulation
- Shortest timeframe to contact

At the time of a spill, identification and allocation of wildlife response priority areas should also take into consideration any key biological activities.

Table 5-8: Key at-risk species potentially in Priority Protection Areas and open ocean

Species	Open ocean	Warrnambool Plain	Otway Plain	Otway Ranges	The Arches	Twelve Apostles	Otway
Marine turtles (including traversing/migrating and/or foraging)	✓	✓	✓	✓	✓	✓	✓
Whale sharks	x	x	x	x	x	x	x
Sea snakes	x	x	x	x	x	x	x
Seabirds and/or migratory shorebirds	✓	✓	✓	✓	✓	✓	✓
Cetaceans – migratory whales	✓	✓	✓	✓	✓	✓	✓
Cetaceans – dolphins and porpoises	✓	✓	✓	✓	✓	✓	✓
Dugongs	x	x	x	x	x	x	x
Pinnipeds	✓	✓	x	✓	x	x	x
Sharks and rays	✓	✓	✓	✓	✓	✓	✓

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The following statements identify the key parameters upon which a wildlife response need can be based:

- Floating oil at $>10 \text{ g/m}^2$ is predicted at Otway within 0.1 day.
- The shortest timeframe for shoreline accumulation at response thresholds ($>100 \text{ g/m}^2$) is predicted at Warrnambool Plain on day 0.2.
- At sea there are likely to be low numbers of at risk or impacted wildlife, and limited opportunities to rescue wildlife, given the distribution and behaviour of animals in the open marine environment.
- As the surface oil approaches shorelines and as oil accumulates on the shoreline, potential for oiled wildlife impacts is likely to increase as well as opportunities to rescue wildlife.

Tactics

Where there is imminent or actual impact to wildlife, Woodside will activate the Wildlife Division and follow the oiled wildlife incident management framework and implementation plan outlined in the Woodside *Oiled Wildlife Operational Plan*.

In Commonwealth waters, Woodside will be responsible for the planning and implementation of the OWR in its entirety. Noting that at sea, and in comparison, to the shoreline, there are likely to be less wildlife impacted by an oil spill and limited opportunities to rescue wildlife, given the distribution and behaviour of animals in the open marine environment. At sea, continued wildlife reconnaissance, carcass recovery, sampling of carcasses that cannot be retrieved and integration with scientific monitoring are more likely to be the focus of the OWR.

In State waters, until formal handover to DEECA occurs, Woodside can conduct the initial first-strike response actions for wildlife and continue to manage those operations after handover at the direction of DEECA.

5.5.2 Environmental performance based on need

Table 5-9: Environmental Performance – Oiled Wildlife Response

Environmental Performance Outcome		Oiled Wildlife Response is conducted in accordance with the <i>Victorian Emergency Animal Welfare Plan</i> (DJPR and DELWP, 2019) to ensure it is conducted in accordance with legislative requirements.		
Control measure		Performance Standard		Measurement Criteria (Section 5.9)
14	Wildlife response arrangements	14.1	Oiled Wildlife Operational Plan in place and utilised during a response to plan, coordinate, implement and terminate operations.	1, 3A, 4
		14.2	Initiate a wildlife first strike response within 24 hours of confirmed or imminent wildlife contact as directed by relevant Operational Monitoring techniques (OM01-05) and in liaison with DEECA.	1
15	Wildlife response equipment	15.1	Maintain contract with AMOSC for immediate access to oiled wildlife response equipment.	1, 3C, 3D, 4
		15.2	Maintain contract with OSRL to access additional oiled wildlife response equipment.	1, 3C, 3D, 4
16	Wildlife responders	16.1	Two Oiled Wildlife Team Members to supervise the oiled wildlife operations who have completed an Oiled Wildlife Response Management course.	1, 2, 3B
		16.2	Maintain contract with AMOSC for immediate access to trained oiled wildlife response specialists.	1, 3B, 3C
		16.3	Maintain contract with OSRL to access additional trained oiled wildlife response specialists.	1, 3B, 3C
		16.4	Open communication line to be maintained between CIMT and infield operations to ensure awareness of progress against plan(s).	1, 3A, 3B
17	Management of environmental impacts of response risks	17.1	Oiled wildlife operations (including hazing) would be implemented with advice and assistance from DEECA.	1

The resulting wildlife response capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to response at identified RPAs.

Under optimal conditions, during the subsea or surface release, the capability available meets the need identified. It indicates that, the wildlife response capability has the following expected performance:

- Undertake OWR first strike response:
 - Mobilisation of operational monitoring (OM01-05) to identify wildlife and RPAs contacted or at imminent risk of contact by hydrocarbons.
- Availability and mobilisation of trained OWR personnel to supervise OWR activities.
- Access to wildlife resources (personnel and equipment) to meet the needs where there are medium or high levels of wildlife impact.

5.6 Waste Management

Waste management is considered a support technique to wildlife response, containment and recovery and shoreline clean-up. Waste generated and collected during the response that will require handling, management and disposal may consist of:

- Liquids (recovered oil/water mixture), collected during shoreline clean-up and oiled wildlife operations
- Semi-solids/solids (oily solids), collected during shoreline clean-up and oiled wildlife operations
- Debris (e.g. seaweed, sand, woods, plastics), collected during shoreline clean-up and oiled wildlife operations

Expected waste volumes during an event are likely to vary depending on oil type, volume released, response techniques employed and how weathering of hydrocarbons. Waste management, handling and capacity should be scalable to maintain continuous response operations.

All waste management activities will follow the Victoria Environment Protection Regulations 2021 and the waste will be managed to minimise final disposal volumes. Waste treatment techniques will consider contaminated solids treatment to allow disposal to landfill and solids with high concentrations of hydrocarbon will be treated and recycled where possible or used in clean fill if suitable.

The waste products would be transported from response locations to the nearest suitable staging area/waste transfer station for treatment, disposal or recycling. Waste will be transferred with appropriately licensed vehicles. Containers will be available for temporary waste storage and will be:

- labelled with the waste type
- provided with appropriate lids to prevent waste being blown overboard
- banded if storing liquid wastes.
- processes will be in place for transfers of bulk liquid wastes and include:
 - inspection of transfer hose undertaken prior to transfer
 - watchman equipped with radio visually monitors loading hose during transfer
 - tank gauges monitored throughout operation to prevent overflow

The *Oil Spill Preparedness Waste Management Support Plan* details the procedures, capability and capacity in place between Woodside and its primary waste services contractor to manage waste volumes generated from response activities.

5.6.1 Response need based on predicted consequence parameters

Table 5-10: Response Planning Assumptions – Waste Management

Response planning assumptions: Waste management	
Waste loading per m ³ oil recovered (multiplier)	Shoreline clean-up (manual) – approximately 5-10x multiplier for oily solid and liquid wastes generated by manual clean-up.
	Oiled wildlife response – approximately 1 m ³ of oily solid and liquid waste generated for each wildlife unit cleaned

5.6.2 Environmental performance based on need

Table 5-11: Environmental Performance – Waste Management

Environmental Performance Outcome		To minimise further impacts, waste will be managed, tracked and disposed of in accordance with laws and regulations.		
Control measure		Performance Standard		Measurement Criteria (Section 5.9)
18	Waste Management	18.1	Contract with waste management services for transport, removal, treatment and disposal of waste	1, 3A, 3B, 3C, 4
		18.2	Access to at least 213 m ³ of solid and liquid waste storage available within 2 days upon activation of 3 rd party contract.	
		18.3	Access to up to 2400 m ³ by end of week 1.	
		18.4	Recovered hydrocarbons and wastes will be transferred to licensed treatment facility for reprocessing or disposal.	
		18.5	Waste management provider support staff available year-round to assist in the event of an incident with waste management as detailed in contract.	
		18.6	Open communication line to be maintained between CIMT and waste management services to ensure the reliable flow of accurate information between parties.	1, 3A, 3B
		18.7	Waste management to be conducted in accordance with Australian laws and regulations	1, 3A, 3B, 3C, 4
		18.8	Waste management services available and employed during response	
19	Management of environmental impacts of response risks	19.1	Teams will segregate liquid and solid wastes at the earliest opportunity.	1, 3A, 3B, 3C, 4

The resulting waste management capability has been assessed against the WCCS. The range of techniques provide an ongoing approach to waste management at identified RPAs.

The largest shoreline volumes are predicted during week 1 at a maximum volume of ~220 tonnes/ m³ (CS-02), with ~1100-2200 tonnes/ m³ waste expected across all shoreline clean-up operations, therefore the capability available exceeds the need identified.

It indicates that the waste management capability has the following expected performance:

- Woodside has assessed the existing capability available and considered potential alternative, additional and improved control measures. Where control measures have been selected and implemented, they are included in **Section 6.5**.
- Woodside’s waste contractor has access to approximately 80,000 m³ to treat overall waste volumes over the duration of the spill response. The waste management requirements are within Woodside’s and its service providers existing capacity.

5.7 Scientific monitoring

A scientific monitoring program (SMP) would be activated following a Level 2 or 3 unplanned hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors. This would consider receptors at risk (ecological and socio-economic) for the entire predicted EMBA and in particular, any identified Pre-emptive Baseline Areas (PBAs) for the credible spill scenario(s) or other identified unplanned hydrocarbon releases associated with the Petroleum Activities Program (PAP) (refer to Table 2-1: PAP credible spill scenarios).

The outputs of the stochastic hydrocarbon spill modelling are used to assess the environmental risk, in terms of delineating which areas of the marine environment are predicted to be exposed to hydrocarbons exceeding environmental threshold concentrations (refer to Table 2-2, Section 2.3.1). The summary of all the locations where hydrocarbon thresholds could be exceeded by any of the simulations modelled is defined as the EMBA. The Petroleum Activities Program worst-case credible spill scenario, CS-02, defines the EMBA and are the basis of the SMP approach presented in this section.

It should be noted that the resulting SMP receptor locations differ from the Response Protection Areas (RPAs) presented and discussed in Section 3 of this document due to the applicability of different hydrocarbon threshold levels. The SMP would be informed by the data collected via the operational monitoring program (OMP) studies, however, it differs from the OMP in being a long-term program independent of, and not directing, the operational oil spill response or monitoring of impacts from response activities (refer to Section 5.1) for operational monitoring overview).

Key objectives of the Woodside oil spill scientific monitoring program are:

- Assess the extent, severity and persistence of the environmental impacts from the spill event; and
- Monitor subsequent recovery of impacted key species, habitats and ecosystems.

The SMP comprises ten targeted environmental monitoring programs to assess the condition of a range of physico-chemical (water and sediment) and biological (species and habitats) receptors including EPBC Act listed species, environmental values associated with protected areas and socio-economic values, such as fisheries. The ten SMPs are as follows:

- SM01 – Assessment of the presence, quantity and character of hydrocarbons in marine waters (linked to OM01 to OM03)
- SM02 – Assessment of the presence, quantity and character of hydrocarbons in marine sediments (linked to OM01 and OM05)
- SM03 – Assessment of impacts and recovery of subtidal and intertidal benthos
- SM04 – Assessment of impacts and recovery of mangroves/saltmarsh habitat
- SM05 – Assessment of impacts and recovery of seabird and shorebird populations
- SM06 – Assessment of impacts and recovery of nesting marine turtle populations
- SM07 – Assessment of impacts to pinniped colonies including haul-out site populations
- SM08 – Desktop assessment of impacts to other non-avian marine megafauna
- SM09 – Assessment of impacts and recovery of marine fish (linked to SM03)
- SM10 – Assessment of physiological impacts to important fish and shellfish species (fish health and seafood quality/safety) and recovery.

These SMPs have been designed to cover all key tropical and temperate habitats and species within Australian waters and broader, if required. A planning area for scientific monitoring is also identified to acknowledge potential hydrocarbon contact at the environmental threshold

concentrations and beyond the EMBA. This planning area has been set with reference to the entrained low exposure value of 10 ppb detailed in NOPSEMA Bulletin #1 Oil Spill Modelling (2019), as shown in Figure 5 1.

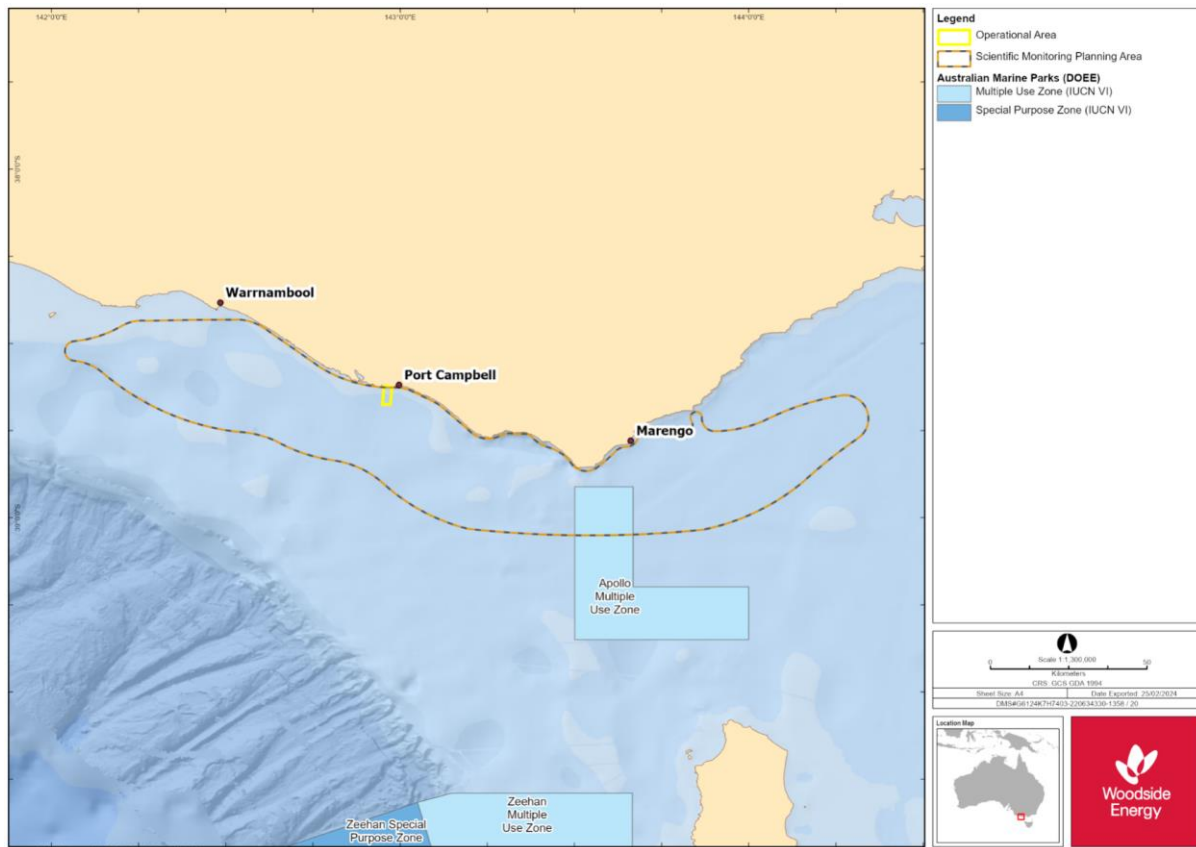


Figure 5-1: The planning area for scientific monitoring based on the area potentially contacted by the low (below ecological impact) entrained hydrocarbon threshold of 10 ppb in the event of the worst-case credible spill scenario (CS-02).

Please note that Figure 5-1 represents the overall combined extent of the oil spill model outputs based on a total of 400 replicate simulations over an annual period for CS-02 and therefore represents the largest spatial boundaries of 400 oil spill combinations, not the spatial extent of a single spill.

5.7.1 Scientific Monitoring Deployment Considerations

Scientific Monitoring Deployment Considerations	
Existing baseline studies for sensitive receptor locations predicted to be affected by a spill	<p>Pre-emptive Baseline Areas (PBAs) of the following two categories:</p> <ul style="list-style-type: none"> • PBAs within the predicted <10-day hydrocarbon contact time prediction: The approach is to conduct a desktop review of available and appropriate baseline data for key receptors for locations (if any) that are potentially impacted within 10 days of a spill and look to conduct baseline data collection to address data gaps and demonstrate spill response preparedness. Planning for baseline data acquisition is typically commenced pre-PAP and execution of studies undertaken with consideration of weather, receptor type, seasonality and temporal assessment requirements. • PBAs >10 days to predicted hydrocarbon contact in the event of an unplanned hydrocarbon release (from the PAP). SMP activation (as per the Minerva Decommissioning and Field Management First Strike Plan) directs the SMP team to follow the steps outlined in the SMP Operational Plan. The steps include checking the availability and type of existing baseline data, with particular reference to any Pre-emptive Baseline Areas (PBAs) identified as >10 days to hydrocarbon contact. Such information is used to identify response phase PBAs and plan for the activation of SMPs for pre-emptive (i.e. pre-hydrocarbon contact) baseline assessment.
Pre-emptive Baseline in the event of a spill	Activation of SMPs to collect baseline data at sensitive receptor locations with predicted hydrocarbon contact time >10 days (as documented in ANNEX C).
Survey platform suitability and availability	In the event of the SMP activation, suitable survey platforms are available and can support the range of equipment and data collection methodologies to be implemented in nearshore and offshore marine environments.
Trained personnel to implement SMPs suitable and available.	Access to trained personnel and the sampling equipment contracted for scientific monitoring via a dedicated scientific monitoring program standby contract.
Met-ocean conditions	<p>The following met-ocean conditions have been identified to implement SMPs:</p> <ul style="list-style-type: none"> • Waves <1 m for nearshore systems • Waves <1.5 m for offshore systems • Winds <20 knots • Daylight operations only <p>SMP implementation will be planned and managed according to HSE risk reviews and the met-ocean conditions on a day-to-day basis by SMP operations.</p>

5.7.2 Response planning assumptions

Response Planning Assumptions	
Pre-emptive Baseline Areas (PBAs)	<p>Pre-emptive Baseline Areas (PBAs) identified through the application of defined hydrocarbon impact thresholds during the Quantitative Spill Risk Assessment process and a consideration of the minimum time to contact at receptor locations fall into two categories:</p> <ul style="list-style-type: none"> • PBAs for which baseline data exist or are planned for and data collection may commence pre-PAP (≤ 10 days minimum time to contact). • PBAs (> 10 days minimum time to contact) for which baseline data may be collected in the event of an unplanned hydrocarbon release. Response phase

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	<p>PBAs are prioritised for SMP activities due to vulnerability (i.e. time to contact and environmental sensitivity) to potential impacts from hydrocarbon contact and an identified need to acquire baseline data.</p> <p>Time to hydrocarbon contact of >10 days has been identified as a minimum timeframe within which it is feasible to plan and mobilise applicable SMPs and commence collection of baseline (pre-hydrocarbon contact) data, in the event of an unplanned hydrocarbon release from Minerva Decommissioning and Field Management activities.</p> <p>Pre-emptive Baseline Areas for Minerva Decommissioning and Field Management activities are identified and listed in ANNEX D, Table D-1. The PBAs together with the situational awareness (from the operational monitoring) are the basis for the response phase SMP planning and implementation.</p>
Pre-Spill	<p>Minerva Decommissioning and Field Management</p> <p>A review of existing baseline data for receptor locations (refer to Annex D) with potential to be contacted by surface, dissolved or entrained hydrocarbons at environmental thresholds within ≤10 days, relating to the credible hydrocarbon release for the PAP has identified the following:</p> <ul style="list-style-type: none"> • Warrnambool Plain • Otway Ranges • Otway Plain • Victorian Volcanic Plain • Port Phillip Bay • Apollo AMP
In the Event of a Spill	<p>Receptor locations with >10 days to hydrocarbon contact, as well as the wider area, will be investigated and identified by the SMP team (in the Environment Unit of the CIMT) as the spill event unfolds and as the situational awareness provided by the OMPs permits delineation of the spill affected area (for example, updates to the spill trajectory tracking). The full list is presented in Annex D, based on the PAP credible spill scenario(s) (Table 2-1).</p> <p>To address the initial focus in a response phase SMP planning situation, receptor locations predicted to be contacted between >10 days and 20 days have been identified as follows:</p> <ul style="list-style-type: none"> • Bridgewater • Glenelg Plain • Gippsland Plain • Wilsons Promontory • Flinders <p>The unfolding spill affected area predictions and confirmation of appropriate baseline data will determine the selection of receptor locations and SMPs to be activated to gather pre-emptive (pre-hydrocarbon contact) data. Refer to ANNEX C for further details on scientific monitoring plan implementation and delivery). The timing of SMP activation and mobilisation of the individual SMPs to undertake data collection will be decided and documented by the Woodside SMP team following the process outlined in the SMP Operational Plan.</p> <p>In the event key receptors within geographic locations that are potentially impacted after 10 days following a spill event or commencement of the spill and where adequate and appropriate baseline data are not available, there will be a response phase effort to collect baseline data for the following purposes:</p> <ol style="list-style-type: none"> i. Priority will be given to the collection of baseline data for receptors predicted to be within the spill affected area prior to hydrocarbon contact. The process is initiated with the investigation of available baseline and time to hydrocarbon contact (>10 days which is sufficient time to mobilise SMP teams and acquire data before hydrocarbon contact).

	ii. Collect baseline data for receptors predicted to be outside the spill affected area so reference datasets for comparative analysis with impacted receptor types can be assessed post-spill.
Baseline Data	<p>A summary of the spill affected area and receptor locations as defined by the EMBA for the PAP credible spill scenario(s) is presented Section 2.3.1</p> <p>The key receptors at risk by location and corresponding SMPs based on the EMBA for the PAP are presented in ANNEX D, as per credible spill event scenario(s). This matrix maps the receptors at risk with their location and the applicable SMPs that may be triggered in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors. Receptor locations and applicable SMPs are colour coded to highlight possible time to contact based on receptor types and locations.</p> <p>The status of baseline studies relevant to the PAP are tracked by Woodside through the maintenance of a Corporate Environment Environmental Baseline Database (managed by the Woodside Biodiversity and Science team), as well as accessing external databases such as the DEECA CoastKit⁵ (refer to ANNEX C: Oil Spill Scientific Monitoring Program).</p>

5.7.3 Summary – scientific monitoring

The resulting scientific monitoring capability has been assessed against the PAP credible spill scenario(s). The range of techniques provide an ongoing approach to monitoring operations to assess and evaluate the scale and extent of impacts. All known reasonably practicable control measures have been adopted with the cost and organisational complexity of these options determined to be moderate and the overall delivery effectiveness determined to be medium. The SMP's main objectives can be met, with no additional, alternative or improved control measures providing further benefit.

5.7.4 Response planning: need, capability and gap – scientific monitoring

The receptor locations identified in Annex D provide the basis of the SMPs likely to be selected and activated. Once the Woodside SMP Delivery team and the SMP standby contractor have been stood up and the exact nature and scale of the spill becomes known, the SMPs to be activated will be confirmed as per the process set out in the SMP Operational.

Scope of SMP Operations in the event of a hydrocarbon spill

Documented baseline studies are available for certain receptor locations as detailed in Annex D, Table D-2. The SMP technique would be to deploy SMP teams to maximise the opportunity to collect pre-emptive data at sensitive receptor locations. The exact locations where hydrocarbon contact occurs may be unpredictable, SM01 would be mobilised as a priority to be able to detect hydrocarbons and track the leading edge of the spill to verify where hydrocarbon contact occurs which will assist with where SMP resources are a priority need to obtain pre-emptive baseline data.

The ALARP assessment for the SMP (Section 6.7) considers alternate, additional, and/or improved control measures on each selected response technique.

⁵ <https://mapshare.vic.gov.au/coastkit/>

5.7.5 Environmental performance based on need

Table 5-12: Scientific monitoring

Environmental Performance Outcome		Woodside can demonstrate preparedness to stand up the SMP to quantitatively assess and report on the extent, severity, persistence and recovery of sensitive receptors impacted from the spill event		
Control measure		Performance Standard		Measurement Criteria
20	<ul style="list-style-type: none"> Woodside has an established and dedicated SMP team comprising the Biodiversity and Science Team and additional Environment Advisers within the HSEQ Function. 	20.1	SMP team comprises a pool of competent Environment Advisers (stand up personnel) who receive training regarding the SMP, SMP activation and implementation of the SMP on an annual basis	<ul style="list-style-type: none"> Training materials Training attendance registers Process that maps minimum qualification and experience with key SMP role competency and a tracker to manage availability of competent people for the SMP team including redundancy and rostering
21	<ul style="list-style-type: none"> Woodside have a SMP standby contractor to provide scientific personnel to resource a base capability of one team per SMP (SM01-SM10, see Table C-2, ANNEX C) as detailed in Woodside's SMP standby contractor Implementation Plan, to implement the oil spill scientific monitoring programs. The availability of relevant personnel is reported to Woodside monthly via a simple report on the base-loading availability of people for each of the SMPs comprising field work for data collection (SMP resourcing report register). In the event of a spill and the SMP is activated, the base-loading availability of scientific personnel will be provided by SMP standby contractor for the individual SMPs and where gaps in resources are identified, SMP standby contractor/Woodside will seek additional personnel (if needed) from other sources including Woodside's Environmental Services Panel. 	21.1	<p>Woodside maintains the capability to mobilise personnel required to conduct scientific monitoring programs SM01 – SM10 (except desktop based SM08):</p> <ul style="list-style-type: none"> Personnel are sourced through the existing standby contract with SMP standby, as detailed within the SMP Implementation Plan. Scientific Monitoring Program Implementation Plan describes the process for standing up and implementing the scientific monitoring programs. SMP team stand up personnel receive training regarding the stand up, activation and implementation of the SMP on an annual basis 	<ul style="list-style-type: none"> HSP Internal Control Environment tracks the quarterly review of the Oil Spill Contracts Master. SMP resource report of personnel availability provided by SMP contractor on monthly basis (SMP resourcing report register). Training materials Training attendance registers Competency criteria for SMP roles SMP annual arrangement testing and reporting
22	<ul style="list-style-type: none"> Roles and responsibilities for SMP implementation are captured in Table C-1 (Annex C) and the SMP team (as per the organisational structure of the CIMT) is outlined in SMP Operational Plan. Woodside has a defined Crisis and Incident Management structure including Source Control, Operations, Planning and Logistics functions to manage a loss of well control response. SMP Team structure, interface with SMP standby contractor (standby SMP contractor) and linkage to the CIMT is presented in Figure C-1, ANNEX C Woodside has a defined Command, Control and Coordination structure for Incident and Emergency Management that is based on the ICS framework. Woodside utilises an online Incident Management Information System (IMIS) to coordinate and track key incident management functions. This includes specialist modelling programs, geographic information systems (GIS), as well as communication flows within the Command, Control and Coordination structure. SMP activated via the First Strike Plan. Step by step process to activation of individual SMPs provided in the SMP Operational Plan. All decisions made regarding SMP logged in the online IMIS (SMP team members trained in using Woodside's online Incident Management System) SMP component input to the CIMT Incident Action Plan (IAP) as per the identified CIMT timed sessions and the SMP IAP logged on the online IMIS Woodside Biodiversity and Science Team provide awareness training on the activation and stand-up of the Scientific Monitoring Programme (SMP) for the Environment Advisers in Woodside who are listed on the SMP team on an annual basis. Woodside Biodiversity and Science Team provide awareness training on the activation and stand-up of the Scientific Monitoring Programme (SMP) for the SMP standby contractor. Woodside Biodiversity and Science Team co-ordinates an annual SMP arrangement testing exercise with the SMP standby contractor. 	22.1	<ul style="list-style-type: none"> Woodside have established an SMP organisational structure and processes to stand up and deliver the SMP. 	<ul style="list-style-type: none"> SMP Oil Spill Scientific Monitoring Operational Plan SMP Implementation Plan SMP annual arrangement testing and reporting

23	<ul style="list-style-type: none"> Chartered and mutual aid vessels. Suitable vessels would be secured from the Woodside support vessels, regional fleet of vessels operated by Woodside and other operators and the regional charter market. Vessel suitability will be guided by the need to be equipped to operate grab samplers, drop camera systems and water sampling equipment (the individual vessel requirements are outlined in the relevant SMP methodologies (refer to Table C-2, ANNEX C). Nearshore mainland waters could use the same approach as for open water. Smaller vessels may be used where available and appropriate. Suitable vehicles and machinery for onshore access to nearshore SMP locations would be provided by Woodside's transport services contract and sourced from the wider market. Dedicated survey equipment requirements for scientific monitoring range from remote towed video and drop camera systems to capture seabed images of benthic communities to intertidal/onshore surveying tools such as quadrats, theodolites and spades/trowels, cameras and binoculars (specific survey equipment requirements are outlined in the relevant SMP methodologies (refer to Table C-2, ANNEX C)). Equipment would be sourced through the existing SMP standby contract with SMP standby contractor for SMP resources and if additional surge capacity is required this would be available through the other Woodside Environmental Services Panel Contractors and specialist contractors. SMP standby contractor can also address equipment redundancy through either individual or multiple suppliers. MoUs are in place with one marine sampling equipment companies and one analytical laboratory (SMP resourcing report register). Availability of SMP equipment for offshore/onshore scientific monitoring team mobilisation is within one week to ten days of the commencement of a hydrocarbon release. This meets the SMP mobilisation lead time that will support meeting the response objective of 'acquire, where practicable, the environmental baseline data prior to hydrocarbon contact required to support the post-response SMP. 	23.1	<p>Woodside maintains standby SMP capability to mobilise equipment required to conduct scientific monitoring programs SM01 – SM10 (except desktop based SM08):</p> <ul style="list-style-type: none"> Equipment is sourced through the existing standby contract with SMP standby contractor, as detailed within the SMP Implementation Plan. 	<ul style="list-style-type: none"> HSP Internal Control Environment (ICE) tracks the quarterly review of the Oil Spill Contracts Master. SMP standby monthly resource reports of equipment availability provided by SMP contractor (SMP resourcing report register). SMP annual arrangement testing and reporting
24	<p>Woodside's SMP approach addresses the pre-PAP acquisition of baseline data for Pre-emptive Baseline Areas (PBAs) with ≤10 days if required following a baseline gap analysis process. Woodside maintains knowledge of Environmental Baseline data through:</p> <ul style="list-style-type: none"> Documentation annual reviews of the Woodside Baseline Environmental Studies Database, and specific activity baseline gap analyses. Accessing external databases such as the DEECA CoastKit⁶. 	24.1	<ul style="list-style-type: none"> Annual reviews of environmental baseline data PAP specific Pre-emptive Baseline Area baseline gap analysis 	<ul style="list-style-type: none"> Annual review/ update of Woodside Baseline Environmental Studies Database Desktop review to assess the environmental baseline study gaps completed prior to EP submission Accessing baseline knowledge via the SMP annual arrangement testing
Environmental Performance Outcome		SMP plan to acquire response phase monitoring targeting pre-emptive baseline data achieved		
Control measure		Performance Standard	Measurement Criteria	
25	<p>Woodside's SMP approach addresses:</p> <ul style="list-style-type: none"> Scientific data acquisition for PBAs >10 days to hydrocarbon contact and activated in the response phase and Transition into post-response SMP monitoring. 	25.1	<p>Pre-emptive Baseline Area (PBA) baseline data acquisition in the response phase</p> <p>If baseline data gaps are identified for PBAs predicted to have hydrocarbon contact in >10 days, there will be a response phase effort to collect baseline data. Priority in implementing SMPs will be given to receptors where pre-emptive baseline data can be acquired or improved.</p> <p>SMP team (within the Environment Unit of the CIMT) contribute SMP component of the CIMT Planning Function in development of the IAP.</p>	<ul style="list-style-type: none"> Response SMP plan Woodside's online Incident Management System Records SMP component of the Incident Action Plan.
		25.2	<p>Post Spill contact</p> <p>For the receptors contacted by the spill in where baseline data are available, SMPs programs to assess and monitor receptor condition will be implemented post spill (i.e. after the response phase):</p>	<ul style="list-style-type: none"> SMP planning document SMP Decision Log Incident Action Plans (IAPs)
Environmental Performance Outcome		Implementation of the SMP (response and post-response phases)		

⁶ <https://mapshare.vic.gov.au/coastkit/>

Control measure		Performance Standard	Measurement Criteria
26	<ul style="list-style-type: none"> Scientific monitoring will address quantitative assessment of environmental impacts of a level 2 or 3 spill or any release event with the potential to contact sensitive environmental receptors. The SMP comprises ten targeted environmental monitoring programs. SMP supporting documentation: (1) Oil Spill Scientific Monitoring Operational Plan; (2) SMP Implementation Plan and (3) SMP Process and Methodologies Guideline The Oil Spill Scientific Monitoring Operational Plan details the process of SMP selection, input to the IAP to trigger operational logistic support services. Methodology documents for each of the ten SMPs are accessible detailing equipment, data collection techniques and the specifications required for the survey platform support. The SMP standby contractor holds a Woodside SMP implementation plan which details activation processes, linkage with the Woodside SMP team and the general principles for the planning and mobilisation of SMPs to deliver the individual SMPs activated. Monthly resourcing report are issued by the SMP standby contractor (SMP resourcing report register. All SMP documents and their status are tracked via SMP document register. 	26.1 Implementation of SM01 SM01 will be implemented to assess the presence, quantity and character of hydrocarbons in marine waters during the spill event in nearshore areas	Evidence SM01 has been triggered: <ul style="list-style-type: none"> Documentation as per requirements of the SMP Operational Plan Woodside's online Incident Management System Records. SMP component of the IAP SMP data records from field
		26.2 Implementation of SM02-SM10 SM02-SM10 will be implemented in accordance with the objectives and activation triggers as per Table C-2 of Annex C.	Evidence SMPs have been triggered: <ul style="list-style-type: none"> Documentation as per requirements of the SMP Operational Plan Woodside's online Incident Management System Records. SMP component of the IAP SMP Data records from field
		26.3 Termination of SMP plans The Scientific Monitoring Program will be terminated in accordance with termination triggers for the SMP's detailed in Table C-2 of Annex C, and the Termination Criteria Decision-tree for Oil Spill Environmental Monitoring (Figure C-3 of Annex C):	Evidence of Termination Criteria triggered: <ul style="list-style-type: none"> Documentation and approval by relevant persons/ organisations to end SMPs for specific receptor types.

5.8 Incident Management System

The Incident Management System is both a control measure and a measurement criterion. As a control measure the IMS function is to prompt, facilitate and record the completion of three key response planning processes detailed below. As a measurement criterion the IMS records the evidence of the timeliness of all response actions included in the environmental performance standards and the plans used of the PAP.

As the IMS does not directly remove hydrocarbons spilt into the marine environment there is no direct relationship to the response planning need.

5.8.1 Incident action planning

The CIMT will be required to collect and interpret information from the scene of the incident to determine support requirements to the site-based IMT, develop an incident action plan (IAP) and assist the IMT with the execution of that plan. The site-based IC may request the CIMT to complete notifications internally within Woodside, to relevant persons/ organisations and government agencies as required. Depending on the type and scale of the incident either the CIMT DM or IC will be responsible for ensuring the development of the IAP. Incident Action Planning is an ongoing process that involves continual review to confirm appropriateness of techniques to control the incident for the situation at the time.

5.8.2 Operational NEBA process

In the event of a response Woodside will confirm that the response techniques adopted at the time of Environment Plan/ Oil Pollution Emergency Plan (EP/ OPEP) acceptance remain appropriate to reduce the consequences of the spill. This process verifies that there is a continuing net environmental benefit associated with continuing the response technique through the operational NEBA process. This process manages the environmental risks and impacts of response techniques during the spill response, an operational NEBA will be undertaken throughout the response, for each operational period.

The operational NEBA will consider the risks and benefits of conducting and response activity. For example, if vessels are required for access to nearshore or onshore areas, anchoring locations will be selected to minimise disturbance to benthic habitats. Vessel cleanliness would be commensurate with the receiving environment. The operational NEBA will consider the risks and benefits of conducting other response techniques.

The operational NEBA process is also used to terminate a response. Using data from operational and scientific monitoring activities the response to a hydrocarbon spill will be terminated in accordance with the termination process outlined in the Oil Pollution Emergency Arrangements (Australia). In effect the operational NEBA will determine whether there is net environmental benefit to continue response operations.

5.8.3 Consultation engagement process

Woodside will consult relevant persons/organisations during the spill response in accordance with internal standards. This process requires that Woodside will:

- Undertake all required notifications (including government notifications) for persons/ organisations in the region (identified in the First Strike Plan). This includes notification to mariners to communicate navigational hazards introduced through response equipment and personnel.
- In the event of a response, identify and engage with relevant persons/ organisations and continually assess and review.

5.8.4 Environmental performance based on need

Table 5-13: Environmental Performance – Incident Management System

Environmental Performance Outcome		To support the effectiveness of all other control measures and monitor/record the performance levels achieved.		
Control measure		Performance Standard		Measurement Criteria (Section 5.9)
27	Operational SIMA	27.1	Confirm that the response techniques adopted at the time of acceptance remain appropriate to reduce the consequences of the spill within 24 hours.	1, 3A
		27.2	Record the evidence and justification for any deviation from the planned response activities.	
		27.3	Record the information and data from operational and scientific monitoring activities used to inform the SIMA.	
28	Stakeholder engagement	28.1	Prompt and record all notifications (including government notifications) for persons/ organisations in the region that are made	
		28.2	In the event of a response, identification of relevant persons/ organisations will be re-assessed throughout the response period.	
		28.3	Undertake communications in accordance with: <ul style="list-style-type: none"> • Woodside Crisis Management Functional Support Team Guideline – Reputation • External Communication and Continuous Disclosure Procedure • External Stakeholder Engagement Procedure 	
29	Personnel required to support any response	29.1	Action planning is an ongoing process that involves continual review to ensure techniques to control the incident are appropriate to the situation at the time.	1, 3B
		29.2	A duty roster of trained and competent people will be maintained to ensure that minimum manning requirements are met all year round.	3C
		29.3	Immediately activate the CIMT with personnel filling one or more of the following roles: <ul style="list-style-type: none"> • CIMT Incident Commander • CIMT Deputy Incident Commander • Operations Section Chief • Planning Section Chief • Logistics Section Chief • Documentation Unit Leader • Safety Officer • Environment Unit Leader • Human Resources Officer • Public Information Officer • Situation Unit Leader • Finance Section Chief • Source Control Section Chief 	1, 2, 3B, 3C, 4
		29.4	Collect and interpret information from the scene of the incident to determine support requirements to the site-based IMT, develop an Incident Action Plan (IAP) and assist with the execution of that plan.	
		29.5	S&EM advisors will be integrated into CIMT to monitor performance of all functional roles.	

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Environmental Performance Outcome		To support the effectiveness of all other control measures and monitor/record the performance levels achieved.		
Control measure		Performance Standard		Measurement Criteria (Section 5.9)
		29.6	Continually communicate the status of the spill and support Woodside to determine the most appropriate response by delivering on the responsibilities of their role.	
		29.7	Follow the OPEA, Operational Plans, FSPs, support plans and the IAPs developed.	1, 2, 3A, 4
		29.8	Contribute to Woodside's response in accordance with the aims and objectives set by the Incident Commander.	1, 2, 3B, 3C, 4

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5.9 Measurement criteria for all response techniques

Woodside ensures compliance with environmental performance outcomes and standards through four primary mechanisms. The aforementioned performance tables identify which of these four mechanisms monitors the readiness and records the effectiveness and performance of the control measures adopted.

1. The Incident Management System

The Incident Management System (IMS) supports the implementation of the Emergency and Crisis Management Procedure. The IMS provides a near real-time, single source of information for monitoring and recording an incident and measuring the performance of those control measures.

The Emergency and Crisis Management Procedure defines the management framework, including roles and responsibilities, to be applied to any size incident (including hydrocarbon spills). The organisational structure required to manage an incident is developed in a modular fashion and is based on the specific requirements of each incident. The structure can be scaled up or down.

The Incident Action Plan (IAP) process formally documents and communicated the:

- Incident objectives
- Status of assets
- Operational period objectives
- Response techniques (defined during response planning)
- The effectiveness of response techniques.

The information captured in the IMS (including information from personal logs and assigned tasks/close outs) confirms the response techniques implemented remain appropriate to reduce the consequences of the spill. The system also records all information and data that can be used to support the site-based IMT, development and the execution of the IAP.

2. The S&EM Competency Dashboard

The S&EM competency dashboard records the number of trained and competent responders that are available across Woodside, and some external providers, to participate in a response.

This number varies dependent on expiry of competency certificates, staff attrition, internal rotations, leave and other absences. As such the Dashboard is designed to identify the minimum manning requirements and to identify sufficient redundancy to cater for the variances listed above.

Figure 5-2 shows the minimum manning numbers for the different hydrocarbon spill response roles and the number of qualified persons against those roles.

Woodside's pool of trained responders is composed of but not limited to personnel from the following organisations:

- Woodside internal
- Australian Marine Oil Spill Centre (AMOSC) core group
- AMOSC
- Oil Spill Response Limited (OSRL)
- Marine Spill Response Corporation (MSRC)
- AMSA
- Woodside contracted workforce

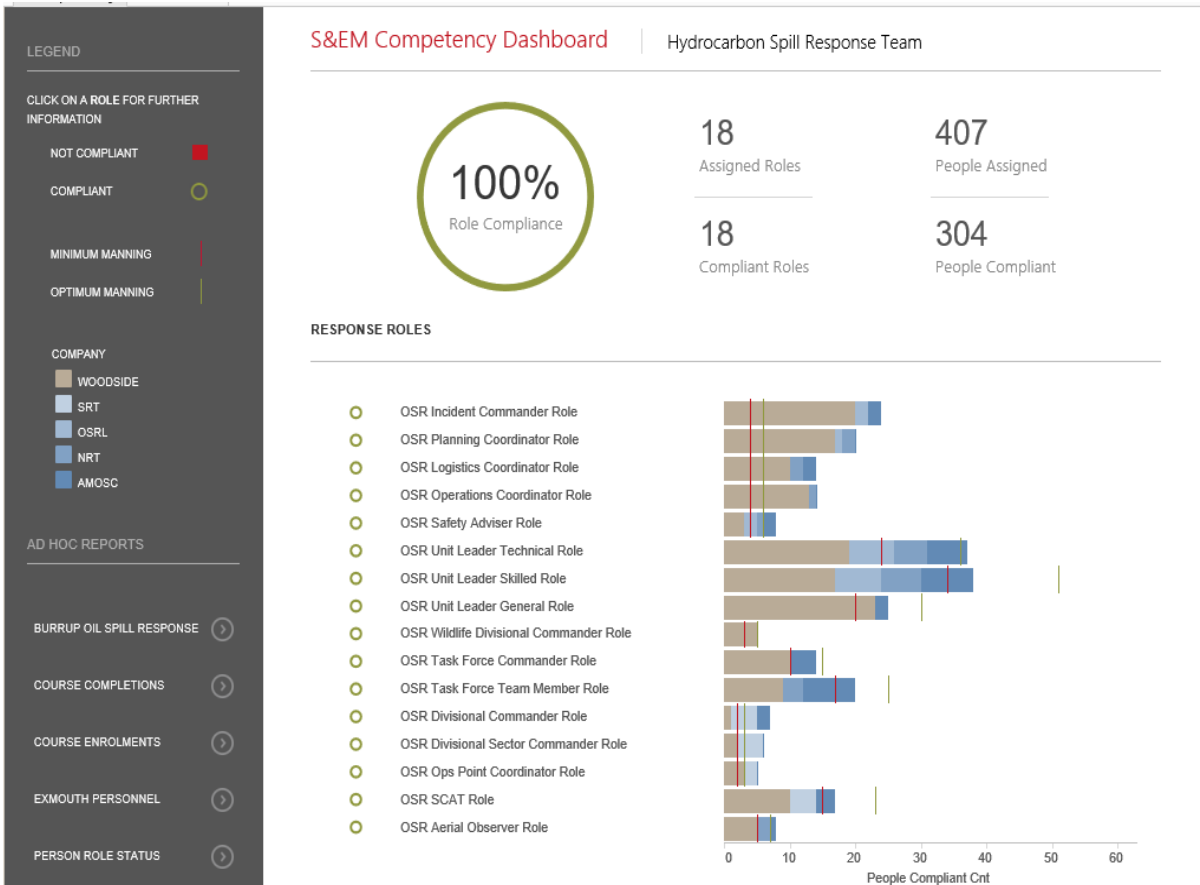


Figure 5-2: Example screenshot of the HSP competency dashboard

The Dashboard is one of Woodside’s key means of monitoring its readiness to respond. It supports Woodside in meeting the requirements of the environmental performance standard that relate to filling certain response roles.

Figure 5-3 shows deeper dive into the Ops Point Coordinator role and the training modules required to show competence.

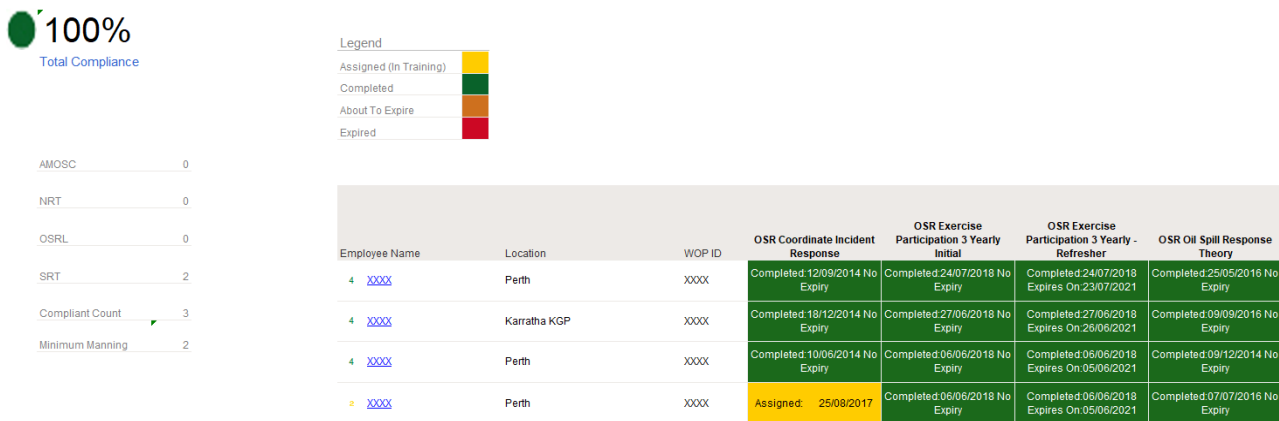


Figure 5-3: Example screenshot for the Ops Point Coordinator role

3. The Hydrocarbon Spill Preparedness ICE Assurance Process

The Hydrocarbon Spill Response Team has developed a Hydrocarbon Spill Preparedness and Response Internal Control Environment (ICE) process to align and feed into the Woodside Management System Assurance process for hydrocarbon spill. The process tracks compliance over four key control areas:

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- a) **Plans** – Confirms all plans (including: Oil Pollution Emergency Arrangements, first strike plans, operational plans, support plans and tactical response plans) are current and in line with regulatory and internal requirements.
- b) **Competency** – Confirms the competency dashboard is up to date and there are the minimum competency numbers across CIMT, CMT and hydrocarbon spill response roles. The hydrocarbon spill training plan and exercise schedule, including testing of arrangements is also tracked. The Testing of Arrangements (TOA) register tracks the testing of all hydrocarbon spill response arrangements, key contracts and agreements in place with internal and external parties to ensure compliance.
- c) **Capability** – Tracks and monitors capability that could be required in a hydrocarbon incident, including: integrated fleet⁷ vessel schedule, dispersant availability, rig/vessels monitoring, equipment stockpiles, tracking buoy locations and the CIMT duty roster.
- d) **Compliance and Assurance** – Confirms all regulator inspection outcomes are actioned and closed out, the global legislation register is up to date and that the key assurance components are tracked and managed. Assurance activities (including Audits) conducted on memberships with key Oil Spill Response Organisations (OSROs) including AMOSC and OSRL are also tracked and recorded in the ICE.

The ICE assurance process records how each commitment listed in the performance tables above is managed to ensure ongoing compliance monitoring. The level of compliance can be reviewed in real time and is reported on a monthly basis through the S&EM Function.

The completion of the assurance checks (over and above the ICE process) is also applied via the Woodside Integrated Risk and Compliance System (WiRCs) and subject to the requirements of Woodside's Provide Assurance Procedure.

4. The Hydrocarbon Spill Preparedness and Response Procedure

This procedure sets out how to plan and prepare for a liquid hydrocarbon spill to the marine environment.

This procedure details the:

- Requirement for an Oil Pollution Emergency Plan (OPEP) to be developed, maintained, reviewed, and approved by appropriate regulators (where applicable) including:
 - Defining how spill scenarios are developed on an activity specific basis
 - Developing and maintaining all hydrocarbon spill related plans
 - Ensuring the ongoing maintenance of training and competency for personnel
 - Developing the testing of spill response arrangements
 - Maintaining access to identified equipment and personnel.
- Planning for hydrocarbon spill response preparedness
- Accountabilities for hydrocarbon spill response preparedness
- Spill training requirements
- Requirements for spill exercising / testing of spill response arrangements
- Spill equipment and services requirements.

The procedure also details the roles and responsibilities of the dedicated Woodside Hydrocarbon Spill Preparedness team. This team is responsible for:

- Assuring that Woodside hydrocarbon spill responders meet competency requirements.

⁷ The Integrated fleet consists of vessels from multiple operators that have been contracted to Woodside to undertake a number of duties including hydrocarbon spill response

- Establishing the competency requirements, annual training schedule and a training register of trained personnel.
- Establishing and maintaining the total numbers of trained personnel required to provide an effective response to any hydrocarbon spill incident.
- Ensuring equipment and services contracts are maintained
- Establishing OPEPs
- Establishing OPEAs
- Priority response receptor determination
- ALARP determination
- Ensuring compliance and assurance is undertaken in accordance with external and internal requirements

6 ALARP EVALUATION

This Section should be read in conjunction with Section 5 which is the capability planned for this activity.

6.1 Operational Monitoring – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5. Those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.1.1 Operational Monitoring – Control Measure Options Analysis

6.1.1.1 Alternative Control Measures

Alternative Control Measures considered					
<i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Aerostat (or similar inflatable observation platform) for localised aerial surveillance.	Lead time to Aerostat surveillance is disproportionate to the environmental benefit. The system also provides a very limited field of visibility around the vessel it is deployed from.	Long lead time to access (>10 days). Each system would require an operator to interpret data and direct vessels accordingly. Requires multiple systems for shoreline use.	Purchase cost per system approximately \$300,000.	This option is not adopted as the minimal environmental benefit gained is disproportionate to the cost and complexity of its implementation.	No

6.1.1.2 Additional Control Measures

Additional Control Measures considered					
<i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional personnel trained to use systems.	Current arrangement provides an environmental benefit in the availability of trained personnel facilitating access to monitoring data used to inform all other response techniques. No improvement required.	Woodside considers no improvement can be made – all personnel in technical roles e.g. Situation Unit are trained and competent on the software systems. Personnel are trained and exercised regularly. Use of the software and systems forms part of regular work assignments and projects.	Cost for training in-house staff would be approximately \$25,000.	This option is not adopted as the current capability meets the need.	No
Additional satellite tracking buoys to enable greater area coverage.	Increased capability does not provide an environmental benefit compared to the disproportionate cost in having an additional contract in place.	Tracking buoy on location at manned facility, additional needs are met from WEL owned stocks in King Bay Support Facility (KBSF) and Exmouth or can be provided by service provider.	Cost for an additional satellite tracking buoy would be \$200 per day or \$6,000 to purchase.	This option is not adopted as the current capability meets the need, but additional units are available if required.	No
Additional trained aerial observers.	Current capability meets need. WEL has access to a pool of trained, competent observers at strategic locations to allow timely and sustainable response. Additional observers are available through current contracts with AMOSC and OSRL.	Current capability meets need. WEL has a pool of trained, competent observers at strategic locations to allow timely and sustainable response. Additional observers are available through current contracts with AMOSC and OSRL Aviation standards and guidelines confirm all aircraft crews are competent for their roles. WEL maintains a pool of trained and competent aerial observers with various home base locations to be called upon at the time of an incident. Regular audits of oil spill response organisations maintain training and competency.	Cost for additional trained aerial observers would be \$2,000 per person per day.	This option is not adopted as the current capability meets the need, but additional observers are available via response contractors if required.	No

6.1.1.3 Improved Control Measures

Improved Control Measures considered <i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster turnaround time from modelling contractor.	Improved control measure does not provide an environmental benefit compared to the disproportionate cost in having an additional contract in place.	External contractor on CIMT roster to be called as soon as required. However initial information needs to be gathered by CIMT team to request an accurate model. External contractor has person on call to respond from their own location.	Modelling service with a faster activation time would be achieved via membership of an alternative modelling service at an annual cost of \$50,000 for 24hr access plus an initial \$5,000 per modelling run.	This option is not adopted as the minimal environmental benefit gained is disproportionate to the cost and complexity of its implementation.	No
Nighttime aerial surveillance.	The risk of undertaking the aerial observations at night is disproportionate to the limited environmental benefit. The images would be of low quality and as such the variable is not adopted.	Flights will only occur when deemed safe by the pilot. The risk of night operations is disproportionate to the benefit gained, as images from sensors (IR, UV, etc). will be low quality. Flight time limitations will be adhered to.	No improvement can be made without risk to personnel health and safety and breaching Woodside's golden rules.	This option is not adopted as the safety considerations outweigh any environmental benefit gained.	No
Faster mobilisation time (for water quality monitoring).	Due to the restriction on accessing the spill location on Day one there is no environmental benefit in having vessels available from day one. The cost of having dedicated equipment and personnel is disproportionate to the environmental benefit. The availability of vessels and personnel meets the response need. Shortening the timeframes for vessel availability would require dedicated response vessels on standby in KBSF. The cost and organisational complexity of employing two dedicated response vessels (approximately \$15M/year per vessel) is considered disproportionate to the potential environmental benefit to be realised by adopting this delivery options.	Operations are not feasible on day 1 as the hydrocarbon will take time to surface, and Volatility has potential to cause health concerns within the first 24 hours of the response.	Cost for purchase of equipment approximately \$200,000. Ongoing costs per annum for cost of hire and pre-positioning for life of asset/activity would be larger than the purchase cost. Dedicated equipment and personnel, living locally and on short notice to mobilise. The cost would be approximately \$1M per annum, which is disproportionate to the incremental benefit this would provide, assets are already available on day 1. 2 integrated fleet vessels are available from day 1, however these could be tasked with other operations.	This option is not adopted as the area could not be accessed earlier due to safety considerations. Additionally, the cost and complexity of implementation outweighs the benefits.	No

6.1.2 Selected Control Measures

Following review of Alternative, Additional and Improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.2 Source Control via Vessel SOPEP – ALARP Assessment

Alternative, Additional and Improved options have been assessed against the base capability described in Section 5. Those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.2.1 Source Control via Vessel SOPEP – Control Measure Options Analysis

6.2.1.1 Alternative Control Measures

Alternative Control Measures considered					
<i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.2.1.2 Additional Control Measures

Additional Control Measures considered					
<i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical additional control measures identified					

6.2.1.3 Improved Control Measures

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical improved control measures identified					

6.2.2 Selected control measures

Following review of Alternative, Additional and Improved control measures, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.3 Shoreline Protection and Deflection – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5. Those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.3.1 Existing Capability – Shoreline Protection and Deflection

Woodside’s existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft/vehicle location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside’s direct control.

6.3.2 Response Planning: Minerva Decommissioning and Field Management – Shoreline Protection and Deflection

Planning for shoreline protection is based upon identification of Response Protection Areas (RPAs) from deterministic modelling and the logistics associated with deploying protection at these locations. The response planning scenarios indicate that this would require effective mobilisation to priority shorelines and maintenance of protection until operational monitoring confirms that the locations were no longer at risk. Woodside has identified the RPAs from modelling results provided from specific scenarios. The full list of RPAs predicted to be contacted by oil above response thresholds are detailed in Table 3-1.

The control measures selected provide capability to mobilise shoreline protection equipment by Day 2 (if required). Deterministic modelling scenarios indicate that first shoreline impact at Warrnambool Plain within 0.2 days. The existing capability can mobilise and deploy protection at RPAs within 24-48 hours, guided by the ongoing operational monitoring.

Tactical response plans exist for many of the RPAs identified. The plans identify values and sensitivities that would be protected at location. Modelling does not predict that all priority protection shorelines will be at risk of contact at the same time. Therefore, to allow for the best use of available shoreline protection and deflection resources, operational monitoring (OM01 and OM02) will inform the response, targeting RPAs where contact is predicted above response threshold levels.

Table 6-1 below outlines the capability required (number of RPAs predicted to be impacted) against the capability available (number of shoreline protection and deflection operations that can be mobilised and deployed). As can be seen from the table below. Woodside’s capability exceeds the response planning need identified for shoreline protection and deflection operations at identified RPAs by day 2.

Table 6-1: Response Planning – Shoreline Protection and Deflection

Minerva Decommissioning and Field Management – CS-02		Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month
		1	2	3	4	5	6	7	2	3	4	2	3
A	Capability Required												
A1	Number of RPAs contacted (> 100 g/m²) – CS-02	3	0	0	0	0	0	0	0	0	0	0	0
B	Capability Available (operations per day)												
B1	SPD operations available – per day (lower)	0	1	1	2	2	4	6	70	70	70	330	330
B2	SPD operations available – per day (upper)	1	2	3	4	6	8	10	84	84	84	336	336
C	Capability Gap (operations per day)												
C1	SPD operations gap – per day (lower)	3	0	0	0	0	0	0	0	0	0	0	0
C2	SPD operations gap – per day (upper)	2	0	0	0	0	0	0	0	0	0	0	0

A1 – the number of Response Protection Areas contacted by surface hydrocarbons above 100 g/m²

B1 and B2 – the upper and lower number of shoreline protection and deflection operations available (based on response planning assumptions in Section 5.3),

C1 and C2 – the gap between the upper and lower number of shoreline protection and deflection operations required in A1, A2 and A3 compared to the operations available in B1 and B2

Table 6-2: Indicative Tactical response plan, aims and methods for identified RPAs

Tactical Response Plan	Response tasks and methods
Warrnambool Plain	<p>First Task: Pre-clean of shoreline.</p> <p>Methods: Manual removal of debris to above the high tide area.</p>
	<p>Second Task: Physically close the mouth of the Hopkins River.</p> <p>Methods: Access the beach from Hopkins River Lookout. Utilise heavy plant equipment (Primary) or shore seal boom (Alternative).</p>
	<p>Third Task: Conduct assessment of impacted shoreline inside and outside the Hopkins River mouth.</p> <p>Methods: Task SCAT team to conduct assessment of the area.</p>
Aire River	<p>First Task: Pre-clean of shoreline.</p> <p>Methods: Manual removal of debris to above the high tide area.</p>
	<p>Second Task: Physically close the mouth of the Aire River.</p> <p>Methods: Access the beach from Old Coach Rd and use heavy plant equipment (Primary) or shore seal boom/sandbags (Alternative).</p>
	<p>Third Task: Conduct assessment of impacted shoreline inside and outside the Aire River estuary.</p> <p>Methods: Task SCAT team to conduct assessment of the area.</p>
Gellibrand River	<p>First Task: Pre-clean of shoreline.</p> <p>Methods: Manual removal of debris to above the high tide area.</p>

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Tactical Response Plan	Response tasks and methods
	<p>Second Task: Physically close the mouth of the Gellibrand River.</p> <p>Methods: Access the beach from Old Coach Rd and use heavy plant equipment (Primary) or shore seal boom/sandbags (Alternative).</p> <hr/> <p>Third Task: Conduct assessment of impacted shoreline inside and outside the Gellibrand River estuary.</p> <p>Methods: Task SCAT team to conduct assessment of the area.</p>
Curdies Inlet	<p>First Task: Check and confirm whether the mouth of Curdies Inlet is open to the ocean: http://www.estuarywatch.org.au/site/ccma/729 Pre-clean of shoreline.</p> <p>Methods: Manual removal of debris to above the high tide area.</p> <hr/> <p>Second Task: Physically close the mouth of the Curdies Inlet.</p> <p>Methods: Access the beach from Irvine Rd (west of inlet) or Great Ocean Road (east of inlet), depending on the status of the inlet mouth. Use heavy plant equipment (Primary) or shore seal boom/sandbags (Alternative).</p> <hr/> <p>Third Task: Conduct assessment of impacted shoreline inside and outside Curdies Inlet (Peterborough Coastal Reserve).</p> <p>Methods: Task SCAT team to conduct assessment of the area.</p>

Pre-emptive mobilisation of equipment and personnel would commence as soon as practicable prior to oil contact. Additional resources would be mobilised depending on the scale of the event to increase the length or number of shorelines being protected.

A shoreline protection and deflection response would be launched only when operational monitoring operations and modelling identify spill heading towards RPA(s).

6.3.3 Shoreline Protection and Deflection – Control Measure Options Analysis

6.3.3.1 Alternative Control Measures

Alternative Control Measures considered					
<i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Pre-position equipment at Response Protection Areas (RPAs)	Additional environmental benefit of having equipment prepositioned is considered minor. Equipment is currently available to protect RPAs and additional shorelines, within estimated minimum times until shoreline contact at RPAs, enabling mobilisation of the selected delivery options.	<p>The incremental environmental benefit associated with these delivery options is considered minor and unlikely to reduce the environmental consequence of a significant hydrocarbon release beyond the adopted delivery options. Considering the highly unlikely nature of a significant hydrocarbon release and the costs and organisational complexity associated with prepositioning and maintenance of equipment, the sacrifice is considered disproportionate to the limited environmental benefit that might be realised.</p> <p>Furthermore, these options would conflict with the mutual aid philosophy being adopted under the selected delivery options.</p> <p>The selected delivery options for shoreline protection and deflection meet the relevant objectives of this control measure and do not require prepositioned or additional equipment in Exmouth.</p>	Total cost to preposition protection/ deflection packages at each site of potential impact would be approximately A\$6,100 per package per day.	This option is not adopted as the existing capability meets the need.	No

6.3.3.2 Additional Control Measures

Additional Control Measures considered					
<i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Supplemented stockpiles of equipment in Exmouth to protect additional shorelines	<p>Additional equipment would increase the number of receptor areas that could be protected from hydrocarbon contact. However, current availability of personnel and equipment is capable of protecting up to 30 km of shoreline, commensurate with the scale and progressive nature of shoreline impact. Additional stocks would be made available from international sources if long term up scaling were necessary.</p> <p>A reduction in environmental consequence from a 'B' rating (serious long-term impacts) is unlikely to be realised as a result of having more equipment available locally.</p>	<p>The incremental environmental benefit associated with these delivery options is considered minor and unlikely to reduce the environmental consequence of a significant hydrocarbon release beyond the adopted delivery options. Considering the highly unlikely nature of a significant hydrocarbon release and the costs and organisational complexity associated with prepositioning and maintenance of equipment, the sacrifice is considered disproportionate to the limited environmental benefit that might be realised.</p> <p>Furthermore, these options would conflict with the mutual aid philosophy being adopted under the selected delivery options.</p> <p>The selected delivery options for shoreline protection and deflection meet the relevant objectives of this control measure and do not require prepositioned or additional equipment in Exmouth.</p>	Total cost for purchase supplemental protection and deflection equipment would be approximately A\$455,000 per package.	This option is not adopted as the existing capability meets the need.	No

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional trained personnel	The level of training and competency of the response personnel allows the shoreline protection and deflection operation is delivered with minimum secondary impact to the environment. Training additional personnel does not provide an increased environmental benefit.	Additional personnel required to sustain an extended response can be sourced through the Woodside <i>People & Global Capability Surge Labour Requirement Plan</i> . Additional personnel sourced from contracted OSRO's (OSRL/AMOSC) to manage other responders. Response personnel are trained and exercised regularly in shoreline response techniques and methods. All personnel involved in a response will receive a full operational/safety brief prior to commencing operations.	Additional Specialist Personnel would cost A\$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No

6.3.3.3 Improved Control Measures

Improved Control Measures considered <i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster response/mobilisation time	Modelling predicts floating or shoreline impacts at threshold on day 1 (CS-02). Initial deployment of protection and deflection operations will be available for mobilisation within 24-48 hrs of activation.	Response teams, trained personnel, contracted oil spill response service providers, government agencies and the associated mitigation equipment required to enact an initial protection and deflection response will be available for mobilisation within 24-48 hrs of activation. Additional equipment from existing stockpiles and oil spill response service providers can be on scene within 24-48 hrs.	The cost of establishing a local stockpile of new mitigation equipment (including protection and deflection boom) closer to the expected hydrocarbon stranding areas is not commensurate with the need.	This option is not adopted as the existing capability meets the need.	No

6.3.4 Selected Control Measures

Following review of alternative, additional and improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.4 Shoreline Clean-up – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5. Those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.4.1 Existing Capability – Shoreline Clean-up

Woodside’s existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft/vehicle location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside’s direct control.

6.4.2 Response planning: Minerva Decommissioning and Field Management – Shoreline Clean-up

Woodside has assessed existing capability against the WCCS and has identified that the range of techniques provide an ongoing approach to shoreline clean-up at identified RPAs. Woodside’s capability can cover all required shoreline clean-up operations for the PAP from day 3.

Modelling predicts shoreline contact at Warrnambool from day 0.2. The largest volumes ashore are at Warrnambool with approximately 187 tonnes/ m³ predicted on day 0.2. These volumes assume no treatment of floating surface oil by containment and recovery or surface dispersant application, and no shoreline protection prior to contact and so actual volumes are very likely to be lower than the assumed volumes. The full list of RPAs predicted to be contacted by oil is detailed in **Table 3-1** and relevant Tactical Response Plans available for identified RPAs are included in **Table 6-2**.

These figures have been combined into a single response planning need scenario that provides a worst-case scenario for planning purposes as outlined below. Given all other shoreline contact scenarios identified from deterministic modelling are longer time frames and/or lesser volumes, demonstration of capability against this need will enable Woodside to meet requirements for any other outcome. Woodside is satisfied that the current capability is managing risks and impacts to ALARP.

Due to the time of contact predicted shoreline clean-up and deterministic modelling predicting ongoing stranding after this peak, this response may not be as time critical compared to other response techniques and the scale will depend on the success of other techniques preventing oiling occurring. Further, the potential scale and remoteness of a response coupled with the uncertainty of which locations will be affected precludes the stockpiling or prepositioning of equipment specific to shorelines.

Woodside has identified several options which could be mobilised to achieve defined response objectives. Evaluation considers the benefit in terms of the time to respond and the scale of response made possible by each option. The evaluation of possible control measures is summarised in **Section 6.4.3**.

Table 6-3: Response Planning – Shoreline Clean-up

Shoreline Clean-up (Phase 2)	Day	Day	Day	Day	Day	Day	Day	Day	Week	Week	Week	Month	Month	Month
	1	2	3	4	5	6	7	2	3	4	2	3	4	
Oil on shoreline (from deterministic modelling) tonnes/ m ³														
Shoreline accumulation (above 100 g/m ²) – tonnes/ m ³	220	0	0	0	0	0	0	0	0	0	0	0	0	0
Oil remaining following response operations – tonnes/ m ³	220	220	44	31	22	15	11	0	0	0	0	0	0	0
A Capability Required (number of operations)														
A1 SCU operations required (lower)	22	11	2	2	1	1	1	0	0	0	0	0	0	0
A2 SCU operations required (upper)	44	22	4	3	2	2	1	0	0	0	0	0	0	0
B Capability Available (number of operations)														
B1 SCU operations available - Stage 2 - Manual (lower)	0	1	3	5	8	12	15	105	105	105	560	560	560	560
B2 SCU operations available - Stage 2 - Manual (upper)	0	2	5	8	10	15	20	140	140	140	560	560	560	560
C Capability Gap														
C1 SCU operations gap (lower)	22	10	0	0	0	0	0	0	0	0	0	0	0	0
C2 SCU operations gap (upper)	44	20	0	0	0	0	0	0	0	0	0	0	0	0

A1 and A2 – the number of Shoreline Clean-up operations required based on the hydrocarbon volumes ashore above 100 g/m²

B1 and B2 – the upper and lower number of shoreline clean-up operations available (based on response planning assumptions in Section 5.4),

C1 and C2 – the gap between the upper and lower number of shoreline clean-up operations required in A1 and A2 compared to the operations available in B1 and B2

6.4.3 Shoreline Clean-up – Control measure options analysis

6.4.3.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.4.3.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional trained personnel available	The level of training and competency of the response personnel allows the shoreline clean-up operation to be delivered with minimum secondary impact to the environment. Training additional personnel does not provide an increased environmental benefit.	Additional personnel required to sustain an extended response can be sourced through the Woodside <i>People and Global Capability Surge Labour Requirement Plan</i> . Additional personnel sourced from contracted OSROs (OSRL/AMOSC) to manage other responders. Response personnel are trained and exercised regularly in shoreline response techniques and methods. All personnel involved in a response will receive a full operational/safety brief prior to commencing operations.	Additional Specialist Personnel would cost A\$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No
Additional trained personnel deployed	Maintaining a span of control of 200 competent personnel is deemed manageable and appropriate for this activity. Additional personnel conducting clean-up activities may be able to complete the clean-up in a shorter timeframe, but modelling predicts ongoing stranding of hydrocarbons over a period of weeks. Managing a smaller, targeted response is expected to achieve an environmental benefit through ensuring the shoreline clean-up response is suitable and scalable for the shoreline substrate and sensitivity type. This will reduce the risk of increased impact from the shoreline clean-up through the presence of unnecessary personnel and equipment.	The figure of 200 personnel is broken down to include on 1-2 x trained supervisors managing 8-10 personnel/ labour hire responders. This allows for multiple operational teams to operate along the extended shoreline at different locations. Typically, an additional 30-50% of the tactical workforce is required to support ongoing operations including on-scene control, logistics, safety/ medical/ welfare and transport. Personnel on site will include members with the appropriate specialties to efficiently clean-up the shoreline. Additional personnel are available through existing contracts with oil spill response organisations, labour hire organisations and environmental panel contractors	Additional specialist personnel would cost A\$2,000 per person per day.	This option is not adopted as the existing capability meets the need.	No

6.4.3.3 Improved Control Measures

Improved Control Measures considered <i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster response/mobilisation time	Modelling predicts floating or shoreline impacts at threshold on day 1. Initial deployment of	Response teams, trained personnel, contracted oil spill response service providers,	The cost of establishing a local stockpile of new shoreline clean-up equipment closer to	This option is not adopted as the existing capability meets the need.	No

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
	protection and deflection operations will be available for mobilisation within 24-48 hrs of activation.	government agencies and the associated mitigation equipment required to enact an initial protection and deflection response will be available for mobilisation within 24-48 hrs of activation. Additional equipment from existing stockpiles and oil spill response service providers can be on scene within 24-48 hrs.	the expected hydrocarbon stranding areas is not commensurate with the need.		

6.4.4 Selected Control Measures

Following review of Alternative, Additional and Improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.5 Wildlife Response – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5. Those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.5.1 Existing Capability – Wildlife Response

Woodside’s existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft/vehicle location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside’s direct control.

6.5.2 Wildlife Response – Control Measure Options Analysis

6.5.2.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Direct contracts with service providers	This option duplicates the capability accessed through AMOSC and OSRL and would compete for the same resources. Does not provide a significant increase in environmental benefit.	These delivery options provide increased effectiveness through more direct communication and control of specialists. However, no significant net benefit is anticipated.	Duplication of capability – already subscribed to through contracts with AMOSC and OSRL	This option is not adopted as the existing capability meets the need.	No

6.5.2.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Additional wildlife treatment systems	<p>The selected delivery options provide access to call-off contracts with selected specialist providers. The agreements allows these resources to be mobilised to meet the required response objectives, commensurate with the progressive nature of environmental impact and the time available to monitor hydrocarbon plume trajectories.</p> <p>Provides response equipment and personnel within 24-48 hours. The additional cost in having a dedicated oiled wildlife response (equipment and personnel) in place is disproportionate to environmental benefit.</p> <p>These selected delivery options provide capacity to carry out an oiled wildlife response if contact is predicted; and to scale up the response if required to treat widespread contamination.</p> <p>Current capability meets the needs required and there is no additional environmental benefit in adopting the improvements.</p>	<p>Shoreline hydrocarbon contact above wildlife response threshold concentrations (>100 g/m²) is expected from day 1. Given the low likelihood of such an event occurring and that the current capability can be mobilised within 24-48 hours, the cost of implementing measures to reduce the mobilisation time is considered disproportionate to the benefit. Additionally, the offshore location of the release site allows monitoring and surveillance operations to inform RPAs at risk of contact and the potential scale of the response.</p> <p>Oiled wildlife response capacity would be addressed for open Commonwealth waters through the AMOSC arrangements, as informed by operational monitoring.</p> <p>The cost and organisational complexity of this approach is moderate, and the overall delivery effectiveness is high.</p>	Additional wildlife response resources could total A\$1,700 per operational site per day.	This option is not adopted as the existing capability meets the need.	No
Additional trained wildlife responders	Numbers of oiled wildlife are expected to be low offshore.	Current numbers meet the needs required and additional personnel are available through existing contracts with oil spill response	Additional wildlife response personnel cost A\$2,000 per person per day	This option is not adopted as the existing capability meets the need.	No

Additional Control Measures considered					
<i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
	The potential environmental benefit of training additional personnel is expected to be low.	organisations and environmental panel contractors. Additional equipment and facilities would be required to support ongoing response, depending on the scale of the event and the impact to wildlife and maybe sourced via existing contracts with OSROs. Materials for holding facilities, portable pools, enclosures and rehabilitation areas would be sourced as required.			

6.5.2.3 Improved Control Measures

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster mobilisation time for wildlife response	Response time is limited by specialist personnel mobilisation time. Current timing is sufficient for expected shoreline contact. This control measure provides increased effectiveness through faster mobilisation of specialists. However, no significant net environmental benefit is expected due to shoreline stranding times.	Pre-positioning vessels or equipment would reduce mobilisation time for oiled wildlife response activities. However, given the effectiveness of an oiled wildlife response is expected to be low, an earlier response would provide a marginal increase in environmental benefit.	Wildlife response packages to preposition at vulnerable sites identified through the deterministic modelling cost A\$700 per package per day. The cost of having dedicated equipment and personnel available to respond faster is considered disproportionate to the environmental benefit.	This option is not adopted as the existing capability meets the need.	No

6.5.3 Selected control measures

Following review of Alternative, Additional and Improved control measures, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.6 Waste Management – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5. Those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.6.1 Existing Capability – Waste Management

Woodside's existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/vessel/aircraft/vehicle location and duties, survey or classification society inspection requirements, overflight/port/quarantine permits and inspections, crew/pilot duty and fatigue hours, refuelling/re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside's direct control.

6.6.2 Waste Management – Control Measure Options Analysis

6.6.2.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical alternative control measures identified					

6.6.2.2 Additional Control Measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Increased waste storage capability	The procurement of waste storage equipment options on the day of the event will allow immediate response and storage of collected waste. The environmental benefit of immediate waste storage is to reduce ecological consequence by safely securing waste, allowing continuous response operations to occur.	Access to Woodside's waste service provider's storage options provides the resources required to store and transport sufficient waste to meet the need. Access to waste contractors existing facilities enables waste to be stockpiled and gradually processed within the regional waste handling facilities. Additional temporary storage equipment is available through existing contract and arrangements with AMOSC/ OSRL. Existing arrangements meet identified need for the PAP.	Cost for increased waste disposal capability would be approximately A\$1,300 per m ³ . Cost for increased onshore temporary waste storage capability would be approximately A\$40 per unit per day.	This option is not adopted as the existing capability meets the need.	No

6.6.2.3 Improved Control Measures

Improved Control Measures considered <i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Faster response time	The access to Woodside's waste service provider's storage options provides the resources to store and transport waste, permitting the wastes to be stockpiled and gradually processed within the regional waste handling facilities. Bulk transport to the waste service provider's licensed waste management facilities would be undertaken via controlled-waste-licensed	Woodside has access to stockpiles of temporary waste storage equipment and equipment in the region through existing contracts and arrangements.	The incremental benefit of having a dedicated local Woodside-owned stockpile of waste equipment and transport is considered minor and cost is considered disproportionate to the benefit gained given predicted shoreline contact times.	This option is not adopted as the existing capability meets the need.	No

Improved Control Measures considered					
<i>Improved control measures are evaluated for improvements they could bring to the effectiveness of adopted control measures in terms of functionality, availability, reliability, survivability, independence and compatibility</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
	<p>vehicles and in accordance with State waste regulations.</p> <p>The environmental benefit from successful waste storage will reduce pressure on the treatment and disposal facilities reducing ecological consequences by safely securing waste. In addition, waste storage and transport will allow continuous response operations to occur.</p> <p>This delivery option would increase known available storage, eliminating the risk of additional resources not being available at the time of the event. However, the environmental benefit of Woodside procuring additional waste storage is considered minor as the risk of additional storage not being available at the time of the event is considered low and existing arrangements provide adequate storage to support the response.</p>				

6.6.3 Selected control measures

Following review of Alternative, Additional and Improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - None selected
- Improved
 - None selected

6.7 Scientific Monitoring – ALARP Assessment

Alternative, Additional and Improved options have been identified and assessed against the base capability described in Section 5. Those that have been selected for implementation highlighted in green. Items highlighted in red have been considered and rejected on the basis that they are not feasible, the costs are disproportionate to the environmental benefit, and/or the option is not reasonably practical. Control measures where there is not a clear justification for their inclusion or exclusion may be subject to a detailed ALARP assessment.

6.7.1 Existing Capability – Scientific Monitoring

Woodside's existing level of capability is based on internal and third-party resources that are available 24 hours, 7 days per week. The capability presented below is displayed as ranges to incorporate operational factors such as weather, crew/ vessel/ aircraft/ vehicle location and duties, survey or classification society inspection requirements, overflight/ port/ quarantine permits and inspections, crew/ pilot duty and fatigue hours, refuelling/ re-stocking provisions, and other similar logistic and operational limitation that are beyond Woodside's direct control.

6.7.2 Scientific Monitoring – Control Measure Options Analysis

6.7.2.1 Alternative Control Measures

Alternative Control Measures considered <i>Alternative, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Analytical laboratory facilities closer to the likely spill affected area	The environmental consideration of having access to suitable laboratory facilities locally to carry out the hydrocarbon analysis would provide faster turnaround in reporting of results only by a matter of days (as per the time to transport samples to laboratories).	SM01 water quality monitoring requires water samples to be transported to NATA-rated laboratories in Perth or over to the East coast. Consider the benefit of laboratory access and transportation times to deliver water samples and complete lab analysis. There is a time lag from collection of water samples to being in receipt of results and confirming hydrocarbon contact to sensitive receptors).	Laboratory facilities and staff available at locations closer to the spill affected area can reduce reporting times only to a moderate degree (days) with associated high costs of maintaining capability do not improve the environmental benefit.	This control measure is not adopted as the costs and complexity are considered disproportionate to any environmental benefit that might be realised.	No
Dedicated contracted SMP vessel (exclusive to Woodside)	Would provide faster mobilisation time of scientific monitoring resources, however, the environmental benefit associated with faster mobilisation time would be minor compared to selected options.	Chartering and equipping additional vessels on standby for scientific monitoring has been considered. The option is reasonably practicable but the sacrifice (charter costs and organisational complexity) is significant, particularly when compared with the anticipated availability of vessels and resources within in the required timeframes. The selected delivery provides capability to meet the scientific monitoring objectives, including collection of pre-emptive data where baseline knowledge gaps are identified for receptor locations where spill predictions of time to contact are >10 days. The effectiveness of this alternative control (weather dependency, availability and survivability) is rated as very low	The cost and organisational complexity of employing a dedicated response vessel is considered disproportionate to the potential environmental benefit by adopting these delivery options.	This control measure is not adopted as the costs and complexity are considered disproportionate to any environmental benefit that might be realised.	No

6.7.2.2 Additional control measures

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
Determine baseline data needs and provide implementation plan in the event	Address resourcing needs to collect post spill (pre-contact) baseline data as spill expands in the event of a loss of well control from the PAP activities.	As part of Woodside's Scientific Monitoring Program, the following are considered and incorporated into the spill response approach and the SMP Standby Service contract. <ul style="list-style-type: none"> Woodside rely on existing environmental baseline for receptors which have 	No cost associated with baseline for SM01.	This control measure is adopted as the costs and complexity are not disproportionate to any environmental benefit that might be realised.	Yes

Additional Control Measures considered <i>Additional control measures are evaluated in terms of them reducing an environmental impact or an environmental risk when added to the existing suite of control measures</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
of an unplanned hydrocarbon release		predicted hydrocarbon contact (above environment threshold) <10 days and acquiring pre-emptive data in the event of a loss of well control from the PAP activities based on receptors predicted to have hydrocarbon contact >10 days. <ul style="list-style-type: none"> • Provide appropriate baseline for key receptors for all geographic locations that are potentially impacted <10 days of spill event. • Address resourcing needs to collect pre-emptive baseline as spill expands in the event of a spill of MDO from the PAP activities. • For SM01 pre-emptive baseline is not required as marine water quality is assumed to be pristine. 			

6.7.2.3 Improved Control Measures considered

Improved Control Measures considered <i>Improved, including potentially more effective and/or novel control measures are evaluated as replacements for an adopted control</i>					
Option considered	Environmental consideration	Feasibility	Approximate Cost	Assessment conclusions	Implemented
No reasonably practical improved control measures identified					

6.7.3 Selected Control Measures

Following review of Alternative, Additional and Improved control measures as outlined above, the following controls were selected for implementation for the PAP.

- Alternative
 - None selected
- Additional
 - Determine baseline data needs and provide implementation plan in the event of an unplanned hydrocarbon release
- Improved
 - None selected

6.7.4 Operational Plan

Key actions from the Scientific Monitoring Program Operational Plan for implementing the response are outlined in **Table 6-4**.

Table 6-4: Scientific monitoring program operational plan actions

Responsibility	Action
Activation	
CIMT Planning (CIMT Planning – Environment Unit)	Mobilises SMP Lead/Manager and SMP Coordinator to the CIMT Planning function.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager and SMP Coordinator)	Constantly assesses all outputs from OM01, OM02 and OM03 (Annex B) to determine receptor locations and receptors at risk. Confirm sensitive receptors likely to be exposed to hydrocarbons, timeframes to specific receptor locations and which SMPs are triggered. Review baseline data for receptors at risk.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager and SMP Coordinator)	SMP co-ordinator stands up SMP Standby contractor. Stands up subject matter experts, if required.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	Establish if, and where, pre-contact baseline data acquisition is required. Determines practicable baseline acquisition program based on predicted timescales to contact and anticipated SMP mobilisation times. Determines scope for preliminary post-contact surveys during the Response Phase. Determines which SMP activities are required at each location based on the identified receptor sensitivities.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	If response phase data acquisition is required, stand up the contractor SMP teams for data acquisition and instruct them to standby awaiting further details for mobilisation from the CIMT.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	SMP standby contractor, to prepare the Field Implementation Plan. Prepare and obtain sign-off of the Response Phase SMP work plan and Field Implementation Plan. Update the IAP.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	Liaise with CIMT Logistics, and determine the status and availability of aircraft, vessels and road transportation available to transport survey personnel and equipment to point of departure. Engage with SMP standby contractor, SMP Manager and CIMT Logistics to establish mobilisation plan, secure logistics resources and establish ongoing logistical support operations, including:

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Responsibility	Action
Activation	
	<ul style="list-style-type: none"> • Vessels, vehicles and other logistics resources • Vessel fit-out specifications (as • Detailed in the Scientific Monitoring Program Operational Plan • Equipment storage and pick-up locations • Personnel pick-up/airport departure locations • Ports of departure • Land based operational centres and forward operations bases, accommodation and food requirements.
CIMT Planning (CIMT Planning – Environment Unit) (SMP Lead/Manager, SMP Coordinator, SMP Standby contractor)	Confirm communications procedures between Woodside SMP team, SMP standby contractor, SMP Team Leads and Operations Point Coordinator.
Mobilisation	
CIMT Logistics	Engage vessels and vehicles and arrange fitting out as specified by the mobilisation Plan Confirm vessel departure windows and communicate with the Service Provider’s SMP Manager. Agree SMP mobilisation timeline and induction procedures with the Division and Sector Command Point(s).
CIMT Logistics	Coordinate with SMP standby contractor to mobilise teams and equipment according to the logistics plan and Sector induction procedures.
SMP Survey Team Leads	SMP Survey Team Leader(s) coordinate on-ground/on-vessel mobilisations and support services with the Sector Command point(s).

6.7.5 ALARP and Acceptability Summary

ALARP and Acceptability Summary		
Scientific Monitoring		
ALARP Summary	X	All known reasonably practicable control measures have been adopted
	X	No additional, alternative and improved control measures would provide further benefit
		No reasonably practical additional, alternative, and/or improved control measure exists
<p>The resulting scientific monitoring capability has been assessed against the credible spill scenarios. The range of techniques provide an ongoing approach to monitoring operations to assess and evaluate the scale and extent of impacts.</p> <p>All known reasonably practicable control measures have been adopted with the cost and organisational complexity of these options determined to be Moderate and the overall delivery effectiveness considered Medium. The SMP's main objectives can be met, with the addition of one alternative control measures to provide further benefit.</p>		
Acceptability Summary	<ul style="list-style-type: none"> • The control measures selected for implementation manage the potential impacts and risks to ALARP. • In the event of a hydrocarbon spill for the PAP, the control measures selected, meet or exceed the requirements of Woodside Management System and industry best-practice. • Scientific Monitoring control and activities are compliant with relevant environmental legislation and regulations, including the EPBC Act. • Throughout the PAP, relevant Australian standards and codes of practice will be followed to evaluate the impacts from a loss of well control. • Consultation undertaken for the PAP did not receive feedback regarding concerns for Scientific Monitoring activities in response to a hydrocarbon spill. • The level of impact and risk to the environment has been considered with regards to the principles of ESD, and risks and impacts from a range of identified scenarios were assessed in detail. The control measures described consider the conservation of biological and ecological diversity, through both the selection of control measures and the management of their performance. The control measures have been developed to account for credible case scenarios, and uncertainty has not been used as a reason for postponing control measures. 	
<p>On the basis from the impact assessment above and in Section 7 of the EP Woodside considers the adopted controls discussed manage the impacts and risks associated with implementing scientific monitoring activities to a level that is ALARP and acceptable.</p>		

7 ENVIRONMENTAL RISK ASSESSMENT OF SELECTED RESPONSE TECHNIQUES

The implementation of response techniques may modify the impacts and risks identified in the EP and response activities can introduce additional impacts and risks from response operations themselves. Therefore, it is necessary to complete an assessment to ensure these impacts and risks have been considered and specific measures are put in place to continually review and manage these further impacts and risks to ALARP and Acceptable levels. A simplified assessment process has been used to complete this task which covers the identification, analysis, evaluation and treatment of impacts and risks introduced by responding to the event.

7.1 Identification of impacts and risks from implementing response techniques

Each of the control measures can modify the impacts and risks identified in the EP. These impacts and risks have been previously assessed within the scope of the EP. Refer to the EP for details regarding how these risks are being managed. They are not discussed further in this document.

- Atmospheric emissions
- Routine and non-routine discharges
- Physical presence, proximity to other vessels (shipping and fisheries)
- Routine acoustic emissions vessels
- Lighting for night work/navigational safety
- Invasive marine species
- Collision with marine fauna
- Disturbance to Seabed

Additional impacts and risks associated with the control measures not included within the scope of the EP:

- Vessel operations and anchoring
- Presence of personnel on the shoreline
- Human presence (manual cleaning)
- Vegetation cutting
- Additional stress or injury caused to wildlife
- Secondary contamination from the management of waste

7.2 Analysis of impacts and risks from implementing response techniques

The table below compares the adopted control measures for this activity against the environmental values that can be affected when they are implemented.

Table 7-1: Analysis of risks and impacts

	Environmental Value						
	Soil and Groundwater	Marine Sediment Quality	Water Quality	Air Quality	Ecosystems/Habitat	Species	Socio-Economic
Operational monitoring		✓	✓		✓	✓	
Source control		✓	✓	✓	✓	✓	✓
Shoreline protection and deflection	✓	✓	✓		✓	✓	✓
Shoreline clean-up	✓	✓	✓		✓	✓	✓
Oiled wildlife					✓	✓	
Scientific monitoring	✓	✓	✓	✓	✓	✓	✓
Waste management	✓			✓	✓	✓	✓

7.3 Evaluation of impacts and risks from implementing response techniques

Vessel operations and anchoring

Typical booms used in shoreline protection operations are designed to float, meaning that fauna capable of diving, such as cetaceans, marine turtles and sea snakes can readily avoid contact with the boom. Impacts to species that inhabit the water column such as sharks, rays and fish are not expected. Additionally, some fauna, such as cetaceans, are likely to detect and avoid the spill area, and are not expected to be present in the proximity of containment and recovery operations.

During the implementation of response techniques, where water depths allow, it is possible that response vessels will be required to anchor (e.g. during shoreline protection and surveys). The use of vessel anchoring will be minimal and likely to occur when the impacted shoreline is inaccessible via road. Anchoring in the nearshore environment of sensitive receptor locations will have the potential to impact coral reef, seagrass beds and other benthic communities in these areas. Recovery of benthic communities from anchor damage depends on the size of anchor and frequency of anchoring. Impacts would be highly localised (restricted to the footprint of the vessel anchor and chain) and temporary, with full recovery expected.

Presence of personnel on the shoreline

Presence of personnel on the shoreline during shoreline operations could potentially result in disturbance to wildlife and habitats. During the implementation of response techniques, it is possible that personnel may have minimal, localised impacts on habitats, wildlife and coastlines. The impacts associated with human presence on shorelines during shoreline surveys may include:

- Damage to vegetation/habitat to gain access to areas of shoreline oiling;
- Damage or disturbance to wildlife during shoreline surveys;
- Removal of surface layers of intertidal sediments (potential habitat depletion); and
- Excessive removal of substrate causing erosion and instability of localised areas of the shoreline.

Human presence

Human presence for manual clean-up operations may lead to the compaction of sediments and damage to the existing environment especially in sensitive locations such as mangroves and turtle nesting beaches. However, any impacts are expected to be localised with full recovery expected.

Waste generation

Implementing the selected response techniques will result in the generation of the following waste streams that will require management and disposal:

- Liquids (recovered oil/water mixture), collected during shoreline clean-up and oiled wildlife operations
- Semi-solids/solids (oily solids), collected during shoreline clean-up and oiled wildlife operations
- Debris (e.g. seaweed, sand, woods, plastics), collected during shoreline clean-up and oiled wildlife operations

If not managed and disposed of correctly, wastes generated during the response have the potential for secondary contamination similar to that described above, impacts to wildlife through contact with or ingestion of waste materials and contamination risks if not disposed of correctly onshore.

Cutting back vegetation could allow additional oil to penetrate the substrate and may also lead to localised habitat loss. However, any loss is expected to be localised in nature and lead to an overall net environmental benefit associated with the response by reducing exposure of wildlife to oiling.

Additional stress or injury caused to wildlife

Additional stress or injury to wildlife could be caused through the following phases of a response:

- Capturing wildlife
- Transporting wildlife
- Stabilisation of wildlife
- Cleaning and rinsing of oiled wildlife
- Rehabilitation (e.g. diet, cage size, housing density)
- Release of treated wildlife

Inefficient capture techniques have the potential to cause undue stress, exhaustion or injury to wildlife, additionally pre-emptive capture could cause undue stress and impacts to wildlife when there are uncertainties in the forecast trajectory of the spill. During the transportation and stabilisation phases there is the potential for additional thermoregulation stress on captured wildlife. Additionally, during the cleaning process, it is important personnel undertaking the tasks are familiar with the relevant techniques to manage and mitigate further injury and the removal of water proofing feathers. Finally, during the release phase it's important that wildlife is not released back into a contaminated environment.

7.4 Treatment of impacts and risks from implementing response techniques

In respect of the impacts and risks assessed the following treatment measures have been adopted. It must be recognised that this environmental assessment is seeking to identify how to maintain the level of impact and risks at levels that are ALARP and of an acceptable level rather than exploring further impact and risk reduction. It is for this reason that the treatment measures identified in this assessment will be captured in Operational Plans, Tactical Response Plans, and/or First Strike Plans.

Vessel operations and access in the nearshore environment

- If vessels are required for access, anchoring locations will be selected to minimise disturbance to benthic primary producer habitats. Where existing fixed anchoring points are not available, locations will be selected to minimise impact to nearshore benthic environments with a preference for areas of sandy seabed where they can be identified (PS 10.1, PS 13.1).
- Shallow draft vessels will be used to access remote shorelines to minimise the impacts associated with seabed disturbance on approach to the shorelines (PS 10.2, PS 13.2).

Presence of personnel on the shoreline

- Oversight by trained personnel who are aware of the risks (PS 13.5).
- Trained unit leader's brief personnel of the risks prior to operations (PS 13.6).

Human Presence

- Shoreline access route (foot, car, vessel and helicopter) with the least environmental impact identified will be selected by a specialist in SCAT operations (PS 7.3)
- Vehicular access will be restricted on dunes, turtle nesting beaches and in mangroves. (PS 13.3).

Waste generation

- All shoreline clean-up sites will be zoned and marked before clean-up operations commence to prevent secondary contamination and minimise the mixing of clean and oiled sediment and shoreline substrates (PS 11.4).
- Removal of vegetation will be limited to moderately or heavily oiled vegetation (PS 13.4)
- Teams will segregate liquid and solid wastes at the earliest opportunity (PS 19.1)

Additional stress or injury caused to wildlife

- Oiled wildlife operations (including hazing) would be implemented with advice and assistance from DEECA (PS 17.1).

8 ALARP CONCLUSION

An analysis of Alternative, Additional and Improved control measures has been undertaken to determine their reasonableness and practicability. The tables in Section 6 document the considerations made in this evaluation. Where the costs of an Alternative, Additional, or Improved control measure have been determined to be disproportionate to the environmental benefit gained from its adoption it has been rejected. Where this is not considered to be the case the control measure has been adopted.

The risks from a hydrocarbon spill have been reduced to ALARP because:

- Woodside has a significant hydrocarbon spill response capability to respond to the WCCS through the control measures identified.
- New and modified impacts and risks associated with implementing response techniques have been considered and will not increase the risks associated with the activity.
- A consideration of alternative, additional, and improved control measures identified any other control measures that delivered proportionate environmental benefit compared to the cost of adoption for this activity ensuring that:
 - All known, reasonably practicable control measures have been adopted.
 - No additional, reasonably practicable alternative and/or improved control measures would provide further environmental benefit.
 - No reasonably practical additional, alternative, and/or improved control measure exists.
- A structured process for considering alternative, additional, and improved control measures was completed for each control measure.
- The evaluation was undertaken based on the outputs of the WCCS so that the capability in place is sufficient for all other scenario from this activity.
- The likelihood of the WCCS spill has been ignored in evaluating what was reasonably practicable.

9 ACCEPTABILITY CONCLUSION

Following the ALARP evaluation process, Woodside deems the hydrocarbon spill risks and impacts have been reduced to an acceptable level by meeting the following criteria:

- Techniques are consistent with Woodside's processes and relevant internal requirements including policies, culture, processes, standards, structures and systems.
- Relevant persons/ organisations are consulted and any claims or objections are considered. Levels of risk/ impact are aligned with the uniqueness of, and/or the level of protection assigned to the environment, its sensitivity to pressures introduced by the activity, and the proximity of activities to sensitive receptors, and have been aligned with Part 3 of the EPBC Act.
- Selected control measures meet requirements of legislation and conventions to which Australia is a signatory (e.g. MARPOL, the World Heritage Convention, the Ramsar Convention, and the Biodiversity Convention etc.). In addition to these, other non-legislative requirements met include:
 - Australian IUCN reserve management principles for Commonwealth marine protected areas and bioregional marine plans.
 - National Water Quality Management Strategy and supporting guidelines for marine water quality).
 - Conditions of approval set under other legislation.
 - National and international requirements for managing pollution from ships.
 - National biosecurity requirements.
- Industry standards, best practices and widely adopted standards and other published materials have been used and referenced when defining acceptable levels. Where these are inconsistent with mandatory/ legislative regulations, explanation has been provided for the proposed deviation. Any deviation produces the same or a better level of environmental performance (or outcome).

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11 GLOSSARY AND ABBREVIATIONS

11.1 Glossary

Term	Description / Definition
ALARP	Demonstration through reasoned and supported arguments that there are no other practicable options that could reasonably be adopted to reduce risks further.
Availability	The availability of a control measure is the percentage of time that it can perform its function (operating time plus standby time) divided by the total period (whether in service or not). In other words, it is the probability that the control has not failed or is undergoing a maintenance or repair function when it needs to be used.
Control	The means by which risk from events is eliminated or minimised.
Control effectiveness	A measure of how well the control measures perform their required function.
Control measure (risk control measure)	The features that eliminate, prevent, reduce or mitigate the risk to environment associated with PAP.
Credible spill scenario	A spill considered by Woodside as representative of maximum volume and characteristics of a spill that could occur as part of the PAP.
Dependency	The degree of reliance on other systems the control measure to be able to perform its intended function.
Environment that may be affected	The summary of quantitative modelling where the marine environment could be exposed to hydrocarbons levels exceeding hydrocarbon threshold concentrations.
Incident	An event where a release of energy resulted in or had (with) the potential to cause injury, ill health, damage to the environment, damage to equipment or assets or company reputation.
Performance outcome	A statement of the overall goal or outcome to be achieved by a control measure
Performance standard	The parameters against which [risk] controls are assessed to ensure they reduce risk to ALARP. A statement of the key requirements (indicators) that the control measure has to achieve in order to perform as intended in relation to its functionality, availability, reliability, survivability and dependencies.
Preparedness	Measures taken before an incident in order to improve the effectiveness of a response
Reasonably practicable	... a computation ... made by the owner, in which the quantum of risk is placed on one scale and the sacrifice involved in the measures necessary for averting the risk (whether in money, time or trouble) [showing whether or not] that there is a gross disproportion between them ... made by the owner at a point of time anterior to the accident. (Judgment: Edwards v National Coal Board [1949])
Receptors at risk	Physical, biological and social resources identified as at risk from hydrocarbon contact using oil spill modelling predictions.
Receptor areas	Geographically referenced areas such as bays, islands, coastlines and/or protected area (WHA, Commonwealth or State marine reserve or park) containing one or more receptor type

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Term	Description / Definition
Receptor Sensitivities	This is a classification scheme to categorise receptor sensitivity to an oil spill. The Environmental Sensitivity Index (ESI) is a numerical classification of the relative sensitivity of a particular environment (particularly different shoreline types) to an oil spill. Refer to the Woodside Oil Pollution Emergency Arrangements (Australia) for more details.
Regulator	NOPSEMA are the Environment Regulator under the Environment Regulations.
Reliability	The probability that at any point in time a control measure will operate correctly for a further specified length of time.
Response technique	The key priorities and objectives to be achieved by the response plan Measures taken in response to an event to reduce or prevent adverse consequences.
Survivability	Whether or not a control measure is able to survive a potentially damaging event is relevant for all control measures that are required to function after an incident has occurred.
Threshold	Hydrocarbon threshold concentrations applied to the risk assessment to evaluate hydrocarbon spills. These are defined as: surface hydrocarbon concentration – $\geq 10 \text{ g/m}^2$, dissolved – $\geq 100 \text{ ppb}$ and entrained hydrocarbon concentrations – $\geq 500 \text{ ppb}$.
Zone of Application	The zone in which Woodside may elect to apply dispersant. The zone is determined based on a range of considerations, such as hydrocarbon characteristics, weathering and metocean conditions. The zone is a key consideration in the Net Environmental Benefit Analysis for dispersant use.

11.2 Abbreviations

Abbreviation	Meaning
ADIOS	Automated Data Inquiry for Oil Spills
ALARP	As low as reasonably practicable
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park
AMSA	Australian Maritime Safety Authority
AUV	Autonomous Underwater Vehicle
BAOAC	Bonn Agreement Oil Appearance Code
BOP	Blowout Preventer
cST	Centistokes
CIMT	Corporate Incident Management Team
DEECA	Department of Energy, Environment and Climate Action
DELWP	Department of Environment, Land Water and Planning (now DEECA)
DJPR	Department of Jobs, Precincts and the Regions (now DJSIR)
DJSIR	Department of Jobs, Skills, Industry and Regions (formerly DJPR)
DM	Duty Manager
EMBA	Environment that May Be Affected
EMSA	European Maritime Safety Agency
EP	Environment Plan
Environment Regulations	Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009
ESI	Environmental Sensitivity Index
ESD	Emergency Shut Down
ESP	Environmental Services Panel
FPSO	Floating Production Storage Offloading
FSP	First Strike Plan
GIS	Geographic Information System
GPS	Global Positioning System
HSP	Hydrocarbon Spill Preparedness
IAP	Incident Action Plan
IBRA	Interim Biogeographic Regionalisation for Australia
IC	Incident Commander
IMT	Incident Management Team
IPIECA	International Petroleum Industry Environment Conservation Association
ITOPF	International Tanker Owners Pollution Federation
IUCN	International Union for Conservation of Nature
KBSF	King Bay Supply Facility

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Abbreviation	Meaning
KSAT	Kongsberg Satellite
MODU	Mobile Offshore Drilling Unit
MoU	Memorandum of Understanding
NEBA	Net Environmental Benefit Analysis
NOAA	National Oceanic and Atmospheric Administration
NRT	National Response Team
OILMAP	Oil Spill Model and Response System
OPEA	Oil Pollution Emergency Arrangements
OPEP	Oil Pollution Emergency Plan
OPGGSA	Offshore Petroleum and Greenhouse Gas Storage Act
OSRL	Oil Spill Response Limited
OSTM	Oil Spill Trajectory Modelling
OWR	Oiled Wildlife Response
OWRP	Oiled Wildlife Response Plan
PAP	Petroleum Activities Program
PEARLS	People, Environment, Asset, Reputation, Livelihood and Services
PBA	Pre-emptive Baseline Areas
PPA	Priority Protection Area
PPB	Parts per billion
PPM	Parts per million
ROV	Remotely Operated Vehicle(s)
RPA	Response Protection Area
SCAT	Shoreline Contamination Assessment Techniques
SIMAP	Integrated Oil Spill Impact Model System
SSDI	Subsea Dispersant Injection
SFRT	Subsea First Response Toolkit
SMP	Scientific monitoring program
SOP	Standard Operating Procedure
TRP	Tactical Response Plan
UAS	Unmanned Aerial Systems
UAV	Unmanned Aerial Vehicles
WHA	World Heritage Area
Woodside	Woodside Energy Limited
WCC	Woodside Communication Centre
WWCI	Wild Well Control Inc
WCCS	Worst Case Credible Scenario
ZoA	Zone of Application

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ANNEX A: NET ENVIRONMENTAL BENEFIT ANALYSIS DETAILED OUTCOMES

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A NEBA has been conducted to assess the net environmental benefit of different response techniques to selected receptors in the event of an oil spill from the PAP for CS-02. The complete list of potential receptor locations within the EMBA within the PAP is included in Section 8 of the EP.

The locations utilised for the NEBA were limited to the identified RPAs of the PAP identified from modelling (see Section 3 for outline of selection). These include receptors which have potential for the following:

- Surface contact (>50 g/m²)
- Shoreline accumulation (>100 g/m²) at any time
- Entrained contact (>100 ppb) within 14 days

The detailed NEBA assessment outcomes are shown below.

Table A-1: NEBA assessment technique recommendations for MDO (CS-02)

Receptor	Operational Monitoring	Containment and recovery	Dispersant application: sub-sea	Dispersant application: > 20 m water depth and > 10 km from shore/reefs	Shoreline protection	Shoreline clean-up (manual)	Shoreline clean-up (mechanical)	Shoreline clean-up (chemical)	Oiled wildlife response	In situ burning	Mechanical dispersion	Source control via vessel SOPEP
Warrnambool Plain	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No	Yes
Otway Ranges	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No	Yes
Otway Plain	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No	Yes
The Arches*	Yes	No	No	No	No	No	No	No	No	No	No	Yes
Twelve Apostles*	Yes	No	No	No	No	No	No	No	No	No	No	Yes
Apollo*	Yes	No	No	No	No	No	No	No	No	No	No	Yes
Otway*	Yes	No	No	No	No	No	No	No	No	No	No	Yes
Central Victoria*	Yes	No	No	No	No	No	No	No	No	No	No	Yes
Central Bass Strait*	Yes	No	No	No	No	No	No	No	No	No	No	Yes

* Entrained contact only

Overall assessment

Sensitive receptor (sites identified in EP)	Operational Monitoring	Containment and recovery	Dispersant application: sub-sea	Dispersant application: > 20 m water depth and > 10 km from shore/reefs	Shoreline protection	Shoreline clean-up (manual)	Shoreline clean-up (mechanical)	Shoreline clean-up (chemical)	Oiled wildlife response	In situ burning	Mechanical dispersion	Source control via vessel SOPEP
Is this response Practicable?	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No	Yes
NEBA identifies response potentially of net environmental benefit?	Yes	No	No	No	Yes	Yes	Yes	No	Yes	No	No	Yes

NEBA Impact Ranking Classification Guidance

To reduce variability between assessments, the following ranking descriptions have been devised to guide the workshop process:

		Degree of impact ⁸		Potential duration of impact	Equivalent Woodside Corporate Risk Matrix Consequence Level
Positive	3P	Major	Likely to prevent: <ul style="list-style-type: none"> behavioural impact to biological receptors behavioural impact to socio-economic receptors e.g. changes to day-to-day business operations, public opinion/behaviours (e.g. avoidance of amenities such as beaches) or regulatory designations. 	Decrease in duration of impact by > 5 years	N/A
	2P	Moderate	Likely to prevent: <ul style="list-style-type: none"> significant impact to a single phase of reproductive cycle of biological receptors detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors. 	Decrease in duration of impact by 1–5 years	N/A
	1P	Minor	Likely to prevent impacts on: <ul style="list-style-type: none"> significant proportion of population or breeding stages of biological receptors socio-economic receptors such as: <ul style="list-style-type: none"> significant impact to the sensitivity of protective designation; or significant and long-term impact to business/industry. 	Decrease in duration of impact by several seasons (< 1 year)	N/A
	0	Non-mitigated spill impact	No detectable difference to unmitigated spill scenario.		
Negative	1N	Minor	Likely to result in: <ul style="list-style-type: none"> behavioural impact to biological receptors behavioural impact to socio-economic receptors e.g. changes to day-to-day business operations, public opinion/behaviours (e.g. avoidance of amenities such as beaches), or regulatory designations. 	Increase in duration of impact by several seasons (< 1 year)	Increase in risk by one sub-category, without changing category (e.g. Minor (E) to Minor (D))
	2N	Moderate	Likely to result in: <ul style="list-style-type: none"> significant impact to a single phase of reproductive cycle for biological receptors; or detectable financial impact, either directly (e.g. loss of income) or indirectly (e.g. via public perception), for socio-economic receptors. This level of negative impact is recoverable and unlikely to result in closure of business/industry in the region. 	Increase in duration of impact by 1–5 years	Increase in risk by one category (e.g. Minor (D) to Moderate (C or B))
	3N	Major	Likely to result in impacts on: <ul style="list-style-type: none"> significant proportion of population or breeding stages of biological receptors socio-economic receptors resulting in either: <ul style="list-style-type: none"> significant impact to the sensitivity of protective designation; or significant and long-term impact to business/industry. 	Increase in duration of impact by > 5 years or unrecoverable	Increase in risk by two categories (e.g. Minor (E) to Major (A))

⁸ NOTE: the maximum likely impact should be considered; for example, if a spill were to directly impact the behaviour that results in an impact to reproduction and/or the breeding population (such as fish failing to aggregate to spawn), then the score should be a 2 or 3 rather than a 1. Similarly, if a change in behaviour resulted in an increased risk of mortality of a population, then it should be scored as a 2 or 3

ANNEX B: OPERATIONAL MONITORING ACTIVATION AND TERMINATION CRITERIA

Table B-1: Operational monitoring objectives, triggers and termination criteria

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan – 01 (OM01)</p> <p>Predictive Modelling of Hydrocarbons to Assess Resources at Risk</p>	<p>OM01 focuses on the conditions that have prevailed since a spill commenced, as well as those that are forecasted in the short term (1–3 days ahead) and longer term. OM01 utilises computer-based forecasting methods to predict hydrocarbon spill movement and guide the management and execution of spill response operations to maximise the protection of environmental resources at risk.</p> <p>The objectives of OM01 are to:</p> <ul style="list-style-type: none"> • Provide forecasting of the movement and weathering of spilled hydrocarbons • Identify resources that are potentially at risk of contamination • Provide simulations showing the outcome of alternative response options (booming patterns etc.) to inform on-going Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options to reduce risks to ALARP 	<p>OM01 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The criteria for the termination of OM01 are:</p> <ul style="list-style-type: none"> • The hydrocarbon discharge has ceased and no further surface oil is visible • Response activities have ceased • Hydrocarbon spill modelling (as verified by OM02 surveillance observations) predicts no additional natural resources will be impacted

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan – 02 (OM02)</p> <p>Surveillance and reconnaissance to detect hydrocarbons and resources at risk</p>	<ul style="list-style-type: none"> • OM02 aims to provide regular, on-going hydrocarbon spill surveillance throughout a broad region, in the event of a spill. • The objectives of OM02 are: • Verify spill modelling results and recalibrate spill trajectory models (OM01). • Understand the behaviour, weathering and fate of surface hydrocarbons. • Identify environmental receptors and locations at risk or contaminated by hydrocarbons. • Inform ongoing Net Environmental Benefit Analysis (NEBA) and continually assess the efficacy of available response options to reduce risks to ALARP. • To aid in the subsequent assessment of the short- to long-term impacts and/or recovery of natural resources (assessed in SMPs) by ensuring that the visible cause and effect relationships between the hydrocarbon spill and its impacts to natural resources have been observed and recorded during the operational phase. 	<p>OM02 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The termination triggers for the OM02 are:</p> <ul style="list-style-type: none"> • 72 hours has elapsed since the last confirmed observation of surface hydrocarbons. • Latest hydrocarbon spill modelling results (OM01) do not predict surface exposures at visible levels.
<p>Operational Monitoring Operational Plan – 03 (OM03)</p> <p>Monitoring of hydrocarbon presence, properties, behaviour and weathering in water</p>	<p>OM03 will measure surface, entrained and dissolved hydrocarbons in the water column to inform decision-making for spill response activities.</p> <p>The specific objectives of OM03 are as follows:</p> <ul style="list-style-type: none"> • Detect and monitor for the presence, quantity, properties, behaviour and weathering of surface, entrained and dissolved hydrocarbons. • Verify predictions made by OM01 and observations made by OM02 about the presence and extent of hydrocarbon contamination. <p>Data collected in OM03 will also be used for the purpose of longer-term water quality monitoring during SM01.</p>	<p>OM03 will be triggered immediately following a level 2/3 hydrocarbon spill.</p>	<p>The criteria for the termination of OM03 are as follows:</p> <ul style="list-style-type: none"> • The hydrocarbon release has ceased. • Response activities have ceased. • Concentrations of hydrocarbons in the water are below available ANZECC/ ARMCANZ (2018) trigger values for 99% species protection.

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Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational Monitoring Operational Plan – 04 (OM04)</p> <p>Pre-emptive assessment of sensitive receptors at risk</p>	<p>OM04 aims to undertake a rapid assessment of the presence, extent and current status of shoreline sensitive receptors prior to contact from the hydrocarbon spill, by providing categorical or semi-quantitative information on the characteristics of resources at risk.</p> <p>The primary objective of OM04 is to confirm understanding of the status and characteristics of environmental resources predicted by OM01 and OM02 to be at risk, to further assist in making decisions on the selection of appropriate response actions and prioritisation of resources.</p> <p>Indirectly, qualitative/semi-quantitative pre-contact information collected by OM04 on the status of environmental resources may also aid in the verification of environmental baseline data and provide context for the assessment of environmental impacts, as determined through subsequent SMPs.</p> <p>OM04 would be undertaken in liaison with the relevant regulatory or control agency (if a Level 2/3 incident).</p>	<p>Triggers for commencing OM04 include:</p> <ul style="list-style-type: none"> • Contact of a sensitive habitat or shoreline is predicted by OM01, OM02 and/or OM03. • The pre-emptive assessment methods can be implemented before contact from hydrocarbons (once a receptor has been contacted by hydrocarbons it will be assessed under OM05). 	<p>The criteria for the termination of OM04 at any given location are:</p> <ul style="list-style-type: none"> • Locations predicted to be contacted by hydrocarbons have been contacted. • The location has not been contacted by hydrocarbons and is no longer predicted to be contacted by hydrocarbons (resources should be reallocated as appropriate).

Operational Monitoring Operational Plan	Objectives	Activation triggers	Termination criteria
<p>Operational monitoring operational plan – 05 (OM05)</p> <p>Monitoring of contaminated resources</p>	<p>OM05 aims to implement surveys to assess the condition of wildlife and habitats contacted by hydrocarbons at sensitive habitat and shoreline locations.</p> <p>The primary objectives of OM05 are:</p> <ul style="list-style-type: none"> Record evidence of oiled wildlife (mortalities, sub-lethal impacts, number, extent, location) and habitats (mortalities, sub-lethal impacts, type, extent of cover, area, hydrocarbon character, thickness, mass and content) throughout the response and clean-up at locations contacted by hydrocarbons to inform and prioritise clean-up efforts and resources, while minimising the potential impacts of these activities. <p>Indirectly, the information collected by OM05 may also support the assessment of environmental impacts, as determined through subsequent SMPs.</p> <p>OM05 would be undertaken in liaison with the relevant regulatory or control agency (if a Level 2/3 incident).</p>	<p>OM05 will be triggered when a sensitive habitat or shoreline is predicted to be contacted by hydrocarbons by OM01, OM02 and/or OM03.</p>	<p>The criteria for the termination of OM05 at any given location are:</p> <ul style="list-style-type: none"> No additional response or clean-up of wildlife or habitats is predicted. Spill response and clean-up activities have ceased. <p>OM05 survey sites established at sensitive habitat and shoreline locations will continue to be monitored during SM02.</p> <p>The formal transition from OM05 to SM02 will begin on cessation of spill response and clean-up activities.</p>

ANNEX C: OIL SPILL SCIENTIFIC MONITORING PROGRAM

Oil Spill Environmental Monitoring

The following provides some further detail on Woodside's oil spill scientific monitoring program and includes the following:

- The organisation, roles and responsibilities of the Woodside oil spill scientific monitoring team and external resourcing.
- A summary table of the ten scientific monitoring programs as per the specific focus receptor, objectives, activation triggers and termination criteria.
- Details on the oil spill environmental monitoring activation and termination decision-making processes.
- Baseline knowledge and environmental studies knowledge access via geo-spatial metadata databases.
- An outline of the reporting requirements for oil spill scientific monitoring programs.

Oil Spill Scientific Monitoring – Delivery Team Roles and Responsibilities

Woodside Oil Spill Scientific Monitoring Delivery Team

The Woodside science team are responsible for the delivery of the oil spill scientific monitoring. The roles and responsibilities of the Woodside scientific monitoring delivery team are presented in Table C-1 and the organisational structure and Corporate Incident Management Team (CIMT) linkage provided in Figure C-1.

Woodside Oil Spill Scientific monitoring program – External Resourcing

In the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors, scientific monitoring personnel and scientific equipment to implement the appropriate SMPs will be provided by SMP Standby contractor who hold a standby contract for SMP via the Woodside Environmental Services Panel (ESP). If additional resources are required other consultancy capacity within the Woodside ESP will be utilised (as needed and may extend to specialist contractors such as research agencies engaged in long-term marine monitoring programs). In consultation with the SMP Standby Contractor and/or specialist contractors, the selection, field sampling and approach of the SMPs will be determined by the nature and scale of the spill.

Table C-1: Woodside and Environmental Service Provider – Oil Spill Scientific Monitoring Program Delivery Team Key Roles and Responsibilities

Role	Location	Responsibility
Woodside Roles		
SMP Lead/Manager	Onshore	<ul style="list-style-type: none"> • Approves the SMPs activated based on operational monitoring data provided by the Planning Function • Provides advice to the CIMT in relation to scientific monitoring • Provides technical advice regarding the implementation of scientific monitoring • Approves detailed sampling plans prepared for SMPs • Directs liaison between statutory authorities, advisors and government agencies in relation to SMPs.
SMP Co-Ordinator	Onshore	<ul style="list-style-type: none"> • Activates the SMPs based on operational monitoring data provided by the Planning Function • Sits in the Planning function of the CIMT. • Liaises with other CIMT functions to deliver required logistics, resources and operational support from Woodside to support the Environmental Service Provider in delivering on the SMPs. Acts as the conduit for advice from the SMP Lead/Manager to the Environmental Service Provider • Manages the Environmental Service Provider's implementation of the SMPs • Liaises with the Environmental Service Provider on delivery of the SMPs • Arranges all contractual matters, on behalf of Woodside, associated with the Environmental Service Provider's delivery of the SMPs.
Environmental Service Provider Roles		
SMP Standby Contractor – SMP Duty Manager/Project Manager (SMP Liaison Officer)	Onshore	<ul style="list-style-type: none"> • Coordinates the delivery of the SMPs • Provides costings, schedule and progress updates for delivery of SMPs • Determines the structure of the Environmental Service Provider's team to necessitate delivery of the SMPs • Verifies that HSE Plans, detailed sampling plans and other relevant deliverables are developed and implemented for delivery of the SMPs • Directs field teams to deliver SMPs • Arranges all contractual matters, on behalf of Environmental Service Provider, associated with the delivery of the SMPs to Woodside • Manages sub-consultant delivery to Woodside • Provides required personnel and equipment to deliver the SMPs.
SMP Field Teams	Offshore – Monitoring Locations	<ul style="list-style-type: none"> • Delivers the SMPs in the field consistent with the detailed sampling plans and HSE requirements, within time and budget. • Early communication of time, budget, HSE risks associated with delivery of the SMPs to the Environmental Service Provider – Project Manager • Provides start up, progress and termination updates to the Environmental Service Provider – Project Manager (will be led in-field by a party chief).

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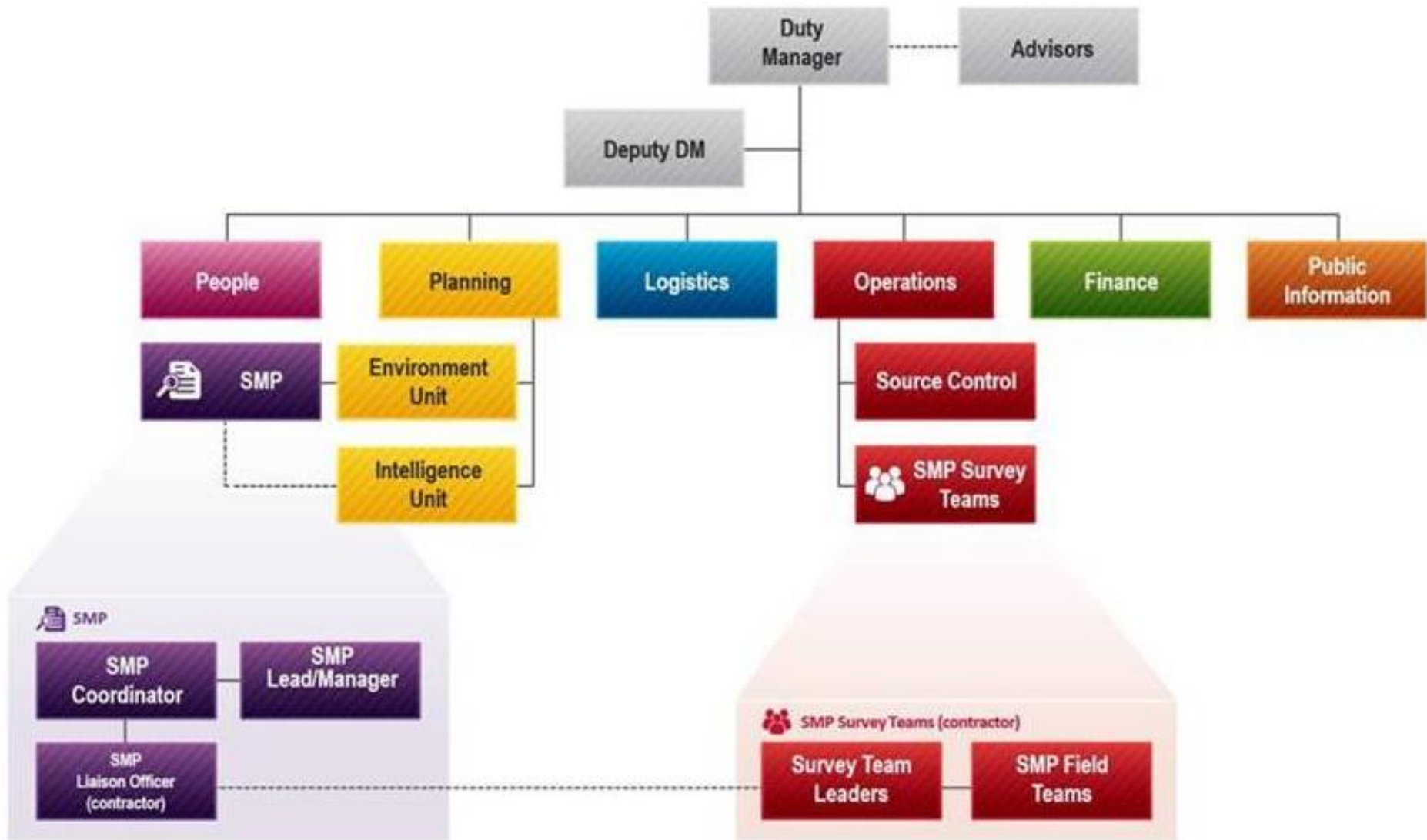


Figure C-1: Woodside Oil Spill Scientific Monitoring Program Delivery Team and Linkage to Corporate Incident Management Team (CIMT) organisational structure

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Table C-2: Oil Spill Environmental Monitoring: Scientific Monitoring Program – Objectives, Activation Triggers and Termination Criteria

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
Scientific monitoring program 1 (SM01) Assessment of hydrocarbons in marine waters	<p>SM01 will detect and monitor the presence, extent, persistence and properties of hydrocarbons in marine waters following the spill and the response.</p> <p>The specific objectives of SM01 are as follows:</p> <ul style="list-style-type: none"> Assess and document the extent, severity and persistence of hydrocarbon contamination with reference to observations made during surveillance activities and / or in-water measurements made during operational monitoring; and Provide information that may be used to interpret potential cause and effect drivers for environmental impacts recorded for sensitive receptors monitored under other SMPs. 	<p>SM01 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors</p>	<p>SM01 will be terminated when:</p> <ul style="list-style-type: none"> Operational monitoring data relating to observations and / or measurements of hydrocarbons on and in water have been compiled, analysed and reported; and The report provides details of the extent, severity and persistence of hydrocarbons which can be used for analysis of impacts recorded for sensitive receptors monitored under other SMPs. <p>SMP monitoring of sensitive receptor sites:</p> <ul style="list-style-type: none"> Concentrations of hydrocarbons in water samples are below NOPSEMA guidance note (20199) concentrations of 1 g/m² for floating, 10 ppb for entrained and dissolved; and Details of the extent, severity and persistence of hydrocarbons from concentrations recorded in water have been documented at sensitive receptor sites monitored under other SMPs.
Scientific monitoring program 2 (SM02) Assessment of the presence, quantity and character of hydrocarbons in marine sediments	<p>SM02 will detect and monitor the presence, extent, persistence and properties of hydrocarbons in marine sediments following the spill and the response.</p> <p>The specific objectives of SM02 are as follows:</p> <ul style="list-style-type: none"> Determine the extent, severity and persistence of hydrocarbons in marine sediments across selected sites where hydrocarbons were observed or recorded during operational monitoring; and Provide information that may be used to interpret potential cause and effect drivers for environmental impacts recorded for sensitive receptors monitored under other SMPs. 	<p>SM02 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p> <ul style="list-style-type: none"> Response activities have ceased; and Operational monitoring results made during the response phase indicate that shoreline, intertidal or sub-tidal sediments have been exposed to surface, entrained or dissolved hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation). 	<p>SM02 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of:</p> <ul style="list-style-type: none"> Concentrations of hydrocarbons in sediment samples are below ANZECC/ ARMCANZ (201310) sediment quality guideline values (SQGVs) for biological disturbance; and Details of the extent, severity and persistence of hydrocarbons from concentrations recorded in sediments have been documented.
Scientific monitoring program 3 (SM03) Assessment of impacts and recovery of subtidal and intertidal benthos	<p>The objectives of SM03 are:</p> <ul style="list-style-type: none"> Characterize the status of intertidal and subtidal benthic habitats and quantify any impacts to functional groups, abundance and density that may be a result of the spill; and Determine the impact of the hydrocarbon spill and subsequent recovery (including impacts associated with the implementation of response options). <p>Categories of intertidal and subtidal habitats that may be monitored include:</p> <ul style="list-style-type: none"> Coral reefs Seagrass Macro-algae Filter-feeders <p>SM03 will be supported by sediment contamination records (SM02) and characteristics of the spill derived from OMPs.</p>	<p>SM03 will be activated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of PBAs of receptor locations identified by time to hydrocarbon contact >10 days, to target receptors and sites where it is possible to acquire pre-hydrocarbon contact baseline; and Operational monitoring identified shoreline potential contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) for subtidal and intertidal benthic habitat. 	<p>SM03 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of:</p> <ul style="list-style-type: none"> Overall impacts to benthic habitats from hydrocarbon exposure have been quantified. Recovery of impacted benthic habitats has been evaluated. Agreement with relevant persons/ organisations and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.

⁹ NOPSEMA (2019) Bulletin #1 – Oil spill modelling – April 2019, <https://www.nopsema.gov.au/assets/Bulletins/A652993.pdf>

¹⁰ Simpson SL, Batley GB and Chariton AA (2013). Revision of the ANZECC/ARMCANZ Sediment Quality Guidelines. CSIRO and Water Science Report 08/07. Land and Water, pp. 132.

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
<p>Scientific monitoring program 4 (SM04) Assessment of impacts and recovery of mangroves/ saltmarsh</p>	<p>The objectives of SM04 are:</p> <ul style="list-style-type: none"> Characterize the status of mangroves (and associated salt marsh habitat) at shorelines exposed/contacted by spilled hydrocarbons; Quantify any impacts to species (abundance and density) and mangrove/saltmarsh community structure; and Determine and monitor the impact of the hydrocarbon spill and potential subsequent recovery (including impacts associated with the implementation of response options). <p>SM03 will be supported by sediment sampling undertaken in SM02 and characteristics of the spill derived from OMPs.</p>	<p>SM04 will be activated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; and Operational monitoring identified shoreline potential contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) for mangrove/saltmarsh habitat. 	<p>SM04 will be terminated once pre-spill condition is reached and agreed upon as per the SMP termination criteria process and include consideration of:</p> <ul style="list-style-type: none"> Impacts to mangrove and saltmarsh habitat from hydrocarbon exposure have been quantified. Recovery of impacted mangrove/saltmarsh habitat has been evaluated. Agreement with relevant persons/ organisations and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 5 (SM05) Assessment of impacts and recovery of seabird and shorebird populations</p>	<p>The Objectives of SM05 are to:</p> <ul style="list-style-type: none"> Collate and quantify impacts to avian wildlife from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population level; and Undertake monitoring to quantify and assess impacts of hydrocarbon exposure to seabirds and shorebird populations at targeted breeding colonies / staging sites / important coastal wetlands where hydrocarbon contact was recorded. 	<p>SM05 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented as follows:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Operational monitoring predicts shoreline contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at important bird colonies / staging sites / important coastal wetland locations; or Records of dead, oiled or injured bird species made during the hydrocarbon spill or response. 	<p>SM05 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Impacts to seabird and shorebird populations from hydrocarbon exposure have been quantified. Recovery of impacted seabird and shorebird populations has been evaluated. Agreement with relevant persons/ organisations and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 6 (SM06) Assessment of impacts and recovery of nesting marine turtle populations</p>	<p>The objectives of SM06 are to:</p> <ul style="list-style-type: none"> To quantify impacts of hydrocarbon exposure or contact on marine turtle nesting populations (including impacts associated with the implementation of response options); Collate and quantify impacts to adult and hatchling marine turtles from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population levels (including impacts associated with the implementation of response options); .and Undertake monitoring to quantify and assess impacts of hydrocarbon exposure to nesting marine turtle populations at known rookeries (including impacts associated with the implementation of response options). 	<p>SM06 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring has:</p> <ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Predicted shoreline contact of hydrocarbons (at or above 0.5 g/m² surface, 5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at known marine turtle rookery locations; or Records of dead, oiled or injured marine turtle species made during the hydrocarbon spill or response. 	<p>SM06 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Impacts to nesting marine turtle populations from hydrocarbon exposure have been quantified. Recovery of impacted nesting marine turtle populations has been evaluated. Agreement with relevant persons/ organisations and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 7 (SM07) Assessment of impacts to pinniped colonies including haul-out site populations</p>	<p>The objectives of SM07 are to:</p> <ul style="list-style-type: none"> Quantify impacts on pinniped colonies and haul-out sites as a result of hydrocarbon exposure/contact. 	<p>SM07 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring has:</p>	<p>SM07 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p>

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
	<ul style="list-style-type: none"> Collate and quantify impacts to pinniped populations from results recorded during OM02 and OM05 (such as mortalities, oiling, rescue and release counts) and undertake a desk-based assessment to infer potential impacts at species population levels. 	<ul style="list-style-type: none"> As part of a pre-emptive assessment of receptor locations identified by time to hydrocarbon contact >10 days; Identified shoreline contact of hydrocarbons ((at or above 0.5 g/m² surface, ≥5 ppb for entrained/dissolved hydrocarbons and ≥1 g/m² for shoreline accumulation) at known pinniped colony or haul-out site(s) (i.e. most northern site is the Houtman Abrolhos Islands); or Records of dead, oiled or injured pinniped species made during the hydrocarbon spill or response. 	<ul style="list-style-type: none"> Impacts to pinniped populations from hydrocarbon exposure have been quantified. Recovery of pinniped populations has been evaluated. Agreement with relevant persons/ organisations and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 8 (SM08)</p> <p>Desk-Based assessment of impacts to other non-avian marine megafauna</p>	<p>The objective of SM08 is to provide a desk-based assessment which collates the results of OM02 and OM05 where observations relate to the mortality, stranding or oiling of mobile marine megafauna species not addressed in SM06 or SM07, including:</p> <ul style="list-style-type: none"> Cetaceans; Dugongs; Whale sharks and other shark and ray populations; Sea snakes; and Crocodiles. <p>The desk-based assessment will include population analysis to infer potential impacts to marine megafauna species populations.</p>	<p>SM08 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring reports records of dead, oiled or injured non-avian marine megafauna during the spill/ response phase.</p>	<p>SM08 will be terminated when the results of the post-spill monitoring have quantified impacts to non-avian megafauna.</p> <ul style="list-style-type: none"> Agreement with relevant persons/ organisations and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 9 (SM09)</p> <p>Assessment of impacts and recovery of marine fish associated with SM03 habitats</p>	<p>The objectives of SM09 are:</p> <ul style="list-style-type: none"> Characterise the status of resident fish populations associated with habitats monitored in SM03 exposed/contacted by spilled hydrocarbons; Quantify any impacts to species (abundance, richness and density) and resident fish population structure (representative functional trophic groups); and Determine and monitor the impact of the hydrocarbon spill and potential subsequent recovery (including impacts associated with the implementation of response options). 	<p>SM09 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented with SM03.</p>	<p>SM09 will be undertaken and terminated concurrent with monitoring undertaken for SM03, as per the SMP termination criteria process</p> <ul style="list-style-type: none"> Agreement with relevant persons/ organisations and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.
<p>Scientific monitoring program 10 (SM10)</p> <p>Assessment of physiological impacts important fish and shellfish species (fish health and seafood quality/safety) and recovery</p>	<p>SM10 aims to assess any physiological impacts to important commercial fish and shellfish species (assessment of fish health) and if applicable, seafood quality/safety. Monitoring will be designed to sample key commercial fish and shellfish species and analyse tissues to identify fish health indicators and biomarkers, for example:</p> <ul style="list-style-type: none"> Liver Detoxification Enzymes (ethoxyresorufin-O-deethylase (EROD) activity) PAH Biliary Metabolites Oxidative DNA Damage Serum SDH Other physiological parameters, such as condition factor (CF), liver somatic index (LSI), gonado-somatic index (GSI) and gonad histology, total weight, length, condition, parasites, egg development, testes development, abnormalities. Seafood tainting may be included (where appropriate) using applicable sensory tests to objectively assess targeted finfish and shellfish species for hydrocarbon contamination. 	<p>SM10 will be initiated in the event of a Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors and implemented if operational monitoring (OM01, OM02 and OM05) indicates the following:</p> <ul style="list-style-type: none"> The hydrocarbon spill will or has intersected with active commercial fisheries or aquaculture activities. Commercially targeted finfish and/or shellfish mortality has been observed/recorded. Commercial fishing or aquaculture areas have been exposed to hydrocarbons (≥0.5 g/m² surface and ≥5 ppb for entrained/dissolved hydrocarbons); and Taste, odour or appearance of seafood presenting a potential human health risk is observed. 	<p>SM10 will be terminated once it is agreed that the receptor has returned to pre-spill condition. The SMP termination criteria process will be followed and include consideration of:</p> <ul style="list-style-type: none"> Physiological impacts to important commercial fish and shellfish species from hydrocarbon exposure have been quantified. Recovery of important commercial fish and shellfish species from hydrocarbon exposure has been evaluated. Impacts to seafood quality/safety (if applicable) have been assessed and information provided to the relevant persons/ organisations and regulators for the management of any impacted fisheries.

Scientific monitoring Program (SMP)	Objectives	Activation Triggers	Termination Criteria
	Results will be used to make inferences on the health of commercial fisheries and the potential magnitude of impacts to fishing industries.		<ul style="list-style-type: none"> Agreement with relevant persons/ organisations and regulators based on the nature and scale of the hydrocarbon spill impacts and/or that observed impacts can no longer be attributed to the spill.

Activation Triggers and Termination Criteria

Scientific monitoring program Activation

The Woodside oil spill scientific monitoring team will be stood up immediately with the occurrence of a (actual or suspected) Level 2 or 3 hydrocarbon release, or any release event with the potential to contact sensitive environmental receptors via the first strike plan for the petroleum activity programme. The presence of any level of hydrocarbons in the marine environment triggers the activation of the oil spill scientific monitoring program (SMP). This is to consider the full range of eventualities relating to the environmental, socio-economic and health consequences of the spill in the planning and execution of the SMP. The activation process also takes into consideration the management objectives, species recovery plans, conservation advices and conservations plans for any World Heritage Area (WHA), CMRs, State Marine Parks, other protected area designations (e.g., State nature reserves) and Matters of National Environmental Significance (including listed species under part 3 of the EPBC Act) potentially exposed to hydrocarbons. With the first 24-48 hours of a spill event, such information will be sourced and evaluated as part of the SMP planning process guided by Appendix D (identified receptors vulnerable to hydrocarbon contact), the information presented in the Existing Environment section of the EP as well as other information sources such as the Woodside Baseline Environmental Studies Database.

The starting point for decision-making on what SMPs are activated and spatial extent of monitoring activities will be based on the predictive modelling results (OM01) in the first 24-48 hours until more information is made available from other operational monitoring activities such as aerial surveillance and shoreline surveys. Pre-emptive Baseline Areas (WHA, CMRs and State Marine Parks encompassing key ecological and socio-economic values) are a key focus of the SMP activation decision-making process, particularly, in the early spill event/response phase. As the operational monitoring progresses and further situational awareness information becomes available, it will be possible to understand the nature and scale of the spill. The SMP activation and implementation decision-making will be revisited daily to account for the updates on spill information. One of the priority focus areas in the early phase of the incident will be to identify and execute pre-emptive SMP assessments at key receptor locations, as required. The SMP activation and implementation decision tree is presented in Figure C-2.

Scientific monitoring Program Termination

The basis of the termination process for the active SMPs (SMPs 1-10) will include quantification of impacts, evaluation of recovery for the receptor at risk and consultation with relevant authorities, persons and organisations. Termination of each SMP will not be considered until the results (as presented in annual SMP reports for the duration of each program) indicate that the target receptor has returned to pre-spill condition.

Once the SMP results indicate impacted receptor(s) have returned to pre-spill condition (as identified by Woodside) a termination decision-making process will be triggered and steps will be undertaken as follows:

- Woodside will engage expert opinion on whether the receptor has returned to pre-spill condition (based on monitoring data). Subject Matter Expert (SMEs) will be engaged (via the Woodside SME scientific monitoring terms of reference to review program outcomes, provide expert advice and recommendations for the duration of each SMP.
- Where expert opinion agrees that the receptor has returned to pre-spill condition, findings will then be presented to the relevant authorities, persons and organisations (as defined by the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulation 11A). Identification, planning and engagement with relevant persons/ organisations will be managed by Woodside's Reputation Functional Support Team (FST) and follow the Stakeholder Management FST. These guidelines outline the FST roles and responsibilities, competencies, communications and planning processes. An assessment of the merits of any objection to termination will be documented in the SMP final report.

- Woodside will decide on termination of SMP based on expert opinion and merits of any relevant persons/ organisations' objections. The final report following termination will include monitoring results, expert opinion and consultation including merits of any objections.
- Termination of SMPs will also consider applicable management objectives, species recovery plans, conservation advices and conservations plans for any World Heritage Area (WHA), CMRs, State Marine Parks, other protected area designations (e.g., State nature reserves) and Matters of National Environmental Significance (including listed species under part 3 of the EPBC Act).

The SMP termination decision-making process will be applied to each active SMP and an iterative process of decision steps continued until each SMP has been terminated (refer to decision-tree diagram for SMP termination criteria, Figure C-3).

SMP ACTIVATION & IMPLEMENTATION DECISION PROCESS

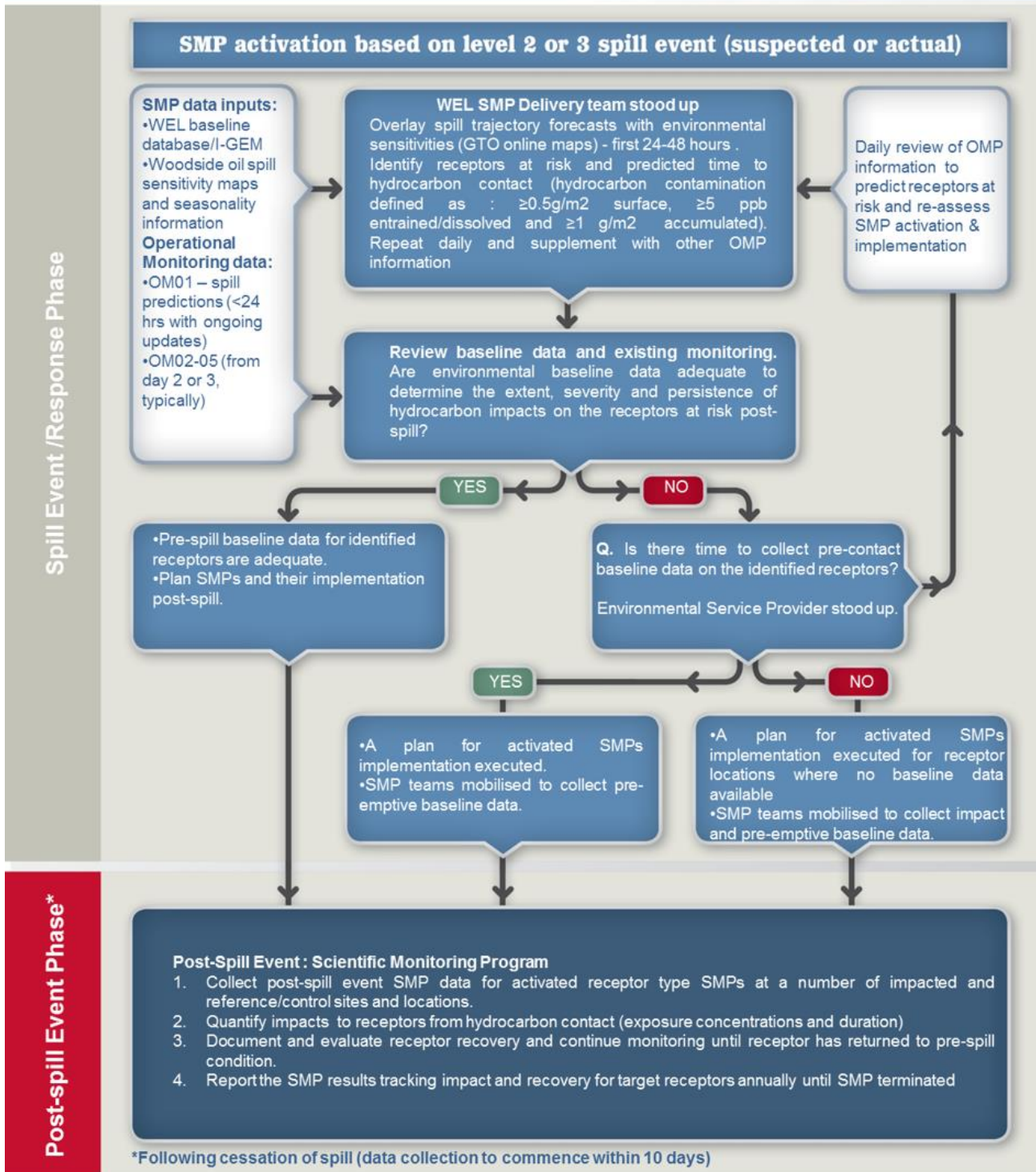


Figure C-2: Activation and Implementation Decision-tree for Oil Spill Environmental Monitoring

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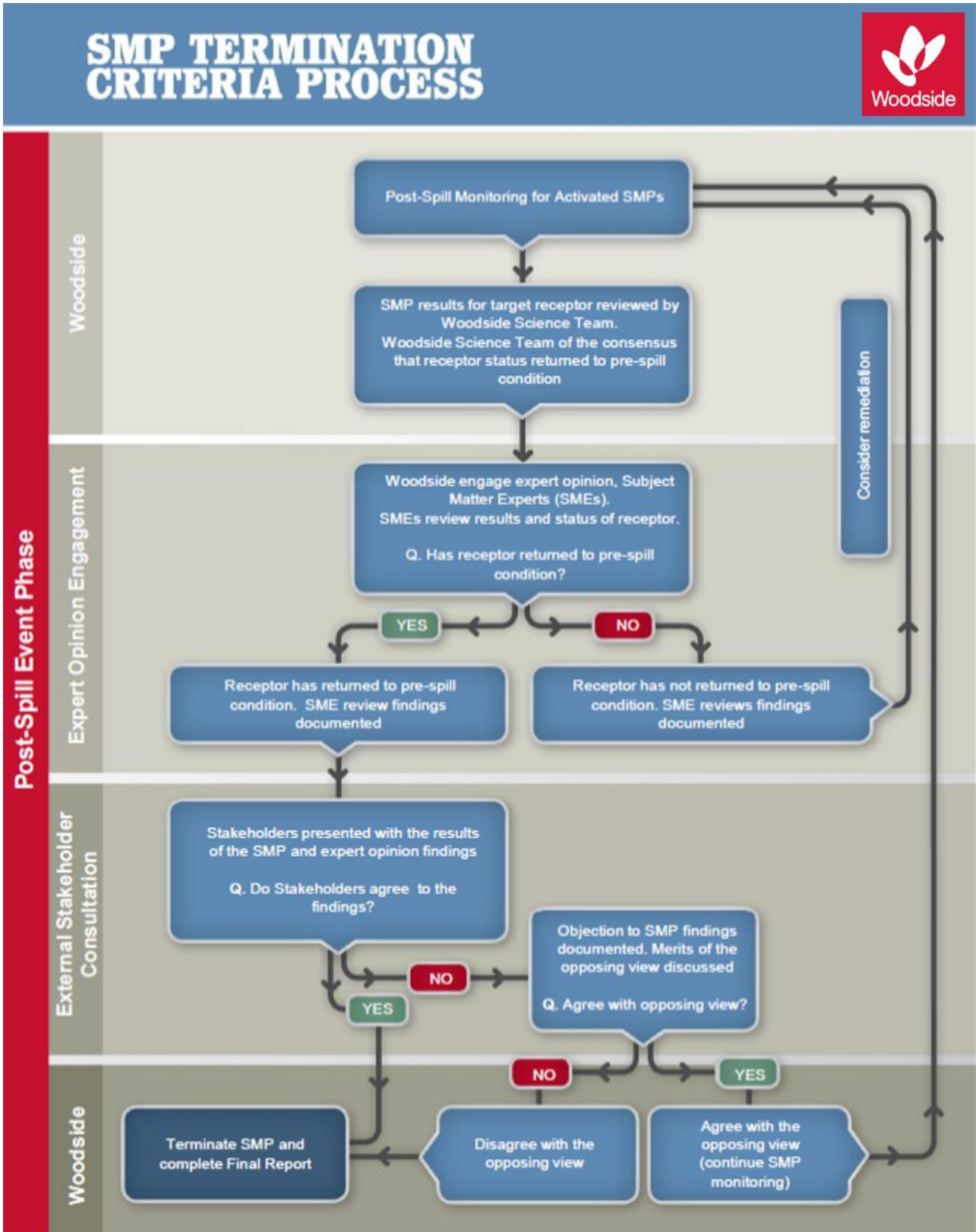


Figure C-3: Termination Criteria Decision-tree for Oil Spill Environmental Monitoring

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Receptors at Risk and Baseline Knowledge

To assess the baseline studies available and suitability for oil spill scientific monitoring, Woodside maintains knowledge of environmental baseline studies through the upkeep and use of its Environmental Knowledge Management System.

Woodside's Environmental Knowledge Management System is a centralised platform for scientific information on the existing environment, marine biodiversity, Woodside environmental studies, key environmental impact topics, key literature and web-based resources. The system comprises numerous data directories and an environmental baseline database, as well as folders within the 'Corporate Environment' server space. The environmental baseline database was set up to support Woodside's SMP preparedness and as a SMP resource in the event of an unplanned hydrocarbon spill. The environmental baseline database is subject to updates including annual reviews completed as part of SMP standby contract. This database is accessed pre-PAP to identify Pre-emptive Baseline Areas (PBAs) where hydrocarbon contact is predicted to occur <10 days.

In addition to Woodside's Environmental Knowledge Management System, many relevant baseline datasets are held by other organisations (e.g. other oil and gas operators, government agencies, state and federal research institutions and non-governmental organisations). To understand the present status of environmental baseline studies, a spatial environmental metadata database for Victoria can be accessed via CoastKit¹¹. This is an online portal for information about marine-based environmental surveys in Victoria administered by DEECA.

In the event of an unplanned hydrocarbon release, Woodside intends to interrogate the information on baseline studies status as held by the various databases (e.g. Woodside Environmental Knowledge Management System, CoastKit and other sources of existing baseline data) to identify Pre-emptive Baseline Areas (PBAs), i.e., receptors at risk where hydrocarbon contact is predicted to be >10 days, and baseline data can be collected before hydrocarbon contact.

Reporting

For the scientific monitoring program relevant regulators will be provided with:

- Annual reports summarising the SMPs deployed and active, data collection activities and available findings; and
- Final reports for each SMP summarising the quantitative assessment of environmental impacts and recovery of the receptor once returned to pre-spill condition and termination of the monitoring program.

The reporting requirements of the scientific monitoring program will be specific to the individual SMPs deployed and terms of responsibilities, report templates, schedule, quality assurance/ quality control (QA/QC) and peer-review will be agreed with the contractors engaged to conduct the SMPs. Compliance and auditing mechanisms will be incorporated into the reporting terms.

¹¹ <https://mapshare.vic.gov.au/coastkit/>

ANNEX D: MONITORING PROGRAM AND BASELINE STUDIES FOR THE PETROLEUM ACTIVITIES PROGRAM

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Table D-1: Oil Spill Environmental Monitoring – scientific monitoring program scope for the Petroleum Activities Program based on Spill EMBA. Bioregions from Bridgewater to Point Dander State Marine Park

Receptor Areas - Potential Impact and Reference Scientific Monitoring Sites (marked X)																			
Bioregion		IBRA																	
Receptors to be monitored	Applicable SMP	Bridgewater			Glenelg Plain	Warrnambool Plain						Otway Ranges	Otway Plain						
		Bonney Coast Upwelling KEF	Glenelg Estuary and Discovery Bay Wetlands RAMSAR	Discovery Bay State MP (IUCN II)	Bonney Coast Upwelling KEF	Yambuk Wetlands / Coastal Reserve	Bonney Coast Upwelling KEF	Merri State MP (IUCN III) and Lower Merri River Wetlands	The Arches State MP (IUCN III)	Twelve Apostles State MP (IUCN II)	Princetown Wetlands	Marengo Reefs State MP (IUCN III)	Cape Otway	Lake Connewarre State Wildlife Reserve	Aire River and Lower Aire River Wetlands	Swan Bay and Swan Island Wetland	Point Addis State MP (IUCN II)	Eagle Rock State MP (IUCN III)	Point Danger State MP (IUCN III)
Habitats/ Community																			
Water Quality	SM01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Marine Sediment Quality	SM02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Subtidal and Intertidal benthic habitat ¹² (Assemblages of species associated with open-coast saltwedge estuary EPBC Act TEC) ¹³	SM03	X*	X*	X*	X	X*	X*	X*	X*	X*	X*	X*	X	X*	X*	X*	X*	X*	X*
Deeper water filter feeders	SM03											X							
Seagrass and macroalgae (Giant Kelp Beds EPBC Act TEC) ¹⁴	SM03	X**	X**	X**	X**	X**	X**	X**	X	X	X**	X**	X**	X**	X**	X**	X**	X**	X**
Mangroves	SM04																		
Subtropical and Temperate Coastal Saltmarsh (EPBC Act TEC)	SM04	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X
Species																			
Seabirds and migratory shorebirds	SM05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pinnipeds	SM07	X						X				X							
Fish assemblages	SM09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Socio-economic																			
Fisheries	SM10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	Receptor areas identified as Pre-emptive Baseline Areas (based on criteria of surface contact and/or entrained hydrocarbon contact ≤10 days (Offshore Australian Marine Parks contacted by hydrocarbons in this timeframe also noted)
	Receptor areas identified as Pre-emptive Baseline Areas in the response phase >10 days (based on criteria of surface contact and/or entrained hydrocarbon contact >10 days)
	Receptor areas that may be identified as impact or reference sites in the event of major hydrocarbon release and would be identified as part of the SMP planning process

¹² SM03 Benthic Habitat types: sandy beaches and rocky shorelines (intertidal), soft sediment and rocky habitat/reefs (subtidal) are widespread and not mapped to receptor locations. Refer to the Minerva Existing Environment and the South-east Marine Region Plan (DoE 2015)

¹³ Assemblages of species associated with open-coast salt wedge estuaries of western and central Victoria ecological community (EPBC Act TEC) relevant sites marked *

¹⁴ Giant Kelp Beds EPBC Act TEC relevant sites marked **

Table D-2: Oil Spill Environmental Monitoring – scientific monitoring program scope for the Petroleum Activities Program based on Spill EMBA. Bioregions from Barwon Bluff State Marine Park to West Tasmanian Canyon KEF

Bioregion	Receptor Areas - Potential Impact and Reference Scientific Monitoring Sites (marked X)																	MNES							
	Applicable SMP	IBRA																	Australian Marine Park				KEF		
		Victorian Volcanic Plain	Port Phillip Bay			Gippsland Plain								Strzelecki Ranges	Wilson's Promontory (VIC)	King			Flinders	Apollo AMP (IUCN VI)	Beagle AMP (IUCN VI) Including offshore Islands	Zeehan AMP (IUCN VI)	West Tasmania Canyon KEF		
Receptors to be monitored	Barwon Bluff State MP (IUCN III)	Port Phillip Heads State MP (IUCN II)	Port Phillip Bay	Port Phillip Bay (Western Shoreline) and Bellarine RAMSAR	Point Nepean Defence National Heritage Park	Western Port RAMSAR	Bunurong State MP (IUCN II)	Mushroom Reef State MP (IUCN III)	Churchill Island State MP (IUCN II)	Corner Inlet RAMSAR	Ninety Mile Beach MP (IUCN II)	Strzelecki Ranges	Wilson's Promontory (VIC) State MP (IUCN II)	King Island	North-West Tasmania	Boags Marine Park	Flinders Island								
Habitats/ Community																									
Water Quality	SM01	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Marine Sediment Quality	SM02	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Subtidal and Intertidal benthic habitat ¹⁵ (Assemblages of species associated with open-coast salt wedge estuary EPBC Act TEC) ¹⁶	SM03	X*	X*					X*	X		X		X										X	X	
Deeper water filter feeders	SM03							X					X									X		X	
Seagrass and macroalgae (Giant Kelp Beds EPBC Act TEC) ¹⁷	SM03	X**	X**	X**	X**	X**	X**	X**	X**	X**	X**	X**	X**		X							X	X	X	X
Mangroves	SM04						X		X	X															
Subtropical and Temperate Coastal Saltmarsh (EPBC Act TEC)	SM04	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X							
Species																									
Seabirds and migratory shorebirds	SM05	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Pinnipeds	SM07												X									X			
Fish assemblages	SM09	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Socio-economic																									
Fisheries	SM10	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

	Receptor areas identified as Pre-emptive Baseline Areas (based on criteria of surface contact and/or entrained hydrocarbon contact ≤10 days (Offshore Australian Marine Parks contacted by hydrocarbons in this timeframe also noted)
	Receptor areas identified as Pre-emptive Baseline Areas in the response phase >10 days (based on criteria of surface contact and/or entrained hydrocarbon contact >10 days)
	Receptor areas that may be identified as impact or reference sites in the event of major hydrocarbon release and would be identified as part of the SMP planning process

¹⁵ SM03 Benthic Habitat types: sandy beaches and rocky shorelines (intertidal), soft sediment and rocky habitat/reefs (subtidal) are widespread and not mapped to receptor locations. Refer to the Minerva Existing Environment and the South-east Marine Region Plan (DoE 2015)
¹⁶ Assemblages of species associated with open-coast salt wedge estuaries of western and central Victoria ecological community (EPBC Act TEC) relevant sites marked *
¹⁷ Giant Kelp Beds EPBC Act TEC relevant sites marked **

Table D-3: Baseline Studies for the SMPs applicable to identified Pre-emptive Baseline Areas for the Petroleum Activities Program

Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Existing Baseline Monitoring	Description and Spatial Extent	References and data
Benthic Habitats: Shorelines and intertidal habitats	SM03 Quantitative assessment using image capture using towed video. Post analysis into broad groups based on taxonomy and morphology	Baseline habitat mapping and improved monitoring of reef habitats in Victoria's marine national parks and sanctuaries	Coastal Victoria	Young et al., 2022
		Signs of Healthy Parks (SHP) program.	Intertidal Reef Monitoring Program: • Intertidal Reef Biota of Central Victoria's Marine Protected Areas • Intertidal Reef Biota of Northern Port Phillip Bay Marine Sanctuaries • Reef biota in Central Victoria and Port Phillip Bay Marine Sanctuaries Applies to the following protected areas within the EMBA, including • Point Addis Marine National Park • Point Danger Marine Sanctuary • Barwon Heads Marine Sanctuary • Mushroom Reef Marine Sanctuary	Pritchard et al., 2011
			Shallow Water Habitat Mapping at Victorian Marine National Parks and Marine Sanctuaries: • Eastern Victoria • Western Victoria	Ball and Blake, 2007
			Mapping the Benthos in Victoria's Marine National Parks: • Discovery Bay Marine National Park • Point Addis Marine National Park • Twelve Apostles Marine National Park	Holmes et al., 2007
		Rocky Shores of Marine National Parks and Sanctuaries on the Surf Coast Shire – Values, uses and impacts	Coastal Victoria	Porter and Wescott, 2010
		Identification of threats to natural values in Victoria's Marine	Coastal Victoria	Carey et al., 2007
		National Parks and Marine Sanctuaries	Coastal Victoria	Parks Victoria, 2023
		Monitoring the macroinvertebrates and soft sediments in the Marine National Parks in Western Port	Coastal Victoria	Butler and Bird, 2010
		Yaringa and French Island MNP Habitat Mapping	Coastal Victoria	French et al., 2014
	Reef life survey	Coastal Victoria	Reef Life Survey, 2023	
Benthic Habitat: Seagrass and macroalgae	SM03 Quantitative assessment using image capture using towed video. Post analysis into broad groups based on taxonomy and morphology	Biogeography of Australian Seagrasses: NSW, Victoria, Tasmania and Temperate Queensland	Coastal Victoria	Macreadie et al., 2018
		Mud Islands Seagrass and Coastline Mapping 2011-12	Coastal Victoria	Ball, 2013
Mangroves and saltmarsh	SM04 Aerial photography and satellite imagery will be used in conjunction with field surveys to map the range and distribution of mangrove communities.	Mangrove and saltmarsh distribution mapping and land cover change assessment for south-eastern Australia from 1991 to 2015	Coastal Victoria	Navarro et al., 2021
Seabirds and shorebirds	SM05 Visual counts of breeding seabirds, nest counts, intertidal bird counts at high tide	Australian National Directory of Important Migratory Shorebird Habitat	Coastal Victoria	Birdlife Australia, 2020
		Species diversity and composition of benthic infaunal communities found in Marine National Parks along the outer Victorian coast		Heislars and Parry, 2007.
		Little Penguin		Wallis et al., 2017
		Middle island Little Penguin Monitoring program		Warmambool Council 2022
		Report on the 2020 Biennial hooded Plover Count		Adams and Maguire, 2020
		Birds as Environmental Indicators		Chambers, 2008
Pinnipeds	SM07 Visual counts of breeding colonies / haul-out populations using shoreline (beach or vessel) or aerial surveys	New Zealand Fur Seal	Victoria	McIntosh et al., 2022
Benthic communities and fish assemblages	SM09 Baited Remote Underwater Video Stations (BRUVS), Diver Operated Video (DOV)	Signs of Healthy Parks (SHP) program.	Subtidal Reef Monitoring Program: • Popes Eye Component of the Port Phillip Heads MNP • Reef Biota at Bunurong Marine National Park and Surrounding Coast • Reef Biota at Eagle Rock Marine Sanctuary • Reef Biota at Marengo Reefs Marine Sanctuary • Reef Biota at Marine Protected Areas in the Twofold Shelf region • Reef Biota at Merri Marine Sanctuary • Reef Biota at Phillip Island • Reef Biota at Point Addis Marine National Park • Reef Biota at Port Phillip Bay Marine Sanctuaries • Reef Biota at Port Phillip Heads Marine National Park	Edmunds, 2017

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Major Baseline	Proposed Scientific monitoring operational plan and Methodology	Existing Baseline Monitoring	Description and Spatial Extent	References and data
			<ul style="list-style-type: none"> • Reef Biota on the Western Victorian Coast • Reef Biota within the Twofold Shelf Bioregion • Reef Surveys at Twelve Apostles Marine National Park and The Arches Marine Sanctuary • Western Victorian Coast 	
		Baseline habitat mapping and improved monitoring of reef habitats in Victoria's marine national parks and sanctuaries	Coastal Victoria	Young et al., 2022
		Reef Life survey	Coastal Victoria	Reef Life Survey, 2023
		Reefwatch	Victoria	Victorian National Parks Association, 2023
Commercial fisheries	SM10 DoF Trap LTM dataset	Seafood Industry Victoria (SIV)	Commercial Fishers	Seafood Industry Victoria, 2023
		South East Trawl Fishing Industry Association (SETFIA)	Commercial Fishers	South East Trawl Fishing Industry Association, 2023
		Victorian Fisheries Authority	State	Victorian Fisheries Authority, 2023
		Australian Fisheries Management Authority (AFMA)	Commonwealth	Australian Fisheries Management Authority [AFMA], 2023

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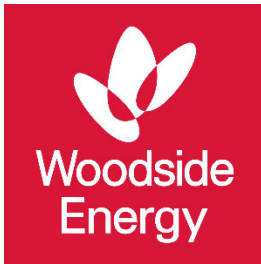
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03	Department of Transport and Planning Resilience and Emergency Coordination Level 13, South Tower 525 Collins St, Melbourne, VIC, 3000 E: [REDACTED]	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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06	Oil Spill Response Limited C/- Operations Administration Loyang Offshore Supply Base 25C Loyang Crescent (Block 503 TOPS Avenue 3) Singapore 506818 E: [REDACTED]	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Minerva Decommissioning and Field Management – Oil Pollution First Strike Plan

Corporate HSE

Hydrocarbon Spill Preparedness

March 2024

Revision 0

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CONTROL AGENCIES AND INCIDENT CONTROLLERS

Source	Location	Level	Jurisdictional authority	Control Agency	Incident Controller
Spill from facility including subsea infrastructure Note: pipe laying and accommodation vessels are considered a "facility" under Australian regulations	Commonwealth waters	1	NOPSEMA	Woodside	Person In Charge (PIC) with support from Onshore Team Leader (OTL)
		2/3		Woodside	Corporate Incident Management Team (CIMT) Incident Commander (IC)
	State waters	1	Victoria Department of Transport and Planning (Vic DTP)	Woodside	PIC with support from OTL
		2/3		Vic DTP	Vic DTP State Controller Maritime Emergencies (SCME) (with response assistance from Woodside)
Spill from vessel Note: SOPEP should be implemented in conjunction with this document	Commonwealth waters	1	Australian Marine Safety Authority (AMSA)	Vessel	Vessel Master
		2/3		AMSA	AMSA (with response assistance from Woodside)
	State waters	1	Vic DTP	Port Authority	Port Management Body/ Local Port Manager
		2/3		Vic DTP	Vic DTP SCME
	Port waters	1	Port Authority	Port Authority	Port Management Body/ Local Port Manager
		2/3		Port Authority/ Vic DTP	Port Management Body/ Local Port Manager/ Vic DTP SCME
Spill impacting wildlife	State waters	1	Department of Energy, Environment and Climate Action (DEECA)	DEECA	Duty Officer
		2/3			

SPILLS IN STATE WATERS

As detailed in the table above, in the event of a hydrocarbon spill where Woodside Energy (Victoria) Pty Ltd ('Woodside') is the responsible party and the spill may impact State waters and shorelines, Woodside (or the Vessel Master) will commence the initial response actions and notify the Victoria Department of Transport and Planning (Vic DTP).

Woodside will continue to provide initial response actions for State waters, until such time that Vic DTP establishes an Incident Control Centre (ICC) and assumes control of the spill response. Initially Woodside will be required to make available an Emergency Management Liaison Officer (EMLO) to work in the Vic DTP IMT to facilitate effective communication between Vic DTP and Woodside.

The Vic DTP/ Port Authority's role as the Controlling Agency in State waters/ within port limits does not negate the requirement for Woodside to have appropriate plans and resources in place to adequately respond to a marine hydrocarbon spill incident in State waters/ within port limits or to

commence the initial response actions to a spill prior to Vic DTP establishing incident control in line with the Victorian *Joint Industry and State Oil Pollution Responses Guidance Note* (V2.4, 2023). Woodside will provide resources in line with its Incident and Crisis Management (I&CM) organisational structure and the Oil Pollution First Strike Plan (FSP).

A Vic DTP officer will be appointed the role of the State Controller Maritime Emergencies (SCME), otherwise known as the State Controller under the State Emergency Management Plan (SEMP), who has overall responsibility for ensuring there is an adequate response in State waters. The SCME will be responsible for authorising the activation of National Plan resources (including the National Response Team (NRT), trajectory modelling, and specialist equipment) via AMSA.

The Emergency Management Commissioner (EMC) is responsible for ensuring effective control arrangements are in place for maritime emergencies. To facilitate effective coordination between the two Controlling Agencies and their respective IMTs, a Joint Strategic Coordination Committee (JSCC) will be established. The JSCC will be jointly chaired by the State Controller Maritime Emergencies (SCME) and the Woodside nominated senior representative, and will comprise of individuals deemed necessary by the chairs to ensure an effective coordinated response across both jurisdictions. The coordination structure for the JSCC is shown in [APPENDIX D](#) – Coordination structure for a concurrent hydrocarbon spill in both Commonwealth and State waters/ shorelines. Detailed cross-jurisdiction arrangements are available in the *Victorian State Maritime Emergencies (non-search and rescue) (MENSAR) Subplan Edition 2* which acts as the *Victorian Marine Pollution Contingency Plan* in accordance with the National Plan and the Marine (Drug, Alcohol and Pollution Control) Act 1988.

The Woodside Corporate Incident Management Team (CIMT), based in Woodside's head office, is the onshore coordination point for an offshore emergency. The CIMT is staffed by an appropriately skilled team available on call 24-hours per day. Woodside's Incident Management Structure for a hydrocarbon spill can be seen at [APPENDIX E](#) – Woodside Incident Management structure.

RESPONSE PROCESS OVERVIEW

For guidance on credible scenarios and hydrocarbon characteristics, refer to APPENDIX A		
ALL INCIDENTS	Notify the Woodside Communication Centre (WCC) on: [REDACTED]	
	Incident Controller or delegate to make relevant notifications in Table 1-1.	
LEVEL 1	FACILITY INCIDENT	VESSEL INCIDENT
	Coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan. Remember to download each Operational Plan.	Notify AMSA/ Port Authority and coordinate pre-identified tactics in Table 2-1 of this Oil Pollution First Strike Plan Remember to download each Operational Plan.
	If the spill escalates such that the site cannot manage the incident, inform the WCC on: [REDACTED] and escalate to a level 2/3 incident.	
LEVEL 2/3	FACILITY INCIDENT	VESSEL INCIDENT
	Handover control to CIMT and notify Vic DTP/ Port Authority	Handover control to AMSA/ Port Authority and stand up CIMT to assist.
	Commence quick revalidation of the recommended strategies in Table 2-1 taking into consideration seasonal sensitivities and current situational awareness. Commence validated strategies.	If requested by AMSA/Port Authority: Commence quick revalidation of the recommended strategies in Table 2-1 taking into consideration seasonal sensitivities and current situational awareness. Commence validated strategies.
	Create an Incident Action Plan (IAP) for all ongoing operational periods. The content of the IAP should reflect the selected response strategies based on current situational awareness. For the pre-operational Net Environmental Benefit Analysis (NEBA) see the OSPRMA Appendix A	If requested by AMSA/ Port Authority: Create an IAP for all ongoing operational periods. The content of the IAP should reflect the selected response strategies based on current situational awareness. For the pre-operational NEBA see the OSPRMA Appendix A

1. NOTIFICATIONS

The Incident Controller or delegate must ensure the below notifications (Table 1-1) are completed within the designated timeframes.

For spills from a vessel, relevant notifications must be undertaken by a WEL representative.

Table 1-1: Notifications

In the event of an incident between campaign vessels, also activate relevant vessel Emergency Response Plans and/or Bridging Documents

Timing	By	To	Name	Contact	Instruction	Form	Complete? (✓)
NOTIFICATIONS FOR ALL LEVELS OF SPILL							
Immediately	Offshore Installation Manager (OIM) or Vessel Master	Woodside Communication Centre (WCC)	Duty Manager	[REDACTED]	Verbally notify WCC of event and estimated volume and hydrocarbon type.	Verbal	
As soon as practicable	CIMT IC or Delegate	Woodside	Environment Unit Leader	As per roster	Verbally notify Environment Unit Leader of event and seek advice on relevant performance standards from EP	Verbal	
Within 2 hours	Woodside Site Rep (WSR), Corporate Incident Management Team Incident Commander (CIMT IC) or Delegate	National Offshore Petroleum Safety Environmental Management Authority (NOPSEMA ¹)	Incident notification office	[REDACTED]	Verbally notify NOPSEMA for spills >80L. Record notification using Initial Verbal Notification Form or equivalent and send to NOPSEMA as soon as practicable (cc to NOPTA).	[REDACTED]	
Within 3 days	WSR, CIMT IC or Delegate			[REDACTED]	Provide a written NOPSEMA Incident Report Form as soon as practicable (no later than 3 days after notification) (cc to NOPTA) NOPSEMA [REDACTED] NOPTA [REDACTED]	[REDACTED]	
Report all actual or impending marine pollution incidents that are in, or may impact, state waters as soon as reasonably practicable	CIMT IC or Delegate	Vic Department of Transport and Planning (Vic DTP)	State Duty Officer (SDO)	[REDACTED]	Verbally notify Vic DTP SDO that a spill has occurred. Follow up with an email containing a more detailed Marine Pollution Incident Report Form as soon as practicable following verbal notification. Send to: [REDACTED]	Verbal and written	
			State Agency Commander (if SDO unavailable)	[REDACTED]			
As soon as practicable	CIMT IC or Delegate	DEECA Earth Resources Regulation (ERR)	Duty Officer	[REDACTED]	Verbally notify Earth Resources Regulation that a spill has occurred. Within 3 days, follow up with an email containing a more detailed information as soon as practicable following verbal notification. Send to: [REDACTED]	Verbal and written	
As soon as practicable	CIMT IC or Delegate	Port of Portland	Harbour Master/ Marine Manager	[REDACTED]	Verbally notify Port of Portland that a spill has occurred (responsible for spill response from South Australian-Victoria border to Cape Otway)	Verbal	
As soon as practicable	CIMT IC or Delegate	Department of Climate Change, Energy, the Environment and Water (DCCEEW) Director of National Parks	Marine Park Compliance Duty Officer	[REDACTED]	The Marine Park Compliance Duty Officer is notified in the event of oil pollution within a marine park, or where an oil spill response action must be taken within a marine park, so far as reasonably practicable, prior to response action being taken. This notification should include: <ul style="list-style-type: none"> • titleholder details • time and location of the incident • proposed response arrangements and locations as per the OPEP 	Verbal	

¹ Notification to NOPSEMA must be from a Woodside Representative.

					<ul style="list-style-type: none"> • contact details for the response coordinator • confirmation of access to relevant monitoring and evaluation reports when available. 		
As soon as practicable if there is potential for oiled wildlife or the spill is expected to contact land or waters managed by DEECA	CIMT IC or Delegate	DEECA	State Agency Commander	██████████	Phone call notification	Verbal	
As soon as practicable	Public Information	Relevant persons/ organisations	To be determined	To be determined	Should it be identified that additional persons such as, but not limited to, commercial fishers and tourism operators may be affected, Woodside would, at the relevant time, engage with these parties as appropriate. Relevant persons/ organisations will be re-assessed throughout the response period.	Verbal initially	
As soon as practicable	Public Information	Relevant cultural authorities	To be determined	To be determined	Should it be identified that relevant cultural authorities may be affected, Woodside would, at the relevant time, engage with these parties as appropriate. Relevant cultural authorities will be re-assessed throughout the response period.	Verbal initially	
ADDITIONAL NOTIFICATIONS TO BE MADE ONLY IF SPILL IS FROM A VESSEL							
Without delay as per protection of the Sea Act, part II, section 11(1)	Vessel Master	Australian Maritime Safety Authority (AMSA)	Response Coordination Centre (RCC)	██████████ ██████████	Verbally notify AMSA RCC of the hydrocarbon spill. Follow up with a written Marine Pollution Report (POLREP) as soon as practicable following verbal notification.	██████████	
ADDITIONAL LEVEL 2/3 NOTIFICATIONS							
As soon as practicable	CIMT IC or Delegate	AMOSC	AMOSC Duty Manager	██████████	Notify AMOSC that a spill has occurred and follow-up with an email from the CIMT IC/ CIMT Deputy IC/ CMT Leader to formally activate AMOSC. Determine what resources are required consistent with the AMOS Plan and detail in a Service Contract that will be sent to Woodside from AMOSC upon activation.	██████████	
As soon as practicable	CIMT IC or Delegate	Oil Spill Response Limited (OSRL)	OSRL Duty Manager	██████████	Contact OSRL duty manager and request assistance from technical advisor in Perth. Send the completed notification form to OSRL as soon as practicable.	██████████	
					For mobilisation of resources, send the Mobilisation Form to OSRL as soon as practicable. The mobilisation form must be signed by a nominated callout authority from Woodside. OSRL can advise the names on the call out authority list, if required.	██████████	
As soon as practicable if extra personnel are required for incident support	CIMT IC or Delegate	Marine Spill Response Corporation (MSRC)	MSRC Response Manager	██████████ ██████████	Activate the contract with MSRC (in full) for the provision of up to 30 personnel depending on what skills are required. Please note that provision of these personnel from MSRC are on a best endeavours basis and are not guaranteed.	Verbal	

2. RESPONSE TECHNIQUES

Table 2-1: Response techniques

Technique	Hydrocarbon/ spill type	Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
	MDO					
Operational monitoring –tracking buoy (OM02)	Yes	ALL	If a vessel is on location, consider the need to deploy the oil spill tracking buoy. If no vessel is on location, consider the need to mobilise oil spill tracking buoys from the King Bay Supply Base (KBSB) Stockpile. If a surface sheen is visible from the facility, deploy the satellite tracking buoy within two hours.	Operations	DAY 1: Tracking buoy deployed within 2 hours.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk (OM02) of The Operational Monitoring Operational Plan. Deploy tracking buoy in accordance with Link .
Operational monitoring – predictive modelling (OM01)	Yes	ALL	Undertake initial modelling using the Rapid Assessment Oil Spill Tool and weathering fate analysis using Automated Data Inquiry for Oil Spills (ADIOS) or refer to the hydrocarbon information in Appendix A .	Situation or Environment	DAY 1: Initial modelling within 6 hours using the Rapid Assessment Tool.	Predictive Modelling of Hydrocarbons to Assess Resources at Risk (OM01 of The Operational Monitoring Operational Plan). <i>Planning to download immediately and follow steps</i>
	Yes	ALL	Send Oil Spill Trajectory Modelling (OSTM) form (Appendix B, Form 7) to RPS Response (██████████).	Situation	DAY 1: Detailed modelling within 4 hours of RPS Response receiving information from Woodside.	
Operational monitoring – aerial surveillance (OM02)	Yes	ALL	Instruct Aviation Unit Leader to commence aerial observations in daylight hours. Aerial surveillance observer to complete log in Appendix B Form 8 .	Logistics – Aviation	DAY 1: 2 trained aerial observers. 1 aircraft available. Report made available to the IMT within 2 hours of landing after each sortie.	Surveillance and Reconnaissance to Detect Hydrocarbons and Resources at Risk (OM02 of The Operational Monitoring Operational Plan). <i>Planning to download immediately and follow steps</i>
Operational monitoring – satellite tracking (OM02)	Yes	ALL	The Situation Unit Leader to action satellite imagery services. This may be obtained via: <ul style="list-style-type: none"> AMOSC Duty Manager: ██████████ OSRL Duty Manager: ██████████ KSAT: ██████████ Others identified by CIMT 	Situation	DAY 1: Service provider will confirm availability of an initial acquisition within 2 hours. Data received to be uploaded into Woodside Common Operating Picture.	
Operational monitoring – monitoring hydrocarbons in water (OM03)	Yes	ALL	Consider the need to mobilise resources to undertake water quality monitoring (OM03).	Planning or Environment	DAY 3: Water quality assessment access and capability Daily fluorometry reports will be provided to IMT.	Detecting and Monitoring for the Presence and Properties of Hydrocarbons in the Marine Environment (OM03 of The Operational Monitoring Operational Plan).
Operational monitoring – pre-emptive assessment of receptors at risk (OM04)	Yes	ALL	Consider the need to mobilise resources to undertake pre-emptive assessment of sensitive receptors at risk (OM04).	Planning or Environment	DAY 1-2: In agreement with Vic DTP, deployment of 2 specialists for each of the Response Protection Areas (RPA) with predicted impacts.	Pre-emptive Assessment of Sensitive Receptors (OM04 of The Operational Monitoring Operational Plan).
Operational monitoring – shoreline assessment (OM05)	Yes	ALL	Consider the need to mobilise resources to undertake shoreline assessment surveys (OM05).	Planning or Environment	DAY 1-2: In agreement with Vic DTP, deployment of 2 specialists trained in Shoreline Clean-up Assessment Technique (SCAT) for each of the RPAs with predicted impacts.	Shoreline Assessment (OM05 of The Operational Monitoring Operational Plan).
Surface dispersant	No	N/A	This response strategy is not recommended for a spill of MDO or condensate.			
Containment and recovery	No	N/A	This response strategy is not recommended for a spill of MDO or condensate.			
Mechanical dispersion	No	N/A	This response strategy is not recommended for a spill of MDO or condensate.			

Technique	Hydrocarbon/ spill type MDO	Level	Pre- Identified Tactics	Responsible	ALARP Commitment Summary	Link to Operational Plans for notification numbers and actions
In-situ burning	No	N/A	This response strategy is not recommended for a spill of MDO or condensate.			
Shoreline protection and deflection	Yes	ALL	Equipment from Woodside, Port Authority, AMOSC and AMSA Victorian Stockpiles and relevant personnel mobilised. Consideration of mobilisation of interstate/international shoreline protection equipment (i.e. OSRL).	Operations and Planning	DAY 1-2: In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), mobilise teams to RPAs within 24-48 hours of predicted impact (MDO scenario, CS-02).	Protection and Deflection Operational Plan <i>Logistics to download immediately and follow steps</i>
Shoreline clean-up	Yes	ALL	Equipment from Woodside, Port Authority, AMOSC and AMSA Victorian Stockpiles and relevant personnel mobilised. Consideration of mobilisation of interstate/international shoreline clean-up equipment and relevant personnel (i.e. OSRL).	Logistics and Planning	DAY 1-2: In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), relevant Tactical Response Plans (TRPs) will be identified in the First Strike plan for activation within 24-48 hours of predicted impact. In liaison with regulatory or jurisdictional authority (for Level 2/3 incidents), mobilise and deploy shoreline clean-up operations within 24-48 hours (MDO scenario, CS-02)	Shoreline Clean-up Operational Plan <i>Logistics to download immediately and follow steps</i>
Oiled wildlife response	Yes	ALL	If oiled wildlife is a potential impact, request AMOSC to mobilise containerised oiled wildlife first strike kits and relevant personnel. Refer to relevant Tactical Response Plan for potential wildlife at risk. Mobilise AMOSC Oiled Wildlife Containers. Consider whether additional equipment is required from local suppliers.	Logistics and Planning	DAY 1: Initiate a wildlife first strike response within 24 hours of confirmed or imminent wildlife contact as directed by relevant Operational Monitoring techniques (OM01-05) and in liaison with DEECA.	Oiled Wildlife Response Operational Plan
Scientific monitoring (type II)	Yes	ALL	Notify Woodside science team of spill event.	Environment		Oil Spill Scientific Monitoring Programme – Operational Plan

3. RESPONSE PROTECTION AREAS

Action: Provide relevant Control Agency with applicable Tactical Response Plans for any Response Protection Areas (RPAs) identified during operational monitoring.

Based on hydrocarbon spill modelling results, the sensitive receptors outlined in **Table 3-1** are identified as priority protection areas, as they have the potential to be contacted by hydrocarbon at or above impact threshold levels within 48 hours of a spill.

Table 3-1: Receptors for Priority Protection with Potential Impact within 48 Hours

Receptor	Minimum time to shoreline contact (above 100 g/m ²) in days	Maximum shoreline accumulation (above 100 g/m ²) in tonnes	Tactical Response Plans
Otway Plain	1.0	27	Aire River - Tactical Response Plan
Warrnambool Plain	0.2	187	Curdies Inlet - Tactical Response Plan
Otway Ranges	0.8	7	Gellibrand River (Prinetown Wetlands) - Tactical Response Plan
			Warrnambool - Tactical Response Plan

Tactical Response plans for these locations include the details of potential forward operating bases and staging areas.

Oil Spill Trajectory Modelling specific to the spill event will be required to determine the regional sensitive receptors to be contacted beyond 48 hours of a spill.

Figure 3-1 illustrates the location of regional sensitive receptors in relation to the Minerva Field Decommissioning Operational Area and identifies priority protection areas.

Consideration should be given to other stakeholders (including mariners) in the vicinity of the spill location. **Table 3-2** indicates the assets or title boundaries within the vicinity of the Minerva Field Decommissioning Operational Area.

Table 3-2: Assets in the vicinity of the Minerva Field Decommissioning Operational Area

Asset or title	Distance and Direction from Minerva-4 well	Operator
Thylacine A (TL/2 and TL/4)	59.93 km south	Beach Energy (Operations) Ltd
VIC/P43	5.23 km, south south-west	Beach Energy (Operations) Ltd
VIC/P44	10.51 km west	Cooper Energy (CH) Pty Ltd
VIC/L24	11.74 km west south-west	Cooper Energy (CH) Pty Ltd

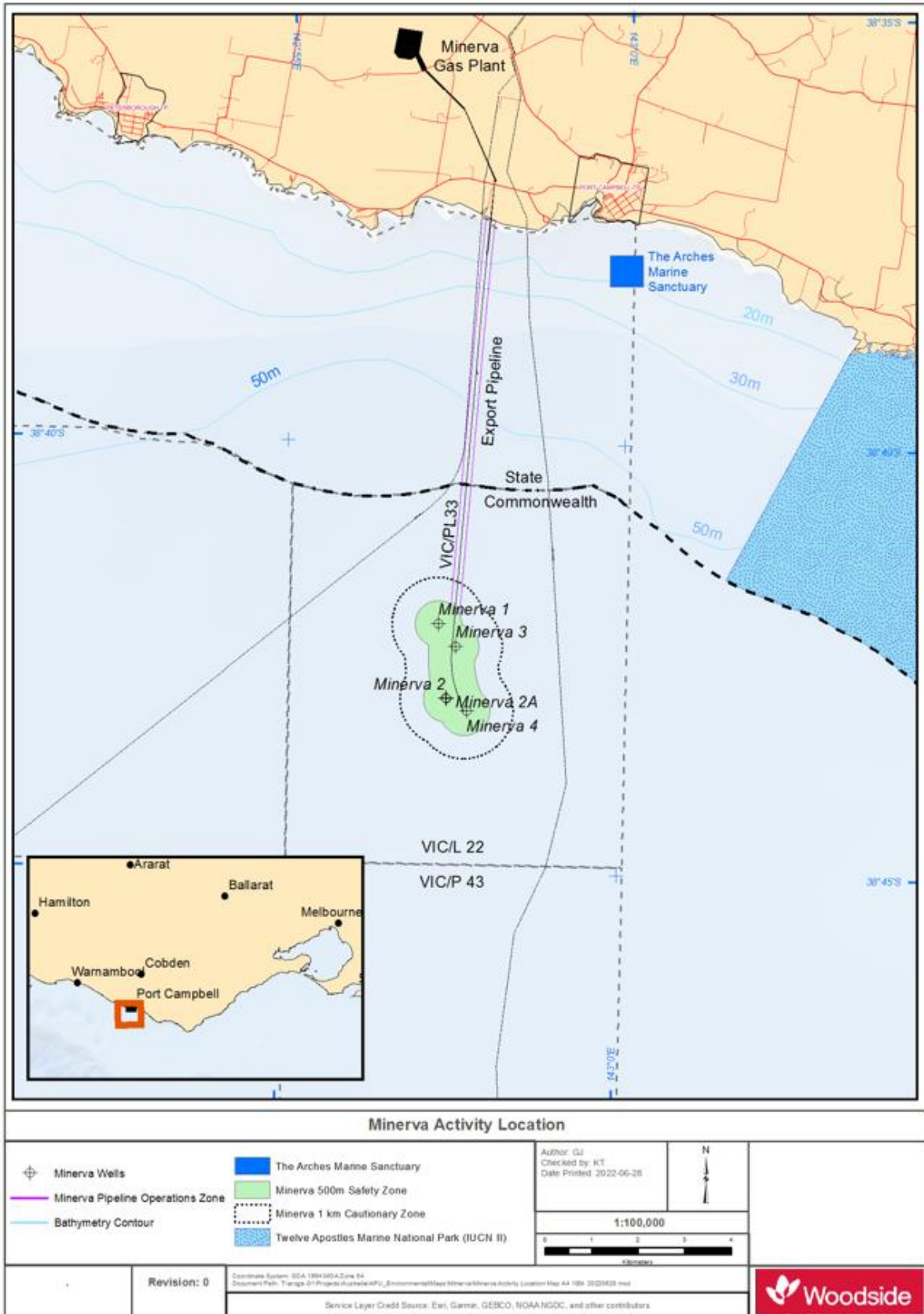


Figure 3-1: Location of activity

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4. DISPERSANT APPLICATION

Dispersant is not considered an appropriate response strategy for these activities as discussed in the Minerva Decommissioning and Field Management Oil Spill Preparedness and Response Mitigation Assessment (OSPRMA).

APPENDIX A – CREDIBLE SPILL SCENARIOS AND HYDROCARBON INFORMATION

Table A - 1: Credible spill scenarios and hydrocarbon information

Scenario	Product	Volume	Wind speed	Residue	Suggested ADIOS2 Analogue ²
Credible Scenario-02 (CS-02) (WCCS) Surface spill of MDO arising from a vessel collision at the nearest point of the operational area to the Victorian coast over 6 hours <i>Lat: 38° 42' 6.89" S Long: 142° 57' 17.28" E</i>	MDO	330 m ³	Low wind	40%, 132 m ³	Marine Diesel (IKU)
			Moderate wind	1%, 3.3 m ³ (within 72 hours)	
			High wind	0%, 0 m ³ (within 12 hours)	

² Initial screening of possible ADIOS2 analogues considered hydrocarbons with similar APIs. Suggested selection is based on the closest distillation cut to the Woodside hydrocarbon. Only hydrocarbons with >380°C distillation cuts were included in selection process.

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APPENDIX B – NOTIFICATION FORMS

Table B - 1: Notification forms

No.	Form Name	Link
1	Record of initial verbal notification to NOPSEMA template	■
2	NOPSEMA Incident Report Form	■
3	Marine Pollution Report (POLREP – AMSA)	■
4	AMOSOC Service Contract	■
5a	OSRL Initial Notification Form	■
5b	OSRL Mobilisation Activation Form	■
6	RPS Response Oil Spill Trajectory Modelling Request	■
7	Aerial Surveillance Observer Log	■
8	Tracking buoy deployment instructions	■

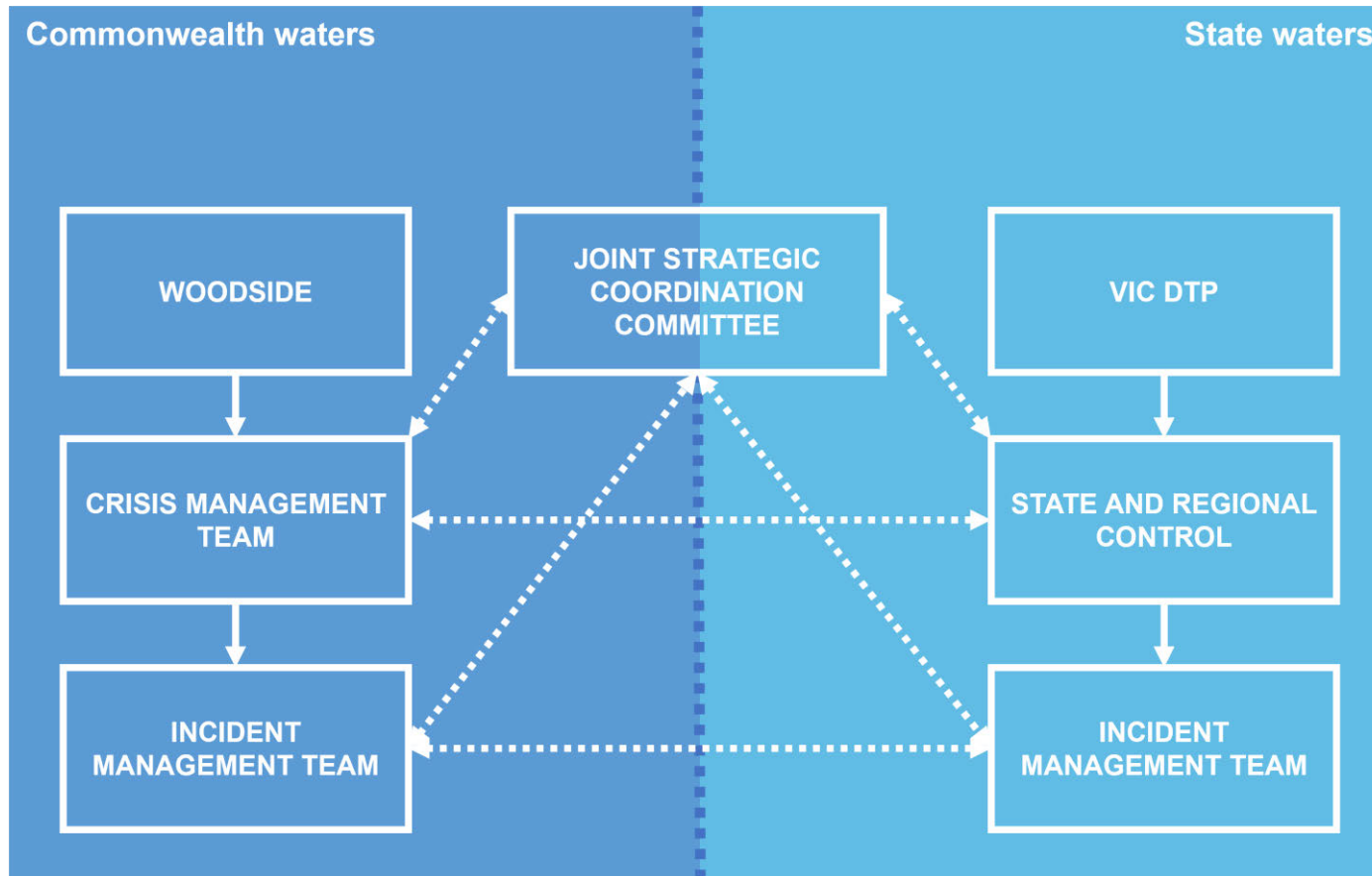
FORM 1 – RECORD OF INITIAL VERBAL NOTIFICATION TO NOPSEMA

NOPSEMA phone: _____		
Date of call		
Time of call		
Call made by		
Call made to		
Information to be provided to NOPSEMA:		
Date and time of incident/ time caller became aware of incident		
Details of incident	1. Location	
	2. Title	
	3. Source	<input type="checkbox"/> Platform
		<input type="checkbox"/> Pipeline
		<input type="checkbox"/> FPSO
		<input type="checkbox"/> Exploration drilling
		<input type="checkbox"/> Well
	<input type="checkbox"/> Other (please specify)	
	4. Hydrocarbon type	
	5. Estimated volume	
6. Has the discharge ceased?		
7. Fire, explosion or collision?		
8. Environment Plan(s)		
9. Other Details		
Actions taken to avoid or mitigate environmental impacts		
Corrective actions taken or proposed to stop, control or remedy the incident		
After the initial call is made to NOPSEMA, please send this record as soon as practicable to:		
NOPSEMA	_____	
NOPTA	_____	
ERR	_____	

APPENDIX C – SPILL ASSESSMENT QUESTIONS

What has happened?		
Date/time		
Spill source		
Spill cause		
Safety situation		
What is it?		
Oil type and name		
Oil properties	Specific gravity	
	Viscosity	
	Pour point	
	Asphaltenes	
	Wax content	
	Boiling point	
Where is it?		
Latitude and longitude		
Distance and bearing		
Affected area	<input type="checkbox"/> Offshore	
	<input type="checkbox"/> Subsea	
	<input type="checkbox"/> Shoreline	
	<input type="checkbox"/> Estuary	
	<input type="checkbox"/> Port	
	<input type="checkbox"/> Harbour	
	<input type="checkbox"/> Inland	
	<input type="checkbox"/> River	
	<input type="checkbox"/> Other (please detail):	
Water depth		
How big is it?		
Area		
Release type	<input type="checkbox"/> Instantaneous	Estimated volume:
	<input type="checkbox"/> Continuous release	Estimated release rate:
Where it is going?		
Metocean conditions		
Currents and tides		
What is in the way?		
Resources at risk		
Time until resource contact		
What's happening to it?		
Weathering processes		
Response actions underway		

APPENDIX D – COORDINATION STRUCTURE FOR A CONCURRENT HYDROCARBON SPILL IN BOTH COMMONWEALTH AND STATE WATERS/ SHORELINES³



The Control Agency for a hydrocarbon spill in Commonwealth waters resulting from an offshore petroleum activity is Woodside (the Petroleum Titleholder).

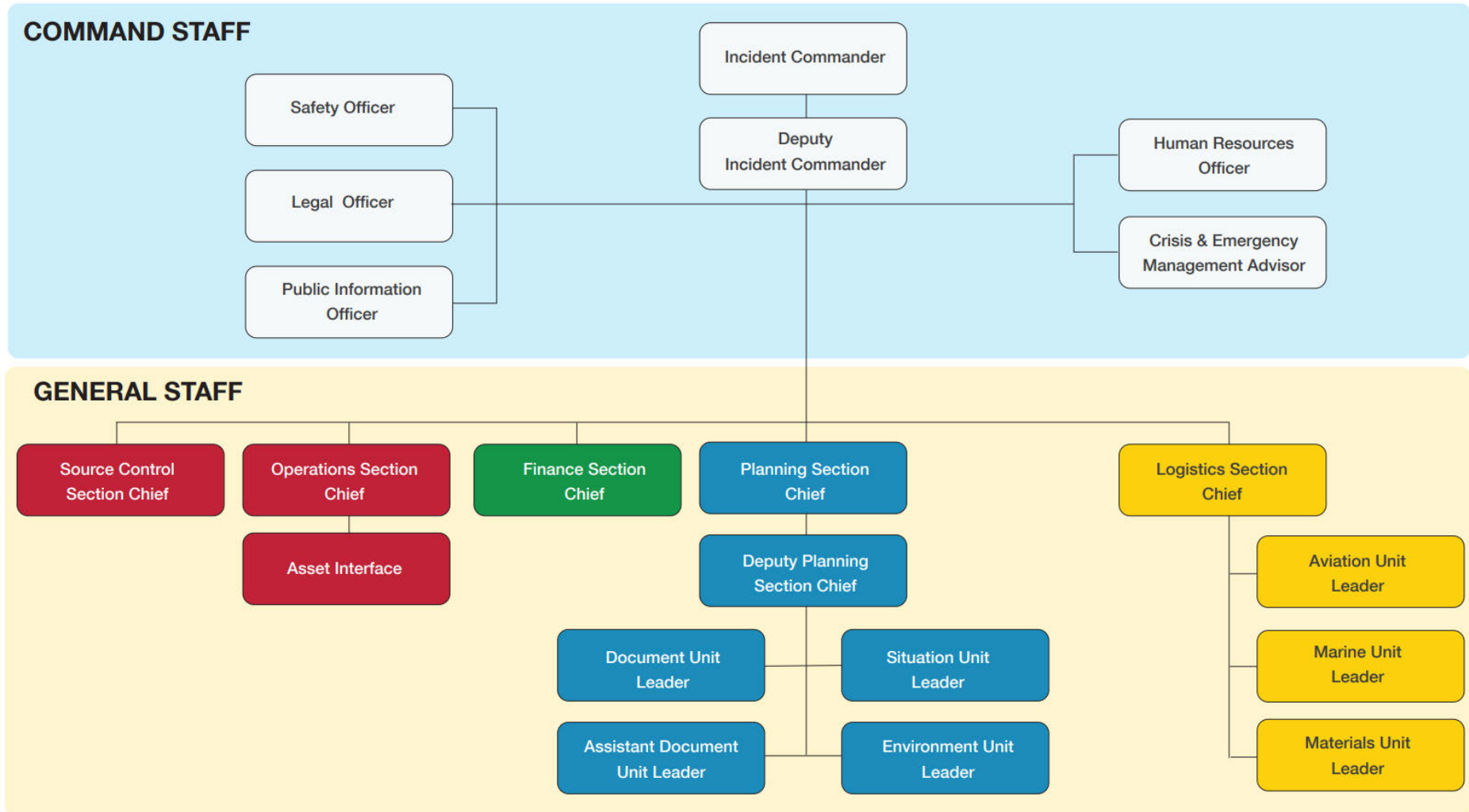
The Control Agency/HMA for a hydrocarbon spill in State waters/shorelines resulting from an offshore petroleum activity is Vic DTP. Vic DTP will appoint an Incident Controller and form a separate IMT to only manage the spill within State waters/shorelines.

³ Adapted from Victorian Joint Industry and State Oil Pollution Responses Guidance Note, V2.4 2023

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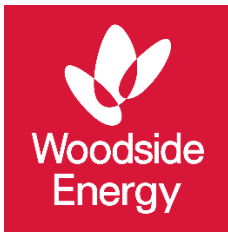
APPENDIX E – WOODSIDE INCIDENT MANAGEMENT STRUCTURE

Woodside Corporate Incident Management Team structure for hydrocarbon spills:



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Appendix F Consultation



Appendix F

Minerva Decommissioning and Field Management Environment Plan

- **Table 1: Assessment of Relevance**
- **Consultation Activities**
- **Table 2: Consultation Report with Relevant Persons or Organisations**
- **Table 3: Engagement Report with Persons or Organisations Assessed as Not Relevant**
- **Record of Consultation**

Date: March 2024

Revision: 0

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RELEVANCY ASSESSMENT

Assessment of Relevant Persons for the Proposed Activity

The result of Woodside’s assessment of relevant persons in accordance with regulation 25 (1) is outlined below at **Table 1** and **Table 2**.

Persons or organisations that Woodside assessed as not relevant but nonetheless chose to contact at its discretion in accordance with **Section 5.3.4** in the EP or self-identified and Woodside assessed as not relevant are summarised below at **Table 1** and **Table 3**.

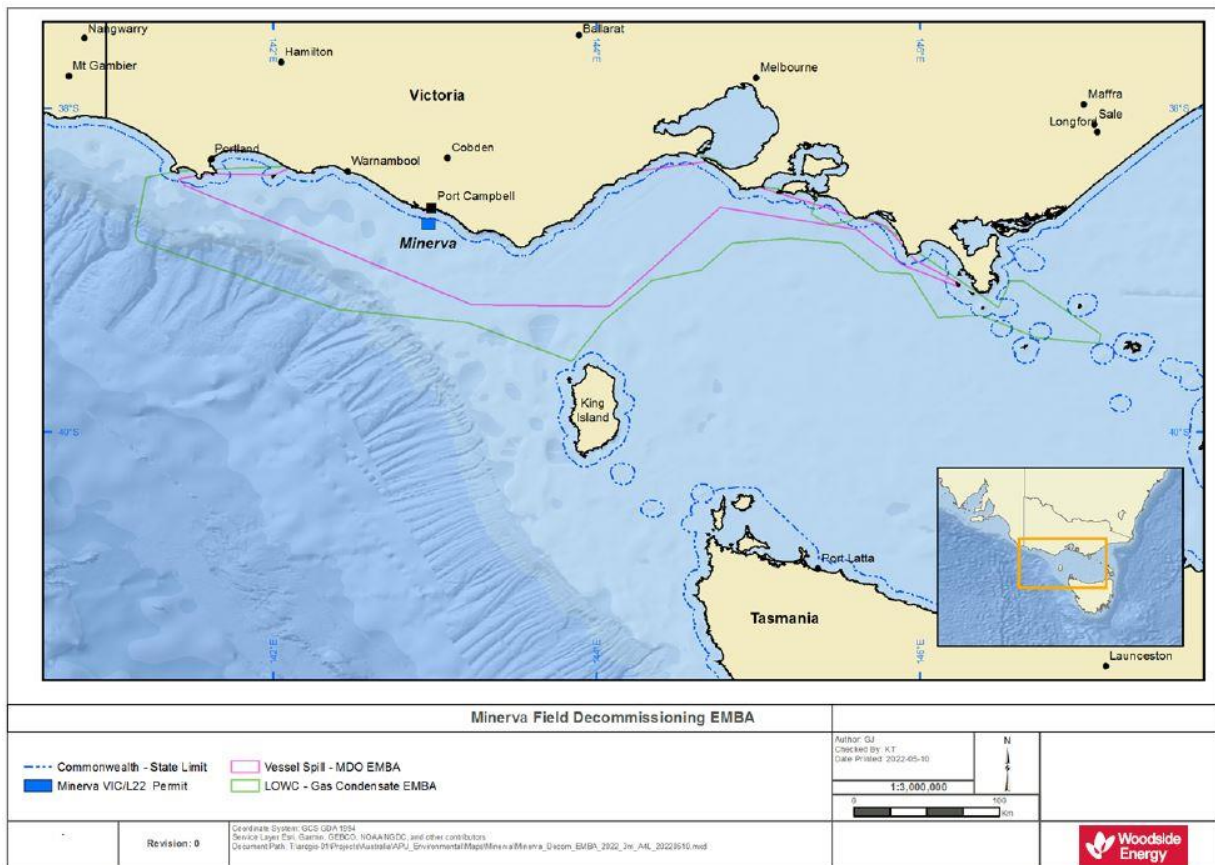


Figure 1: Operational Area and EMBA for this EP

Table 1: Assessment of Relevance

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Commonwealth and Victorian Government Departments or Agencies – Marine			
Australian Border Force (ABF)	Responsible for coordinating maritime security.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations. ABF's functions may be relevant to the activity as there are proposed vessel activities.	Yes
Australian Communications and Media Authority (ACMA)	Regulator for communications and media services.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations. ACMA's responsibilities are not relevant to the activity as telecommunications lines do not intersect the Operational Area.	No
Australian Fisheries Management Authority (AFMA)	Responsible for managing Commonwealth fisheries.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations. AFMA's responsibilities may be relevant to the activity as the Southern and Eastern Scalefish and Shark Fishery (SESSF) – CTS and Shark Gillnet and Shark Hook Sectors, and Southern Squid Jig are active in the Operational Area. AFMA's responsibilities may further be relevant to the activity as the Bass Strait Central Zone Scallop Fishery, Southern and Eastern Scalefish and Shark Fishery (SESSF) – CTS and Shark Gillnet and Shark Hook Sectors and Southern Squid Jig are active in the EMBA.	Yes
Australian Hydrographic Office (AHO)	Responsible for maritime safety and Notices to Mariners.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations. AHO's responsibilities may be relevant to the activity as there are proposed vessel activities and infrastructure is proposed to be left <i>in situ</i> , requiring navigational chart updates.	Yes
Australian Maritime Safety Authority (AMSA) – Marine Safety	Statutory agency for vessel safety and navigation.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations. AMSA – Marine Safety's responsibilities may be relevant to the activity as there are proposed vessel activities.	Yes
Australian Maritime Safety Authority (AMSA) – Marine Pollution	Legislated responsibility for oil pollution response in Commonwealth waters.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(a) of the Environment Regulations.	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
		AMSA – Marine Pollution’s responsibilities may be relevant to the activity as the proposed activity has a hydrocarbon spill risk which may require AMSA response in Commonwealth waters.	
Department of Agriculture, Fisheries and Forestry (DAFF) –Fisheries	Responsible for implementing Commonwealth policies and programs to support agriculture, fishery, food and forestry industries.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations. DAFF - Fisheries responsibilities may be relevant to the activity as the Southern and Eastern Scalefish and Shark Fishery (SESSF) – CTS and Shark Gillnet and Shark Hook Sectors, and Southern Squid Jig are active in the Operational area. DAFF - Fisheries responsibilities may further be relevant to the activity as the Bass Strait Central Zone Scallop Fishery, Southern and Eastern Scalefish and Shark Fishery (SESSF) – CTS and Shark Gillnet and Shark Hook Sectors and Southern Squid Jig are active in the EMBA.	Yes
Department of Defence (DoD)	Responsible for defending Australia and its national interests.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(a) of the Environment Regulations. DoD’s responsibilities may be relevant to the activity as defence training areas lie within the EMBA.	Yes
Department of Energy, Environment and Climate Action (DEECA) - Earth Resources Regulator Resources Victoria	Responsible for Victorian policy areas of energy, environment, water, agriculture, forestry, resources, climate action, and emergency management functions. Regulatory body for oil and gas.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(b) of the Environment Regulations of the Environment Regulations. DEECA’s responsibilities may be relevant to the activity as the State agency responsible for responding to wildlife affected by a marine pollution emergency in Victorian waters.	Yes
Department of Transport and Planning (DTP)	Prepares for and effectively responds to a marine pollution incident in State coastal waters up to three nautical miles (3 nm) offshore. Responsible for Victoria’s ports.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(b) of the Environment Regulations of the Environment Regulations. The proposed activity has a hydrocarbon spill risk, which may require DTP response in State waters.	Yes
Department of Premier and Cabinet - First Peoples State Relations	Responsible for work in the areas of First Nations community strengthening and engagement, self-determination, treaty, and cultural heritage management and protection.	Woodside has applied its methodology for ‘Government departments / agencies – marine’ under regulation 25(1)(b) of the Environment Regulations of the Environment Regulations. The Department’s responsibilities may be relevant to the activity as Traditional Custodians and Nominated Representative Corporations have been identified as relevant persons to the activity with Registered Native Title overlapping the EMBA.	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Heritage Victoria	Responsible for protections to archaeological sites, shipwrecks, aircraft wrecks and submerged Aboriginal heritage sites.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations of the Environment Regulations. There is known Maritime Cultural Heritage overlapping the EMBA.	Yes
Port of Melbourne	Responsible for the operation of the port.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations of the Environment Regulations. The proposed activity has the potential to impact Port of Melbourne's functions, interests or activities as the EMBA overlaps the port areas of responsibility.	Yes
Port of Hastings	Responsible for the operation of the port.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations of the Environment Regulations. The proposed activity has the potential to impact Port of Hastings' functions, interests or activities as the EMBA overlaps the port areas of responsibility.	Yes
Port of Warrnambool	Responsible for the operation of the port.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations of the Environment Regulations. The proposed activity has the potential to impact Port of Warrnambool's functions, interests or activities as the EMBA overlaps the port areas of responsibility.	Yes
Port of Portland	Responsible for the operation of the port.	Woodside has applied its methodology for 'Government departments / agencies – marine' under regulation 25(1)(b) of the Environment Regulations of the Environment Regulations. The proposed activity has the potential to impact Port of Portland's functions, interests or activities as the EMBA overlaps the port areas of responsibility.	Yes
Victorian Fisheries Authority (VFA)	Independent statutory authority responsible for managing Victoria's fisheries resources. There are five Victorian state-managed fisheries that overlap the operational area.	Required to be consulted under regulation 25(1)(c) of the Environment Regulations. The Rock Lobster, Giant Crab, Abalone, Wrasse and Snapper fisheries have been active in the Operational Area within the last 5 years. The Rock Lobster, Giant Crab, Abalone, Wrasse and Snapper fisheries have been active in the EMBA within the last 5 years. VFA's functions may be relevant to the activity as the authority responsible for State fisheries.	Yes
Commonwealth and Victorian Government Departments or Agencies – Environment			

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
<p>Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity (marine pests, vessels, aircraft and personnel)</p>	<p>DAFF administers, implements and enforces the Biosecurity Act 2015. The Department requests to be consulted where an activity has the potential to transfer marine pests. DAFF also has inspection and reporting requirements to ensure that all conveyances (vessels, installations and aircraft) arriving in Australian territory comply with international health Regulations and that any biosecurity risk is managed. The Department requests to be consulted where an activity involves the movement of aircraft or vessels between Australia and offshore petroleum activities either inside or outside Australian territory.</p>	<p>Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. DAFF – Biosecurity's functions may be relevant to the proposed activities in the EMBA in the prevention of introduced marine species.</p>	<p>Yes</p>
<p>Department of Climate Change, Energy, the Environment and Water (DCCEEW)</p>	<p>Responsible for implementing Commonwealth policies and programs to support climate change, sustainable energy use, water resources, the environment and our heritage. Administers the <i>Underwater Cultural Heritage Act 2018 in collaboration with the States, Northern Territory and Norfolk Island, which is responsible for the protection of shipwrecks, sunken aircraft and other types of underwater heritage and their associated artefacts in Commonwealth waters.</i></p>	<p>Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. DCCEEW's functions may be relevant to the proposed activities in the EMBA as there are potential environmental impacts from the proposed activity. There is known Maritime Cultural Heritage overlapping the EMBA.</p>	<p>Yes</p>
<p>Director of National Parks (DNP)</p>	<p>Responsible for the management of Commonwealth parks and conservation zones.</p>	<p>Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. DNP's functions may be relevant to the activity as DNP requires an awareness of activities that occur within AMPs, and an understanding of potential impacts and risks to the values of parks (NOPSEMA guidance note: N-04750-GN1785 A620236,</p>	<p>Yes</p>

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
		June 2020). Titleholders are required to consult DNP on offshore petroleum activities if they occur in, or may impact on the values of marine parks, including where potential spill response activities may occur in the event of a spill (i.e. scientific monitoring).	
Parks Victoria	Statutory authority of the Victorian Government acting in accordance with the Parks Victoria Act 2018.	Woodside has applied its methodology for 'Government departments / agencies – environment' under regulation 25(1)(a) of the Environment Regulations. Parks Victoria's functions may be relevant to the activity as they manage marine parks, sanctuaries, reserves, and protected areas.	Yes
Commonwealth and Victorian Government Departments or Agencies – Industry			
Department of Industry, Science and Resources (DISR)	Department of relevant Commonwealth Minister.	Required to be consulted under regulation 25(1)(a) of the Environment Regulations.	Yes
Commonwealth Commercial Fisheries and Representative Bodies			
Bass Strait Central Zone Scallop Fishery	Commonwealth commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery overlaps the Operational Area and EMBA and has been active in the EMBA within the last 5 years.	Yes
Eastern Tuna and Billfish Fishery	Commonwealth commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the last 5 years.	No
Skipjack Tuna Fishery (Eastern)	Commonwealth commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the last 5 years.	No
Small Pelagic Fishery (Western sub-area)	Commonwealth commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the last 5 years.	No

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine	Commonwealth commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery (CTS) overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook	Commonwealth commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery (Shark Gillnet) overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Southern Bluefin Tuna Fishery	Commonwealth commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Although the fishery overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the last 5 years.	No
Southern Squid Jig Fishery	Commonwealth commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Commonwealth Fisheries Association (CFA)	Represents the interests of commercial fishers with licences in Commonwealth waters.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. CFA's functions may be relevant to the activity as the SESSF – CTS and Shark Gillnet Sectors and Southern Squid Jig are active in the Operational Area. Further, CFA's functions may be relevant as the Bass Strait Central Zone Scallop Fishery, SESSF – CTS and Shark Gillnet and Southern Squid Jig are active in the EMBA.	Yes
Australian Southern Bluefin Tuna Industry Association (ASBTIA)	Represents the interests of the Southern Bluefin Tuna Fishery and Western Skipjack Fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The Southern Bluefin Tuna Fishery has been assessed as not relevant to the proposed activity. As the peak representative body for the Southern Bluefin Tuna Fishery, the ASBTIA has also been assessed as not relevant.	No

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
		Woodside has provided information to the ASBTIA at its discretion in line with Section 5.3 on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.	
Tuna Australia	Represents the interests of the Eastern Tuna and Billfish Fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The Eastern Tuna and Billfish Fishery has been assessed as not relevant to the proposed activity. As the peak representative body for the Western Tuna and Billfish Fishery, Tuna Australia has also been assessed as not relevant. Woodside has provided information to Tuna Australia at its discretion in line with Section 5.3 on AFMA advice that it expects all Commonwealth fishers who have entitlements to fish within the proposed area to be consulted, which can be through the relevant fishing industry associations.	No
Bass Strait Scallop Industry Association (BSSIA)	Represents the interests of the Bass Strait Central Zone Scallop Fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery (Bass Strait Central Zone Scallop Fishery) represented overlaps the Operational Area and EMBA and has been active in the EMBA within the last 5 years.	Yes
Small Pelagic Fishery Industry Association (SPFIA)	Represents the interests of the commercial fishing industry in the Small Pelagic Fishery (Western sub-area) Fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Although the fishery (Small Pelagic Fishery (Western sub-area)) represented overlaps the Operational Area and EMBA, it has not been active in the Operational Area or EMBA within the last 5 years.	No
South East Trawl Fishing Industry Association (SETFIA)	Represents the interests of the commercial fishing industry in the Small Pelagic Fishery (Western sub-area) Fishery and the Southern and Eastern Scafish and Shark Fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fisheries (SESSF - CTS and Shark Gillnet) represented overlap the Operational Area and EMBA and have been active in the Operational Area and EMBA within the last 5 years.	Yes
Southern Shark Industry Alliance (SSIA)	Represents the interests of the commercial fishing industry in the	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
	Southern and Eastern Scalefish and Shark Fishery.	The fishery (SESSF – Shark Gillnet) represented overlaps the Operational Area and EMBA and has been active in the Operational and EMBA within the last 5 years.	
Southern Rock Lobster Limited	National peak body working to further the interests of the Australian Southern Rock Lobster industry.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery (Rock Lobster Fishery) represented overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
State Commercial Fisheries and Representative Bodies			
Rock Lobster Fishery	State commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Giant Crab Fishery	State commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Abalone Fishery	State commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Wrasse Fishery	State commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Scallop Fishery	State commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.	No

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
		Although the fishery overlaps the Operational Area and EMBA, the fishery has not been active in the Operational Area or EMBA within the last 5 years.	
Snapper Fishery	State commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Octopus Fishery	State commercial fishery.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Although the fishery overlaps the Operational Area and EMBA, the fishery has not been active in the Operational Area or EMBA within the last 5 years.	No
Seafood Industry Victoria (SIV)	Representative peak body for the Victorian seafood industry.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fisheries (Rock Lobster, Giant Crab, Wrasse, and Snapper) represented overlap the Operational Area and EMBA and have been active in the Operational Area and EMBA within the last 5 years.	Yes
Abalone Council Victoria	Peak body representing the wild harvest abalone sector in Victoria, uniting the Western Abalone Divers Association, Abalone Victoria Central Zone, Eastern Zone Abalone Industry Association and the Victorian Abalone Processors Association.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery (Abalone) represented overlaps the Operational Area and EMBA and has been active in the EMBA within the last 5 years.	Yes
Abalone Victoria Central Zone	Represent the interests of Abalone Central Zone entitlement holders on operational fishery management matters.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery (Abalone) overlaps the Operational Area and EMBA and has been active in the EMBA within the last 5 years.	Yes
Victorian Scallop Fishermen's Association Inc	Represents Victorian scallop fishermen and their families.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations.	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
		The fishery (Scallop) represented overlaps the Operational Area and EMBA and has been active in the EMBA within the last 5 years.	
Victorian Rock Lobster Association (VRLA)	Represents Victorian rock lobster industry members.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. The fishery (Rock Lobster Fishery) represented overlaps the Operational Area and EMBA and has been active in the Operational Area and EMBA within the last 5 years.	Yes
Apollo Bay Fishermen's Cooperative	Retail and distribution outlet for local fishers.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Apollo Bay Fishermen's Cooperative's functions may be relevant to the activity as they may represent professional fishers that operate within the Operational Area or EMBA.	Yes
South Eastern Professional Fishermen's Association Inc.	Represents the interests of local professional fishers.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. South Eastern Professional Fishermen's Association Inc's functions may be relevant to the activity as they may represent professional fishers that operate within the Operational Area or EMBA.	Yes
Warrnambool Professional Fishermen's Association	Represents the interests of local professional fishers.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Warrnambool Professional Fishermen's Association's functions may be relevant to the activity as they may represent professional fishers that operate within the Operational Area or EMBA.	Yes
Eastern Victorian Rock Lobster Industry Association	Represents the interests of local professional fishers.	Woodside has applied its methodology for 'Commercial fisheries (Commonwealth and State) and peak representative bodies' under regulation 25(1)(d) of the Environment Regulations. Eastern Victorian Rock Lobster Industry Association's functions may be relevant to the activity as they may represent professional fishers that operate within the Operational Area or EMBA.	Yes
Recreational Marine Users, Tourism and Representative Bodies			

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Otway Recreational Marine Users	Otway-based recreational, tourism and charter operators.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. Apollo Bay Dive Centre and Surf, Apollo Bay Fishing Charters, Apollo Bay Surf and Kayak, Dive Industry Association of Australia, Go Surf School, SCUBA Divers Federation of Victoria, Apollo Bay Surf Lifesaving Club, Apollo Bay Sailing Club, Ocean Racing Club of Victoria, Twelve Apostles Helicopters, Academy of Scuba, Allfresh Seafood, Anglesea Motor Yacht Club, Boating Industry Association of Victoria, Diving Industry Victoria, Paddle Victoria, Point Leo Boat Club, Port Fairy Yacht Club, Rye Yacht Club, Victoria Game Fishing Club, Warrnambool Yacht Club, Western Abalone Divers Association, Port Campbell Surf Lifesaving, Beach Patrol 3280.</p> <p>Proposed activities have the potential to impact Otway region dive, surf, tourism and charter operator's functions, interests, or activities due to activities in within the EMBA or Operational Area.</p>	Yes
VR Fish	Peak body for recreational fishers in Victoria.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. VR Fish's functions may be relevant to the activity as they may represent recreational fishers within the EMBA or Operational Area.</p>	Yes
Port Campbell Visitor Information Centre	Tourism body.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. The Centre's area of interest and activity overlaps the EMBA.</p>	Yes
Apollo Bay Visitor Information Centre	Tourism body.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. The Centre's area of interest and activity overlaps the EMBA.</p>	Yes
Warrnambool Visitor Information Centre	Tourism body.	<p>Woodside has applied its methodology for 'Recreational marine users and representative bodies' under regulation 25(1)(d) of the Environment Regulations. The Centre's area of interest and activity overlaps the EMBA.</p>	Yes
Great Ocean Road Regional Tourism Ltd	Independent peak body for the tourism sector along the Great Ocean Road and Surf Coast, covering the geographical area of Torquay to the South Australian border, including the local government areas of Colac Otway, Corangamite, Moyne,	<p>Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations.</p> <p>The area of responsibility of Great Ocean Road Regional Tourism overlaps the EMBA.</p>	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
	Warrnambool, Glenelg and the Surf Coast.		
Twelve Apostles Tourism and Business Group	Membership-based organisation that provides leadership for the development and facilitation of local tourism and business initiatives. Based in Port Campbell.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The area of responsibility of Twelve Apostles Tourism and Business Group overlaps the EMBA.	Yes
Titleholders and Operators			
Beach Energy	Titleholder or Operator.	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlap the EMBA.	Yes
Cooper Energy	Titleholder or Operator.	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlap the EMBA.	Yes
Conoco Phillips Australia	Titleholder or Operator.	Woodside has applied its methodology for 'Titleholders and Operators' under regulation 25(1)(d) of the Environment Regulations. Titleholder or Operator's permit areas overlap the EMBA.	Yes
Peak Industry Representative Bodies			
Australian Energy Producers (AEP)	Represents the interests of oil and gas explorers and producers in Australia.	Woodside has applied its methodology for 'Peak Industry Representative bodies' under regulation 25(1)(d) of the Environment Regulations. AEP's responsibilities are identified as having an intersect with Woodside's planned activities in the EMBA.	Yes
Traditional Custodians and Nominated Representative Corporations			
Bunurong Land Council Aboriginal Corporation	Representative Aboriginal Corporation.	Woodside has applied its methodology for 'Traditional Custodians' and Nominated Representative Corporations' under regulation 25(1)(d) of the Environment Regulations. BLCAC is a Registered Aboriginal Party (RAP) under the Aboriginal Heritage Act 2006 (Vic) for the country recognised as Bunurong/Boonwurrung (various spellings). BLCAC is legally recognised as the primary guardians, keepers and knowledge holders and experts of Aboriginal cultural heritage in their area. BLCAC membership is open to and representative of all Bunurong/Boonwurrung people.	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
		<p>There are no Prescribed Body Corporates (PBCs) under the Native Title Act 1993 (Cth) or TOCs under the Traditional Owner Settlement Act 2010 over that area.</p> <p>An application by some members of the Boonwurrung people lodged a native title claim over an overlapping area in 2021. This native title claim was not accepted by the National Native Title Registrar which means it did not meet all the requirements for a prima facie claim. An issue for this claim is that it is not representative or open to all members of the Bunurong/Boonwurrung people.</p>	
Eastern Maar Aboriginal Corporation (EMAC)	Representative Aboriginal Corporation.	<p>Woodside has applied its methodology for 'Traditional Custodians' under regulation 25(1)(d) of the Environment Regulations.</p> <p>EMAC is recognised as a PBC by the Federal Court as holding the native title rights and interests of the Eastern Maar People over most (not all) of their native title claim area. Some sections of overlap with neighbouring groups, the Gunditjmara and Wurundjeri, are still to be settled. EMAC is, however, a RAP under the Aboriginal Heritage Act 2006 (Vic) for Eastern Maar land and nearshore areas.</p>	Yes
Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC)	Representative Aboriginal Corporation.	<p>Woodside has applied its methodology for 'Traditional Custodians' under regulation 25(1)(d) of the Environment Regulations.</p> <p>GMTOAC is recognised as a PBC by the Federal Court as holding the native title rights and interests of the Gunditjmara People over most (not all) of their native title claim area. Some sections of overlap with neighbouring group, the Eastern Maar, are still to be settled. GMTOAC is, however, a registered Aboriginal party (RAP) under the Aboriginal Heritage Act 2006 (Vic) for the areas of Gunditjmara land and waters for which it is recognised under native title.</p>	Yes
Wadawurrung Traditional Owners Aboriginal Corporation	Representative Aboriginal Corporation.	<p>Woodside has applied its methodology for 'Traditional Custodians' under regulation 25(1)(d) of the Environment Regulations.</p> <p>Wadawurrung is a RAP under the Aboriginal Heritage Act 2006 (Vic) for the country recognised as belonging to the Wadawurrung people. Wadawurrung is legally recognised as the primary guardians, keepers and knowledge holders and experts of Aboriginal cultural heritage in their area. Wadawurrung membership is open to and representative of all Wadawurrung people.</p> <p>There are no PBCs under the Native Title Act 1993 (Cth) or TOCs under the Traditional Owner Settlement Act 2010 over that area.</p> <p>Part of the Wadawurrung RAP is subject to a native title claim by the Eastern Maar people.</p>	Yes
Gunaikurnai Land & Waters Aboriginal	Representative Aboriginal Corporation.	Woodside has applied its methodology for 'Traditional Custodians' under regulation 25(1)(d) of the Environment Regulations.	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Corporation (GLWAC)		The GLWAC is recognised as a PBC by the Federal Court as holding the native title rights and interests of the Gunaikurnai People over their land, waters and nearshore areas. They are also recognised as a TOC under the Traditional Owner Settlement Act 2010 and are a RAP under the Aboriginal Heritage Act 2006.	
Native Title Representative Bodies			
First Nations Legal and Research Services (FNLRS)	Established in 2003, FNLRS is a Native Title service provider for Victorian Traditional Owners. As such, they are not a Prescribed or Registered Native Title Body Corporate but work with Traditional Owner groups who wish to pursue land justice outcomes in Victoria through formal recognition including through the provision of Community Liaison Officers, lawyers and researchers.	Woodside has applied its methodology for 'Native Title Representative Bodies' under regulation 25(1)(d) of the Environment Regulations. FNLRS' functions may be relevant to the proposed activity in relation to its facilitation and coordination function as a Native Title Representative Body under applicable federal legislation.	Yes
Local Government and Community Representative Groups or Organisations			
Bass Coast Shire	Local government governed by the Local Government Act 2020 representing the suburbs and localities of Wonthaggi, Cowes, Inverloch, San Remo and Grantville.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Bass Coast Shire's area of responsibility overlaps the EMBA.	Yes
Colac Otway Shire	Local government governed by the Local Government Act 2020 representing the suburbs and localities of Colac and Elliminyt, Apollo Bay and Marengo.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Colac Otway Shire's area of responsibility overlaps the EMBA.	Yes
Corangamite Shire	Local government governed by the Local Government Act 2020 representing suburbs and localities in Barwon South West, including Port Campbell, Camperdown and Cobden.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Corangamite Shire's area of responsibility overlaps the EMBA.	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Glenelg Shire	Local government governed by the Local Government Act 2020 representing suburbs and localities in Barwon South West, including Heywood, Merino and Portland.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Glenelg Shire's area of responsibility overlaps the EMBA.	Yes
Mornington Peninsula Shire	Local government governed by the Local Government Act 2020 in south-eastern Metropolitan Melbourne. It represents the wards of Briars, Cerberus, Nepean, Red Hill, Seawinds and Watson.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Mornington Peninsula Shire's area of responsibility overlaps the EMBA.	Yes
Moyne Shire	Local government governed by the Local Government Act 2020 representing suburbs and localities in Barwon South West, including the Shipwreck Coast and Port Fairy.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Moyne Shire's area of responsibility overlaps the EMBA.	Yes
South Gippsland Shire	Local government governed by the Local Government Act 2020 representing the suburbs and localities in south-eastern Victoria including Wilsons Promontory Mirboo North and Korumburra.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The South Gippsland Shire area of responsibility overlaps the EMBA.	Yes
Surf Coast Shire	Local government governed by the Local Government Act 2020 representing the suburbs and localities in Barwon South West including Torquay, Lorne and Aireys Inlet. It is the official start of the Great Ocean Road.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Surf Coast Shire's area of responsibility overlaps the EMBA.	Yes
Greater Geelong Shire	Local government governed by the Local Government Act 2020 representing the suburbs and localities in Barwon South West region, including Belmont, Corio, Ocean Grove and Highton.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Greater Geelong Shire's area of responsibility overlaps the EMBA.	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Borough of Queenscliffe	Local government governed by the Local Government Act 2020 representing the suburbs and localities in Barwon South West region, including Point Lonsdale, Queenscliff and Swan Island.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Borough of Queenscliffe's area of responsibility overlaps the EMBA.	Yes
Warrnambool City Shire Council	Local government governed by the Local Government Act 2020 in Barwon South West region, representing the urban district of Warrnambool.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Warrnambool City Shire Council's area of responsibility overlaps the EMBA.	Yes
Apollo Bay Chamber of Commerce	Independent not-for-profit organisation responsible for promoting the interests of its members in the business community in Apollo Bay and surrounding areas.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Apollo Bay Chamber of Commerce's interests have the potential to be impacted by the proposed activities.	Yes
Great Ocean Road Coast and Parks Authority	Delivers protection and management of the coast and parks of Victoria's Great Ocean Road.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The area of responsibility of Great Ocean Road Coast and Parks Authority overlaps the EMBA.	Yes
Port Campbell Community Group	Local community group.	Woodside has applied its methodology for 'Local government and community representative groups or organisations' under regulation 25(1)(d) of the Environment Regulations. The Port Campbell Community Group's interests have the potential to be impacted by the proposed activities.	Yes
Other Non-Government Groups or Organisations			
Environment Victoria	Non-government organisation.	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that Environment Victoria's public website material and feedback demonstrates an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2).	Yes

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Australian Coastal Society - Victorian Chapter	Non-government organisation.	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that Australian Coastal Society – Victorian Chapter's public website material and feedback demonstrates an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2).	Yes
Marine Mammal Foundation	Non-government organisation.	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that Marine Mammal Foundation's public website material and feedback demonstrates an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2).	Yes
Australian Conservation Foundation (ACF)	Non-government organisation.	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that ACF's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2). Woodside chose to contact ACF at its discretion in line with Section 5.3	No
Australian Marine Conservation Society (AMCS)	Non-government organisation.	During the course of preparing the EP, AMCS self-identified, provided comment on the proposed activity and requested to be consulted. Woodside has applied its methodology for 'Additional persons' and 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that AMCS's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2).	No
Greenpeace Australia Pacific (GAP)	Non-government organisation.	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine GAP's relevance for the proposed activity. Woodside has assessed that GAP's public website material does not demonstrate an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2). Woodside chose to contact GAP at its discretion in line with Section 5.3.	No

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
Maritime Union of Australia (MUA)	Union representing members in the maritime industries.	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine the MUA's relevance for the proposed activity. Woodside has assessed that the MUA's feedback demonstrates an intersect with potential risks and impacts specific to the proposed petroleum activity and is in accordance with the intended outcome of consultation (as set out in Section 5.2).	Yes
Friends of the Earth Australia	Non-government organisation.	Woodside has applied its methodology for 'Other non-government groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine Friends of the Earth's relevance for the proposed activity. Friends of the Earth self-identified in February 2023 in written correspondence to Woodside advising they represent 'a number of eNGOS' (these have not been identified to Woodside) who meet regularly to discuss the energy sector. The group has allocated Friends of the Earth to manage its decommissioning interests.	Yes
Research Institutes and Local Conservation Groups or Organisations			
Blue Whale Study	Research institute.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Woodside has assessed that Blue Whale Study's public website material and feedback demonstrates an interest with the potential risks and impacts associated with planned activities in accordance with the intended outcome of consultation (as set out in Section 5.2).	Yes
Deakin University - School of Life and Environmental Sciences	Research institute.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine Deakin University – School of Life and Environmental Science's relevance for the proposed activity. There is no known research being undertaken by the University that intersects within the EMBA. Woodside chose to contact the University at its discretion in line with Section 5.3 of the EP.	No
Fisheries Research and Development Corporation	Co-funded partnership between the Australian Government and the fishing and aquaculture sectors.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine Fisheries Research and Development Corporation's relevance for the proposed activity. There is no known research being undertaken by the Fisheries Research and Development Corporation that intersects within the EMBA.	No

Person or Organisation	Summary of functions, interests, or activities	Assessment of relevance	Relevant person
		Woodside chose to contact the Fisheries Research and Development Corporation at its discretion in line with Section 5.3 of the EP.	
Apollo Bay Landcare	Conservation group.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Apollo Bay Landcare's conservation activities have the potential to intersect with the EMBA as the EMBA overlaps Apollo Bay.	Yes
Otway Climate Emergency Action Network (OCEAN)	Community group.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. OCEAN's activities have the potential to intersect with the EMBA as the EMBA overlaps the Southern Ocean and Otway Basin.	Yes
Otway Water	Community group.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Otway Water's area of interest has the potential to intersect with the EMBA as the EMBA overlaps the Otway area.	Yes
Warrnambool Coastcare Landcare Network	Volunteer community organisation.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations. Warrnambool Coastcare Landcare Network's activities have the potential to intersect with the EMBA as the EMBA is adjacent to the Warrnambool Coast.	Yes
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Research institute.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine CSIRO's relevance for the proposed activity. Woodside chose to contact CSIRO at its discretion in line with Section 5.3 of the EP.	No
Australian Institute of Marine Science (AIMS)	Research institute.	Woodside has applied its methodology for 'Research institutes and local conservation groups or organisations' under regulation 25(1)(d) of the Environment Regulations to determine AIMS's relevance for the proposed activity. There is no known research being undertaken by the AIMS that intersects within the EMBA. Woodside chose to contact AIMS at its discretion in line with Section 5.3 of the EP.	No

CONSULTATION ACTIVITIES

Minerva Decommissioning and Field Management Environment Plan Consultation Activities

Woodside has been conducting extensive consultation with relevant persons and other parties for this EP since May 2023 when consultation commenced with interested and affected stakeholders as part of a planned, integrated and consistent approach to stakeholder engagement for Woodside's proposed opportunities. A broad consultation process has been undertaken with relevant persons for the Minerva Decommissioning and Field Management EP. Consultation aims to be inclusive, transparent, voluntary, respectful and two-way. Consultation was undertaken by email, letter, phone call and/or meeting.

- Woodside advertised the planned activities proposed for this EP in national, state and relevant local newspapers including The Australian, Herald Sun, Colac Herald, Cobden Times and Warrnambool Standard (see **Record of Consultation, reference 1.3**). Regional newspapers do not require subscription and are available (and in some cases delivered) directly to households. All communities within or adjacent to the EMBA had access to this information via this media. No direct comments or feedback were received from the advertisements.

Newspaper	Coverage	Publication dates
The Australian	National	17 May 2023
Herald Sun	Regional (VIC)	17 May 2023
Colac Herald	Local (VIC)	17 May 2023
Cobden Times	Local (VIC)	17 May 2023
Warrnambool Standard	Local (VIC)	17 May 2023

- A Consultation Information Sheet was provided to relevant persons and persons Woodside chose to contact (see **Section 5.3.4** in the EP), which included details such as an activity overview, maps, a summary of key risks and/or impacts and management measures (**Record of Consultation, reference 1.1**).
- An activity update Consultation Information Sheet was provided to relevant persons and persons Woodside chose to contact (see **Section 5.3.4**), which included an update regarding planned activities, including timing changes (**Record of Consultation, reference 2.1**).
- Since the commencement of the initial consultation period (May 2023), the stakeholder Consultation Information Sheet has been available on Woodside's website and the activity update Consultation Information Sheet since January 2024 (**Record of Consultation, reference 2.1**). The Woodside Consultation Information Sheets include a toll-free 1800 phone number and Woodside's feedback email address (feedback@woodside.com).
- Additional targeted information was provided to relevant marine users including AHO and AMSA – Marine Safety (**Record of Consultation, reference 1.8**). This information included maps and additional information relevant to the specific category of persons. The relevant persons had a 30-day period in which to provide feedback.
- Where appropriate, Woodside conducted phone calls and meetings with relevant persons.

- Where appropriate, targeted follow-up emails were sent to relevant persons who had not provided a response prior to the close of the target feedback period.
- Woodside considered relevant person responses and assessed the merits and relevance of objections and claims about the potential adverse impact of the proposed activity set out in the EP, in accordance with the intended outcome of consultation (see **Section 5.2** in the EP).
- Consultation activities undertaken with relevant persons are summarised at **Appendix F, Table 2**.
- Engagement undertaken with persons or organisations Woodside assessed as not relevant but chose to contact (see **Section 5.3.4** in the EP) or self-identified and Woodside assessed as not relevant are summarised at **Appendix F, Table 3**.

Traditional Custodian Specific Consultation

In addition to the approaches above, additional activities were undertaken with relevant Traditional Custodians, which were specifically designed to provide for effective engagement with Traditional Custodians and so that information was provided in a form that was readily accessible and appropriate (see **section 5.5** in the EP). Consultation undertaken specifically with Traditional Custodians for this Environment Plan includes:

- Direct engagement with nominated representative bodies via the contact listed on the Office of the Registrar of Indigenous Corporations (ORIC) website, requesting advice on how they would like to be engaged and asking whether there are other members and/or individuals who should be consulted. This has resulted in:
 - Meetings with directors, PBC representatives, elders and any nominated representatives, by telephone and video conference, or in person on country
 - Requests and offers of resourcing to enable and support consultation
 - Exchange of written feedback and correspondence
 - Summary Consultation Information Sheet, developed and reviewed by Indigenous representatives in collaboration with technical experts to ensure content is appropriate to the intended recipients, was provided to relevant Traditional Custodian groups (**Record of Consultation, reference 1.2 and reference 2.2**) and phone calls to provide context to the consultation made.
- Ongoing efforts were made to engage and develop relationships with these bodies via a variety of means such as email, phone calls, alternative contacts, texts, social media and in some cases physical visits.
- Consultation meetings with attendees decided by Traditional Custodian groups, supported by senior Woodside representatives, subject matter experts, First Nations Relations advisers with skills and experience in community engagement. Meetings are developed through a two-way consultation process to ensure effective information sharing via:
 - Mutually agreed agenda avoiding time pressure
 - Encouraging Traditional Custodian attendees to control the pace of the meeting and pause at any time to ask questions, seek clarification or provide feedback
 - Visual aids such as, for example, presentations, simplified technical videos and real-world pictures and footage
 - Emphasis on potential planned and unplanned risks and impacts of the activity
 - Ample opportunity for questions and feedback
 - Discussion about ongoing relationship development and opportunities
 - Distribution of Consultation Information Sheets (**Record of Consultation, reference 1.1 and 2.1**) and Summary Consultation Information Sheets (**Record of Consultation, reference 1.2 and 2.2**).

- Meeting all costs such as sitting fees, travel, legal support and executive support and other support required

Woodside has employed a diverse range of techniques to allow relevant persons to become aware of the proposed activity and how it may affect their functions, activities or interests, and to understand their ability to provide feedback. The combination of PBC engagement meetings, and traditional print media advertising was designed with input from Indigenous representatives and adapted to the audience, so that it provides a wide-ranging opportunity to consult.

Table 2: Consultation Report with Relevant Persons or Organisations

Commonwealth and Victorian Government Departments or Agencies — Marine		
Australian Border Force (ABF)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with ABF for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet was publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting comments or feedback. • Consultation information provided to ABF on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the ABF with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed ABF advising of the proposed activity (Record of Consultation, reference 1.4) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 22 June 2023, Woodside emailed ABF advising of the proposed activity (Record of Consultation, reference 1.4.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed ABF advising of the proposed activity (Record of Consultation, reference 2.11) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to ABF advising of the proposed activity (Record of Consultation, reference 2.11.1). 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Australian Fisheries Management Authority (AFMA)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AFMA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet has been available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting comments or feedback. • Consultation information provided to AFMA on 31 May 2023 based on their function, interest and activities. 		

<ul style="list-style-type: none"> • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has addressed and responded to AFMA over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed AFMA advising of the proposed activity (Record of Consultation, reference 1.7) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 2 June 2023, AFMA responded via email and: <ul style="list-style-type: none"> ○ (1) Advised it had no specific comments on the proposal. ○ (2) Encouraged Woodside, if it had not already done so, to engage directly with relevant fishing stakeholders and included contact details for relevant industry associations. AFMA specifically identified the Bass Strait Central Zone Scallop Fishery, CFA, Tasmanian Industry Seafood Council (TISC), Small Pelagic Fishery, South East Trawl Fishery Industry Association, Southern and Eastern Scalefish and Shark Fishery and Southern Shark Industry Alliance Inc. • On 22 June 2023, Woodside emailed AFMA advising of the proposed activity (Record of Consultation, reference 1.7.1) and provided a Consultation Information Sheet. • On 10 August 2023, Woodside responded to AFMA to provide confirmation that Woodside has provided information to relevant fishery licence holders as well as representative organisations on behalf of Commonwealth fishing licence holders who have entitlements to fish within the proposed area. Woodside attached a relevant map to show the EMBA. • On 12 January 2024, Woodside emailed AFMA advising of the proposed activity (Record of Consultation, reference 2.31) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to AFMA advising of the proposed activity (Record of Consultation, reference 2.31.1). 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>AFMA:</p> <p>(1) Advised it had no specific comments on the proposal.</p> <p>(2) Encouraged Woodside to consult directly with fishing operators who have entitlements to fish within the proposed area.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside:</p> <p>(1) Noted AFMA had no comments on the proposal.</p> <p>(2) Confirmed it had provided consultation information to relevant fishery licence holders as well as representative organisations on behalf of Commonwealth fishing licence holders who have entitlements to fish within the proposed area.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Not required.</p> <p>(2) Woodside has assessed the potential for interaction with Commonwealth- and State-managed fisheries in Section 4.6.2 of this EP.</p> <p>Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>No additional controls or measures are required.</p>

Australian Hydrographic Office (AHO)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AHO for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to AHO on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has addressed and responded to AHO over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed AHO advising of the proposed activity (Record of Consultation, reference 1.8) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • (1) On 31 May 2023, AHO responded acknowledging receipt of Woodside's email. It advised that the data supplied will now be registered, assessed, prioritised and validated in preparation for updating Navigational Charting products. • On 12 January 2024, Woodside emailed AHO advising of the proposed activity (Record of Consultation, reference 2.40) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to AHO advising of the proposed activity (Record of Consultation, reference 2.40.1). 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) AHO responded and acknowledged receipt of Woodside's email and noted the data would be assessed, prioritised and validated for updating on navigational charts. Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted AHO's acknowledgement of its email and that it had no specific feedback for this EP. Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Not required. Woodside will notify the AHO no less than four working weeks before activities commence, as referenced as a PS 1.3 in this EP. No additional measures or controls are required.</p>
Australian Maritime Safety Authority (AMSA) — Marine Safety		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AMSA — Marine Safety for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to AMSA — Marine Safety on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. 		

- Woodside has sent follow-up emails seeking feedback on the proposed activities.
 - Woodside has addressed and responded to AMSA — Marine Safety over a 10-month period.
- Summary of information provided and record of consultation:**
- On 31 May 2023, Woodside emailed AMSA — Marine Safety advising of the proposed activity (Record of Consultation, reference 1.8) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
 - On 22 June 2023, Woodside sent a reminder email to AMSA — Marine Safety advising of the proposed activity (Record of Consultation, reference 1.8.1) and provided a Consultation Information Sheet.
 - **(1)** On 27 June 2023, AMSA — Marine Safety responded that they are satisfied with the mitigation measures listed in the EP from a safety of navigation perspective. They also requested that Woodside:
 - **(2)** Contacts the Australian Hydrographic Office (AHO) no less than four weeks before operations commence, detailing relevant details. The AHO will then promulgate the appropriate Notice to Mariners (NTM).
 - **(3)** Notifies AMSA’s Joint Rescue Coordination Centre (JRCC) 24-48 hours before operations commence. This must include:
 - Vessel details (name, callsign and Maritime Mobile Service Identity (MMSI)),
 - Satellite communications details (including INMARSAT-C and satellite telephone numbers),
 - Area of operation,
 - Requested clearance from other vessels,
 - When operations start and end.
 The JRCC will then promulgate radio-navigation warnings.
 - **(4)** Ensures that vessels comply with the COLREGs, including using appropriate lights and accurate navigation status in the Automatic Identification System (AIS). For this purpose, AMSA provided instructions on how to obtain a vessel traffic plot showing AIS data for the area.
 - On 21 July 2023, Woodside replied, noting AMSA — Marine Safety’s feedback and committed to:
 - Notify the AHO no less than four weeks before operations commence with the relevant details.
 - Notify AMSA’s JRCC at least 24-48 hours before operations commence with the requested details, including when operations start and end.
 - Provide the AHO and JRCC with updates on progress and intended changes.
 - Comply with the COLREGs, including exhibiting appropriate lights and shapes.
 - On 12 January 2024, Woodside emailed AMSA - Marine Safety advising of the proposed activity (Record of Consultation, reference 2.40) and provided an updated Consultation Information Sheet
 - On 25 January 2024, Woodside sent a reminder email to AMSA – Marine Safety advising of the proposed activity (Record of Consultation, reference 2.40.1).

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
AMSA — Marine Safety: (1) Noted they are satisfied with the mitigation measures outlined in the EP from a safety of navigation perspective.	Woodside: (1) Notes that AMSA is satisfied with the mitigation measures outlined in the EP from a safety of navigation perspective.	(1) Not required. (2) Woodside will notify AHO no less than four working weeks before operations commence, referenced as PS 1.3 in this EP.

<p>(2) Requested that Woodside notifies the Australian Hydrographic Office (AHO) no less than four weeks before operations commence, detailing relevant details.</p> <p>(3) Requested that Woodside notifies AMSA's Joint Rescue Coordination Centre (JRCC) 24-48 hours before operations commence, with requested details.</p> <p>(4) Requested that Woodside ensures that vessels comply with the Convention on the International Regulations for Preventing Collisions at Sea (COLREGs).</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(2) Confirms it will notify the AHO no less than four weeks before operations commence with the relevant details.</p> <p>(3) Confirms it will notify AMSA's JRCC at least 24-48 hours before operations commence with the requested details, including when operations start and end.</p> <p>(4) Confirms it will comply with the COLREGs.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(3) Woodside will notify AMSA's JRCC at least 24–48 hours before operations commence, referenced as PS 1.4 in this EP.</p> <p>(4) Woodside will comply with the COLREGs. For example:</p> <ul style="list-style-type: none"> Section 7 of the EP contains several controls that address COLREG compliance, including lighting and No additional measures or controls are required.
<p>Australian Maritime Safety Authority (AMSA) — Marine Pollution</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AMSA – Marine Pollution for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to AMSA — Marine Pollution on 31 May 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided AMSA — Marine Pollution with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 31 May 2023, Woodside emailed AMSA — Marine Pollution advising of the proposed activity (Record of Consultation, reference 1.9) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 22 June 2023, Woodside sent a reminder email to AMSA — Marine Pollution advising of the proposed activity (Record of Consultation, reference 1.9.1) and provided a Consultation Information Sheet. On 11 December 2023, Woodside sent AMSA — Marine Pollution the project's activity-specific Oil Pollution First Strike Plan and offered the opportunity to review or provide comment (Record of Consultation, reference 1.9.2) On 12 January 2024, Woodside emailed AMSA – Marine Pollution advising of the proposed activity (Record of Consultation, reference 2.47) and provided an updated Consultation Information Sheet. On 25 January 2024, Woodside sent a reminder email to AMSA – Marine Pollution advising of the proposed activity (Record of Consultation, reference 2.47.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>

<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>Woodside has addressed oil pollution planning and response in the Oil Pollution Emergency Plan (OPEP) (Appendix E). No additional measures or controls are required.</p>
<p>Department of Agriculture, Fisheries and Forestry (DAFF) — Fisheries</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DAFF — Fisheries for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to DAFF — Fisheries on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the DAFF — Fisheries with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed DAFF — Fisheries advising of the proposed activity (Record of Consultation, reference 1.10) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to DAFF — Fisheries advising of the proposed activity (Record of Consultation, reference 1.10.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed DAFF — Fisheries advising of the proposed activity (Record of Consultation, reference 2.13) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to DAFF — Fisheries advising of the proposed activity (Record of Consultation, reference 2.13.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth- and State-managed fisheries in Section 4.6.2 of this EP. Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation</p>

		<p>facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>No additional controls or measures are required.</p>
<p>Department of Defence (DoD)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the DoD for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to the DoD on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent reminder emails seeking feedback to the proposed activities. • Woodside has addressed and responded to the DoD over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed DoD advising of the proposed activity (Record of Consultation, reference 1.15) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to DoD advising of the proposed activity (Record of Consultation, reference 1.15.1) and provided a Consultation Information Sheet. • On 11 July 2023, DoD thanked Woodside for its email and provided this feedback: <ul style="list-style-type: none"> ○ (1) The activity areas are located within restricted airspace. ○ (2) Unexploded ordnance (UXO) may be present on and in the seafloor. Woodside must inform itself as to the risks associated with conducting activities in that area, with the Commonwealth of Australia taking no responsibility for reporting the UXO in the area, identifying or removing UXO from the area, or any loss or damage suffered or incurred by Woodside or any third party arising out of, or directly related to, UXO in the area. ○ (3) DoD's notification requirements include liaising with the Australian Hydrographic Service/Office (AHS/AHO) for Notices to Mariners (NOTMAR). • On 21 July 2023, Woodside thanked DoD for its feedback and confirmed: <ul style="list-style-type: none"> ○ It had noted the location of activity areas and the presence of exercise areas and restricted airspace. ○ It had noted the advice regarding location, identification, removal or damage to equipment from unexploded ordinances (UXOs) ○ The Australian Hydrographic Service/Office (AHS/AHO) has already been engaged for this activity and is part of the activity notification protocols. At its request, the AHS/AHO will be notified four weeks prior to activity commencement. ○ The DoD requirement to engage with Airservices Australia if the restricted airspace is activated. Woodside will confirm restricted air space status with the DoD as part of its commencement of activity notification. Woodside will notify the DoD at least five weeks prior to the commencement of activities. • On 12 January 2024, Woodside emailed DoD advising of the proposed activity (Record of Consultation, reference 2.38) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to DoD advising of the proposed activity (Record of Consultation, reference 2.38.1). 		

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>The DoD provided feedback on:</p> <p>(1) The location of exercise areas and restricted airspace.</p> <p>(2) The risk of unexploded ordinance (UXO) in the area.</p> <p>(3) The need for Woodside to continue liaising with the AHO and ensuring AHO is notified three weeks prior to the actual commencement of activities.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside assessed DoD’s feedback and confirmed:</p> <p>(1) It had noted DoD’s advice on the location of activity areas within an exercise area and restricted airspace.</p> <p>(2) It had noted the DoD’s advice with respect to the risk, location, identification, removal or damage from any UXO.</p> <p>(3) The AHS/AHO had been engaged by Woodside for these activities and is included in Woodside’s activity notification protocols. At its request, the AHO will be notified four weeks prior to the start of activities.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1, 2) Woodside has recorded the defence areas, facilities and UXOs overlapping the Operational Area and/or EMBA in Section 4.6.6 of this EP.</p> <p>Further, Woodside will notify DoD five weeks before the proposed activities commence, as referenced in PS 1.7. This notice shall include advice from Airservices Australia about the status of the airspace in relation to the petroleum activity, as described in Section 9.10.1.1 of this EP.</p> <p>(3) Woodside will notify the AHO no less than four working weeks before operations commence as referenced in PS 1.3 in this EP.</p> <p>Woodside considers the measures and controls in the EP are appropriate</p>
<p>Department of Energy, Environment and Climate Action (DEECA) — Earth Resources Regulator Resources Victoria</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DEECA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to DEECA on 1 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided DEECA with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 1 June 2023, Woodside emailed DEECA advising of the proposed activity (Record of Consultation, reference 1.17) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to DEECA advising of the proposed activity (Record of Consultation, reference 1.17.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed DEECA advising of the proposed activity (Record of Consultation, reference 2.35) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to DEECA advising of the proposed activity (Record of Consultation, reference 2.35.1) • On 12 February 2024, DEECA responded and: 		

<ul style="list-style-type: none"> ○ (1) Advised that, as a Regulator, its feedback is limited to process matters at this time ○ (2) Noted Woodside’s recent meeting with NOPSEMA around this project. It recommended that the EP for the activities in Victorian waters be submitted to DEECA at the same time that the EP is submitted to NOPSEMA (for the same activity in Commonwealth waters) as the pipeline removal is intended to be carried out in a single campaign. ● On 13 February 2024, Woodside emailed DEECA and: <ul style="list-style-type: none"> ○ Noted that DEECA is the Regulator and current feedback is only on process matters ○ Confirmed Woodside’s intention to align the timing of the submission of the two Commonwealth EPs with the State Minerva EP at the end of February 2024, subject to the close out of any ongoing consultation ○ Shared timeframes for the new Commonwealth EP submission approx. 5 business days prior to the State EP, to accommodate the NOPSEMA 5 business day “completeness check” ○ Confirmed that, based on this EP passing the completeness check, the EPs would commence assessment with the respective regulators at the same time. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DEECA:</p> <p>(1) Advised that only feedback on process matters is appropriate at this time, as they are the Regulator.</p> <p>(2) Noted Woodside’s recent meeting with NOPSEMA, recommending all relevant Commonwealth EPs be submitted at the same time as State waters EP.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>Woodside:</p> <p>(1) Noted DEECA’s role as Regulator and that any response will only relate to processes, at this time.</p> <p>(2) Confirmed that Woodside aims to submit the 2 Commonwealth EPs and State Minerva EP at the same time, based on the completeness check approval by NOPSEMA. Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1, 2) Not required.</p> <p>No additional measures or controls are required.</p>
Department of Transport and Planning (DTP)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DTP for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> ● Consultation Information Sheet publicly available on the Woodside website since May 2023. ● Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. ● Consultation Information provided to the DTP on 19 June 2023 based on their function, interest and activities. ● Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. ● Woodside has sent follow-up emails seeking feedback on the proposed activities. ● Woodside has provided the DTP with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p>		

<ul style="list-style-type: none"> On 19 June 2023, Woodside emailed the DTP advising of the proposed activity (Record of Consultation, reference 1.37) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 16 November 2023, Woodside sent a reminder email to DTP advising of the proposed activity (Record of Consultation, reference 1.37.1) advising of a two-week period to respond. On 11 December 2023, Woodside sent DTP the project's activity-specific Oil Pollution First Strike Plans and offered the opportunity to review or provide comment (Record of Consultation, reference 1.37.2) On 13 December 2023, DTP responded with: <ul style="list-style-type: none"> (1) The latest version of the Victorian Joint Industry and State Oil Pollution Response Guidance Note attached to assist Woodside with the development of the EPs A request to update DTP contact details for notification of marine pollution incidents (2) Questions to clarify if the Oil Pollution First Strike Plans were in lieu of the Oil Pollution Emergency Plan (OPEP) On 11 January 2024, Woodside emailed DTP thanking them for the review, and: <ul style="list-style-type: none"> said Woodside would review the Guidance Note acknowledged the latest contact details for incidents confirmed that an Oil Pollution First Strike Plan is one of two main documents that form Woodside's OPEPs, both of which sit as separate appendices in the EP explained the function of each of the two documents offered to set up some time to discuss Woodside's approach to oil spill emergency planning On 12 January 2024, Woodside emailed DTP advising of the proposed activity (Record of Consultation, reference 2.29) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to DTP advising of the proposed activity (Record of Consultation, reference 2.29.1) 		
Summary of Feedback, Objection or Claim	Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DTP:</p> <p>(1) Sent Woodside the latest Guidance Note on State response.</p> <p>(2) Asked if the First Strike Plans received were in lieu of the OPEP.</p> <p>While feedback has been received, there were no objections or claims.</p>	<p>Woodside:</p> <p>(1) Acknowledged receipt and review of the Guidance Note</p> <p>(2) Confirmed the two main documents that form Woodside's OPEP and offered to meet to discuss further.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Not required.</p> <p>(2) Not required. Appendix E includes the Oil Pollution Emergency Plan (OPEP). The emergency response activities are referenced in PS 11.6.</p> <p>No additional measures or controls are required.</p>
Department of the Premier and Cabinet (DPC) — First Nations State Relations		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DPC – First Nations State Relations for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p>		

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to DPC – First Nations State Relations on 15 January 2024 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community.
- Woodside has addressed and responded to the DPC – First Nations State Relations over a 3-month period.

Summary of information provided and record of consultation:

- On 15 January 2024, DPC – First Nations State Relations emailed Woodside requesting to discuss the Minerva EPs.
- On 15 January 2024, Woodside responded to DPC – First Nations State Relations providing the updated Consultation Information Sheet and arranged a meeting for 17 January 2024 (Record of Consultation, reference 2.46).
- On 17 January 2024, Woodside met with DPC – First Nations State Relations and provided an overview of Minerva decommissioning activities and timeframes for the activities and the EP submissions.

At the meeting DPC asked:

- **(1)** How the pipeline would be removed
 - Woodside advised the pipeline would be cut up and placed on to vessels.
- **(2)** What Woodside has done to gain an understanding of cultural impacts, specifically potential impacts of upcoming activities on sea country and submerged cultural landscapes.
 - Woodside advised it had engaged a maritime archaeologist who will use available geophysical data such as sonar mapping to gain an understanding of seabed landforms. Woodside was compiling this into a report on prospective underwater cultural heritage in the project area.
- **(3)** How consultation was going with the Registered Aboriginal Parties (RAPs)
 - Woodside advised various levels of consultation had occurred over the past 7-8 months and was ongoing.
- **(4)** If Woodside had engaged with Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC)
 - Woodside advised it had and was attending the GMTOAC session on February 17, 2024 meeting in Victoria.
 - DPC advised that they were facilitating the day and that this type of engagement had been very successful in other regions.
- (5)** DPC responded to a Woodside question on how to get access to the Aboriginal Cultural Heritage Register and Information Session (ACHRIS) and advised that Woodside could apply for an account directly or the Consultant could do the search on Woodside’s behalf. DPC also confirmed that you can upload shape files.
 - Woodside asked about the role of the First Peoples – State Relations group
 - **(6)** DPC advised that First People – State Relations administers the Aboriginal Heritage Act. Heritage Victoria manages historic heritage including shipwrecks as the delegated authority for Victoria for the Commonwealth UCH Act but Heritage Victoria and First Peoples – State Relations have an MOU enabling First Peoples.

- On 17 January 2024, Woodside emailed the DPC confirming and summarising the earlier meeting content.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
DPC: (1) Queried how the pipeline would be removed.	Woodside:	(1) Section 3 of this EP described the proposed removal activities.

<p>(2) Requested to understand what had been done to gain an understanding of cultural impacts, specifically impacts of activities on sea country and submerged cultural landscapes.</p> <p>(3) Enquired about consultation with traditional owners.</p> <p>(4) Enquired specifically about consultation with Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC).</p> <p>(5) Provided advice on how to gain access to the Aboriginal Cultural Heritage Register and Information Session (ACHRIS).</p> <p>(6) Advised Woodside on DPC's role in administering the Aboriginal Heritage Act.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Advised the pipeline would be dismantled and removed via vessels.</p> <p>(2) Advised DPC it was using geophysical data to understand seabed landforms, and this would be compiled into a report on prospective underwater cultural heritage.</p> <p>(3) Has consulted with traditional owners as summarised in the <i>Traditional Custodians and Nominated Representative Corporations</i> section of this Table 2.</p> <p>(4) Confirmed consultation had occurred with GMTOAC as summarised in this Table 2. Woodside confirmed attendance at a GMTOAC meeting that occurred on February 17, 2024.</p> <p>(5) Noted the advice on how to access ACHRIS and committed to gaining access for the purposes of this EP.</p> <p>(6) Acknowledged it understood the function and responsibilities of DPC.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(2) Woodside has included control C 3.1 in the EP Section 7.2.6, requiring review of existing survey data by a suitable qualified maritime archaeologist.</p> <p>(3) Consultation with Traditional Owners is captured within this Table 2.</p> <p>(4) Consultation with GMTOAC is captured within this Table 2.</p> <p>(5) Woodside has captured output from the ACHRIS in Section 4.6.1.5 of the EP.</p> <p>(6) Not required.</p> <p>No additional measures or controls are required.</p>
<p>Heritage Victoria</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Heritage Victoria for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Heritage Victoria on 20 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has addressed and responded to Heritage Victoria over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 20 June 2023, Woodside emailed Heritage Victoria advising of the proposed activity (Record of Consultation, reference 1.38) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 26 June 2023, Heritage Victoria emailed Woodside and: <ul style="list-style-type: none"> ○ (1) Advised of relevant Heritage Acts — including the Underwater Cultural Heritage Act 2018 and protections to archaeological sites, shipwrecks, aircraft wrecks and submerged Aboriginal heritage sites — and noted Heritage Victoria has delegated responsibilities in Commonwealth waters off Victoria. 		

<ul style="list-style-type: none"> ○ (2) Advised Woodside to undertake an impact assessment and management plan for underwater cultural heritage that may be impacted. ○ (3) Attached the Underwater Cultural Heritage Guidance for Offshore Developments produced by the Commonwealth. ● On 4 July 2023, Woodside emailed Heritage Victoria thanking for the Guidance and acknowledging the various Heritage Acts and their application. Woodside: <ul style="list-style-type: none"> ○ Confirmed that an impact assessment is appropriate and will be undertaken for the proposed decommissioning activities including a review of relevant heritage databases. ○ Clarified that the <i>Underwater Cultural Heritage Act 2018</i> (Cth) applies to submerged Aboriginal heritage sites where these were subject to a declaration under section 17 of that Act. However, as a principal of good practice and in accordance with Woodside’s First Nations Communities Policy, Woodside will act to avoid damage or disturbance to such sites in close consultation with First Nation communities and Traditional Custodians. ○ Shared its First Nations Communities Policy. ● On 12 January 2024, Woodside emailed Heritage Victoria advising of the proposed activity (Record of Consultation, reference 2.32) and provided an updated Consultation Information Sheet ● On 25 January 2024, Woodside sent a reminder email to Heritage Victoria advising of the proposed activity (Record of Consultation, reference 2.32.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Heritage Victoria:</p> <p>(1) Advised of relevant Heritage Acts including <i>Underwater Cultural Heritage Act 2018</i> (Cth).</p> <p>(2) Advised Woodside to undertake an impact assessment and management plan for underwater cultural heritage.</p> <p>(3) Attached a copy of the Underwater Cultural Heritage Guidance for Offshore Developments.</p>	<p>Woodside:</p> <p>(1) Acknowledged the various Acts and their application, including clarifying aspects of the <i>Underwater Cultural Heritage Act 2018</i> (Cth) whilst stating that Woodside always act to avoid damage or disturbance to such sites. Woodside also shared its First Nations Communities Policy.</p> <p>(2) Confirmed that an impact assessment will be undertaken for the proposed decommissioning activities.</p> <p>(3) Acknowledged the shared Commonwealth Guidance.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Not required.</p> <p>(2) Section 4.6.1.8 of this EP notes there is no known underwater cultural heritage within the Operational Area, but there are many shipwrecks within the EMBA. Section 4.5 describes which protected and significant areas overlap the EMBA. Section 4.6.1.5 describes the assessment of Sea Country Values and First Nations groups with cultural features and values within the Operational Area and the EMBA.</p> <p>Woodside has included control C 3.1 in the EP Section 7.2.6, requiring review of existing survey data by a suitable qualified maritime archaeologist. Woodside has assessed that a Management Plan for underwater cultural heritage is not required, on the basis that no underwater cultural heritage has been identified in the Operational Area and none of the cases listed in Heritage Victoria’s Conservation Management Plan guidance apply – refer to “When do I need a Conservation Management Plan” (Heritage Council of Victoria, 2010).</p> <p>Woodside has assessed that a Cultural Heritage Management Plan under the <i>Aboriginal Heritage Regulations 2018</i> (VIC) is not required as “The</p>

		<p>development of the sea bed of the coastal waters of Victoria or any sea within the limits of Victoria is an exempt activity.”</p> <p>(3) Woodside has applied the recommendations in the Underwater Cultural Heritage Guidance for Offshore Developments when developing the EP – including, reviewing the Australian Underwater Cultural Heritage Database (Section 4.6.1.8); Control C 3.1 requiring review of existing survey data by a suitably qualified archaeologist; Control C 3.2 requiring reporting of any new suspected underwater cultural heritage sites; and the steps provided in the Unexpected Finds Procedure (Section 9.3).</p> <p>Woodside considers the measures and controls in the EP are appropriate.</p>
Port of Melbourne		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Port of Melbourne for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Port of Melbourne on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Port of Melbourne with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Port of Melbourne advising of the proposed activity (Record of Consultation, reference 1.16) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Port of Melbourne advising of the proposed activity (Record of Consultation, reference 1.16.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Port of Melbourne advising of the proposed activity (Record of Consultation, reference 2.37) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Port of Melbourne advising of the proposed activity (Record of Consultation, reference 2.37.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>No additional measures or controls are required.</p>
<p>Port of Hastings</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Port of Hastings for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Port of Hastings on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Port of Hastings with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Port of Hastings advising of the proposed activity (Record of Consultation, reference 1.16) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Port of Hastings advising of the proposed activity (Record of Consultation, reference 1.16.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Port of Hastings advising of the proposed activity (Record of Consultation, reference 2.37) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Port of Hastings advising of the proposed activity (Record of Consultation, reference 2.37.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>No additional measures or controls are required.</p>
<p>Port of Warrnambool</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Port of Warrnambool for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. 		

<ul style="list-style-type: none"> • Consultation Information provided to Port of Warrnambool on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Port of Warrnambool with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Port of Warrnambool advising of the proposed activity (Record of Consultation, reference 1.16) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Port of Warrnambool advising of the proposed activity (Record of Consultation, reference 1.16.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Port of Warrnambool advising of the proposed activity (Record of Consultation, reference 2.37) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Port of Warrnambool advising of the proposed activity (Record of Consultation, reference 2.37.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Port of Portland		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Port of Portland for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting comments or feedback. • Consultation Information and Oil Pollution First Strike Plans provided to Port of Warrnambool on 11 December 2023, seeking feedback on the proposed activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside addressed and responded to the Port of Portland over a 4-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • (1) On 14 June 2023, Port of Portland emailed Woodside advising it was responsible for pollution response in the region from the South Australian border to Cape Otway, as delegated by the Victorian Government, and requested to be added to the distribution list for the Minerva decommissioning. • On 23 June 2023, Woodside sent a response email to Port of Portland thanking them for their response and that Woodside records have been updated. Woodside advised it would be in touch. 		

<ul style="list-style-type: none"> On 11 December 2023, Woodside emailed the Port of Portland advising of the proposed Minerva activities including this EP (Record of Consultation, reference 1.47) and attached Oil Pollution First Strike Plans for three separate Minerva Decommissioning EPs. These form part of Woodside's Oil Pollution Emergency Plans (OPEPs). On 12 January 2024, Woodside emailed Port of Portland advising of the proposed activity (Record of Consultation, reference 2.42) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to Port of Portland advising of the proposed activity (Appendix F, reference 2.42.1) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Port of Portland advised it has been delegated the responsibility of pollution response from the South Australian border to Cape Otway by the Victorian Government and requested to be consulted for Minerva decommissioning EPs.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside acknowledged the Port's status as relevant as the Victorian Government's pollution response delegate and committed to ongoing consultation in relation to this EP including providing Oil Pollution First Strike Plans.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Woodside has consulted Port of Portland in the course of preparing this EP. Woodside has assessed the claims or objections raised by Port of Portland.</p> <p>Woodside has addressed oil pollution planning and response in the Oil Pollution Emergency Plan (OPEP) (Appendix E), which includes the Oil Pollution First Strike Plan.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on Port of Portland's functions, interests and activities.</p>
<p>Victorian Fisheries Authority (VFA)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the VFA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to VFA on 2 June 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the VFA with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 2 June 2023, Woodside emailed VFA advising of the proposed activity (Record of Consultation, reference 1.19) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to VFA advising of the proposed activity (Record of Consultation, reference 1.19.1) and provided a Consultation Information Sheet. 		

<ul style="list-style-type: none"> On 12 January 2024, Woodside emailed VFA advising of the proposed activity (Record of Consultation, reference 2.33) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to VFA advising of the proposed activity (Record of Consultation, reference 2.33.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth- and State-managed fisheries in Section 4.6.2 of this EP. Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>No additional measures or controls are required</p>
<p>Commonwealth and Victorian Government Departments or Agencies — Environment</p>		
<p>Department of Agriculture, Fisheries and Forestry (DAFF) — Biosecurity (marine pests, vessels, aircraft and personnel)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DAFF — Biosecurity for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to DAFF — Biosecurity on 31 May 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the DAFF — Biosecurity with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 31 May 2023, Woodside emailed DAFF — Biosecurity advising of the proposed activity (Record of Consultation, reference 1.10) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

<ul style="list-style-type: none"> On 23 June 2023, Woodside sent a reminder email to DAFF — Biosecurity advising of the proposed activity (Record of Consultation, reference 1.10.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed DAFF — Biosecurity advising of the proposed activity (Record of Consultation, reference 2.13) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to DAFF — Biosecurity advising of the proposed activity (Record of Consultation, reference 2.13.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>Vessels are required to comply with the <i>Australian Biosecurity Act 2015</i>, specifically the Australian Ballast Water Management Requirements (as defined under the Biosecurity Act 2015) (aligned with the International Convention for the Control and Management of Ships’ Ballast Water and Sediments) to prevent introducing invasive marine species (IMS). Vessels will be assessed and managed to prevent the introduction of invasive marine species in accordance with Woodside’s Invasive Marine Species Management Plan (see Section 8.7 of the EP).</p> <p>Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>No additional measures or controls are required.</p>
Department of Climate Change, Energy, the Environment and Water (DCCEEW)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the DCCEEW for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to DCCEEW on 2 June 2023 based on their function, interest and activities. 		

<ul style="list-style-type: none"> • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has addressed and responded to DCCEEW over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed DCCEEW advising of the proposed activity (Record of Consultation, reference 1.18) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to the DCCEEW advising of the proposed activity (Record of Consultation, reference 1.18.1) and provided a Consultation Information Sheet. • On 19 July 2023, the DCCEEW emailed Woodside thanking them for information for this and other EPs and: <ul style="list-style-type: none"> ○ (1) Advised that Woodside’s approach to risk mitigation and compliance with the Underwater Cultural Heritage (UCH) Act aligns with the Department’s advice. ○ (2) Requested that Woodside continues to consult with the Department as the EP documentation and any relevant technical reports are developed. • On 19 July 2023, Woodside responded via email and confirmed that the methodology described would be applied across the Minerva EPs and that Woodside will keep DCCEEW’s UCH Team informed of future developments. • On 12 January 2024, Woodside emailed DCCEEW advising of the proposed activity (Record of Consultation, reference 2.34) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to DCCEEW advising of the proposed activity (Record of Consultation, reference 2.34.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DCCEEW:</p> <p>(1) Advised that Woodside’s approach to risk mitigation and compliance with the UCH Act requirements aligned with its advice.</p> <p>(2) Requested that Woodside consult with its team as the EP documentation and any relevant technical reports are developed.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside:</p> <p>(1) Confirmed it would apply the methodology as described by DCCEEW for this EP.</p> <p>(2) Agreed to keep the UCH team updated on future developments.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1, 2) Woodside addresses the Underwater Cultural Heritage Act in Section 4.6.1.5 of this EP. No additional measures or controls are required.</p>
<p>Director of National Parks (DNP)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the DNP for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. 		

- Consultation Information provided to the DNP on 19 June 2023 based on their function, interest and activities.
 - Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community.
 - Woodside has sent follow-up emails seeking feedback on the proposed activities.
 - Woodside addressed and responded to the DNP over a 10-month period.
- Summary of information provided and record of consultation:**
- On 19 June 2023, Woodside emailed the DNP advising of the proposed activity (Record of Consultation, reference 1.34) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
 - On 12 July 2023, Woodside sent a reminder email to the DNP advising of the proposed activity (Record of Consultation, reference 1.34.1) and provided a Consultation Information Sheet.
 - On 7 December 2023, the DNP emailed Woodside and:
 - (1) Confirmed that the Minerva planned activities do not overlap any Australian Marine Parks (AMP) and therefore do not require DNP's authorisation.
 - (2) Shared a link to a joint NOPSEMA/DNP guidance note which outlines what titleholders need to consider and evaluate.
 - (3) Stated that the 2013 South-east Commonwealth Marine Reserves Network Management Plan expired on 30 June 2023.
 - (3) Stated that Parks Australia is preparing a new management plan that will include updated approvals in place for the South-east Marine Parks for mining operations and greenhouse gas activities.
 - (1) Confirmed that the DNP does not require further notification of progress made in relation to this activity unless details regarding the activity change and result in an overlap with, or new impact to, a marine park, or for emergency responses.
 - (4) Reiterated that the DNP should be made aware of oil/gas pollution incidences that occur within a marine park or are likely to impact on a marine park as soon as possible and that daily or weekly Situation Reports may be requested, depending on the scale and severity of the pollution incident.
 - On 11 December 2023, Woodside responded and:
 - Noted DNP's confirmation that planned activities do not overlap AMPs and that there are no authorisation requirements at this time.
 - Confirmed Woodside has taken into consideration the joint NOPSEMA/AMP's guidance note.
 - Noted that the South-east Commonwealth Marine Reserves Network Management Plan expired on 30 June 2023.
 - Stated that Woodside will continue to comply with the expired plan until the new South-east Commonwealth Marine Reserves Network Management Plan is published.
 - Agreed that Woodside would notify DNP with any changes/updates to these activities.
 - Advised that there will be an updated activity information in the next few days.
 - On 12 January 2024, Woodside emailed DNP advising of the proposed activity (Record of Consultation, reference 2.27) and provided an updated Consultation Information Sheet.
 - On 15 January 2024, the DNP responded and:
 - (1) Confirmed that the Minerva planned activities do not overlap any Australian Marine Parks (AMP) and therefore do not require DNP's authorisation.
 - (2) Shared a joint NOPSEMA/DNP guidance note that outlines what titleholders need to consider and evaluate.
 - (1) Confirmed that the DNP does not require further notification of progress made in relation to this activity unless details regarding the activity change and result in an overlap with, or new impact to, a marine park, or for emergency responses.

<ul style="list-style-type: none"> ○ (4) Reiterated that the DNP should be made aware of oil/gas pollution incidences that occur within a marine park or are likely to impact on a marine park as soon as possible and that daily or weekly Situation Reports may be requested, depending on the scale and severity of the pollution incident. ● On 25 January 2024, Woodside sent a reminder email to DNP advising of the proposed activity (Record of Consultation, reference 2.27.1) ● On 29 January 2024, Woodside responded to DNP's 15 January email thanking them for their reply, and confirmed: <ul style="list-style-type: none"> ○ Planned activities do not overlap any AMPs and there are no authorisation requirements from the DNP at this time. ○ That Woodside has taken into consideration the 'Petroleum Activities and Australian Marine Parks' guidance note. ○ Woodside will notify DNP in relation to these activities if details regarding the activities change and result in an overlap with or new impact to a marine park, or for emergency responses. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>DNP:</p> <p>(1) Advised planned activities do not overlap any Australian Marine Parks and there are therefore no authorisation requirements from the DNP. It does not require further notification of progress unless details regarding the activity change and result in an overlap with a marine park or new impact, or for emergency responses.</p> <p>(2) Shared a joint DNP/NOPSEMA guidance note outlining considerations needed by titleholders.</p> <p>(3) Advised that Parks Australia is preparing a new management plan for approvals as the current Management Plan expired 30 June 2023.</p> <p>(4) Emphasised the need for notification of oil/gas pollution incidences.</p>	<p>Woodside:</p> <p>(1) Noted that this activity doesn't overlap with any AMPs so there are no authorisation requirements from the DNP.</p> <p>(2) Confirmed that the guidance note had been taken into account to ensure the EP identifies and manages all risks on AMP values, and clearly demonstrates that activities will not be inconsistent with the management plan.</p> <p>(3) Noted the expiry of the Management Plan and that Woodside will continue to comply with the expired plan until an updated one is produced.</p> <p>(4) Agreed that the DNP will be notified with any incidences and changes.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Woodside has assessed protected and significant areas, including AMPs, in Section 4.5 of this EP.</p> <p>(2) This EP demonstrates how Woodside will identify and manage all impacts and risks on Australian marine park values (including ecosystem values) to an ALARP and acceptable level and that the activity is not inconsistent with the management plan (Section 6).</p> <p>(3) Not required.</p> <p>(4) Woodside will ensure DNP is made aware of any incidences within a marine park for the activity, as per the commitment in the Oil Pollution Emergency Plan (OPEP) (Appendix E). Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on DNP's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
Parks Victoria		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Parks Victoria for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> ● Consultation Information Sheet publicly available on the Woodside website since May 2023. ● Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. ● Consultation Information provided to Parks Victoria on 21 December 2023 based on their function, interest and activities. ● Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. 		

<ul style="list-style-type: none"> • Woodside has sent a follow-up email seeking feedback on the proposed activities. • Woodside has provided Parks Victoria with the opportunity to provide feedback over a 4-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 21 December 2023, Woodside emailed Parks Victoria advising of the proposed activity (Record of Consultation, reference 1.48) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 21 December 2023, Parks Victoria sent an email acknowledging receipt of the email and stating that a ticket had been created. • On 12 January 2024, Woodside emailed Parks Victoria advising of the proposed activity (Record of Consultation, reference 2.30) and provided an updated Consultation Information Sheet. • On 12 January 2024, Parks Victoria sent an acknowledgement email acknowledging receipt of the email and stating that a ticket had been created. • On 25 January 2024, Woodside sent a reminder email to Parks Victoria advising of the proposed activity (Record of Consultation, reference 2.30.1). • On 25 January 2024, Parks Victoria sent an email acknowledging receipt of the email and stating that a ticket had been created. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Commonwealth and State Government Departments or Agencies — Industry		
Department of Industry, Science and Resources (DISR)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with DISR for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to DISR on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the DISR with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed DISR advising of the proposed activity (Record of Consultation, reference 1.5) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 22 June 2023, Woodside sent a reminder email to DISR advising of the proposed activity (Record of Consultation, reference 1.5.1) and provided a Consultation Information Sheet. 		

<ul style="list-style-type: none"> On 12 January 2024, Woodside emailed DISR advising of the proposed activity (Record of Consultation, reference 2.12) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to DISR advising of the proposed activity (Record of Consultation, reference 2.12.1) and provided a Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Commonwealth Commercial Fisheries and Representative Bodies		
Bass Strait Central Zone Scallop Fishery		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Bass Strait Central Zone Scallop Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to Bass Strait Central Zone Scallop Fishery on 26 July 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the Bass Strait Central Zone Scallop Fishery with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 26 July 2023, Woodside sent a letter to Bass Strait Central Zone Scallop Fishery advising of the proposed activity (Record of Consultation, reference 1.45) and provided a Consultation Information Sheet. On 18 August 2023, Woodside sent a reminder email to Bass Strait Central Zone Scallop Fishery advising of the proposed activity (Record of Consultation, reference 1.45.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed Bass Strait Central Zone Scallop Fishery advising of the proposed activity (Record of Consultation, reference 2.9) and provided an updated Consultation Information Sheet a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 25 January 2024, Woodside sent a reminder email to Bass Strait Central Zone Scallop Fishery advising of the proposed activity (Record of Consultation, reference 2.9.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required.</p>
<p>Southern and Eastern Scalefish and Shark Fishery — CTS and Danish Seine</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Southern and Eastern Scalefish and Shark Fishery — CTS and Danish Seine for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Southern and Eastern Scalefish and Shark Fishery — CTS and Danish Seine on 26 July 2023, based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Southern and Eastern Scalefish and Shark Fishery — CTS and Danish Seine with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 26 July 2023, Woodside sent a letter to Southern and Eastern Scalefish and Shark Fishery — CTS and Danish Seine advising of the proposed activity (Record of Consultation, reference 1.45) and provided a Consultation Information Sheet. • On 18 August 2023, Woodside sent a reminder email to Southern and Eastern Scalefish and Shark Fishery — CTS and Danish Seine advising of the proposed activity (Record of Consultation, reference 1.45.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Southern and Eastern Scalefish and Shark Fishery — CTS and Danish Seine advising of the proposed activity (Record of Consultation, reference 2.9) and provided an updated Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 25 January 2024, Woodside sent a reminder email to Southern and Eastern Scalefish and Shark Fishery — CTS and Danish Seine advising of the proposed activity (Record of Consultation, reference 2.9.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth</p>

		<p>licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>No additional measures or controls are required.</p>
Southern and Eastern Scalefish and Shark Fishery — Shark Gillnet and Shark Hook		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Southern and Eastern Scalefish and Shark Fishery — Shark Gillnet and Shark Hook for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Southern and Eastern Scalefish and Shark Fishery — Shark Gillnet and Shark Hook on 26 July 2023, based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Southern and Eastern Scalefish and Shark Fishery — Shark Gillnet and Shark Hook with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 26 July 2023, Woodside sent a letter to Southern and Eastern Scalefish and Shark Fishery — Shark Gillnet and Shark Hook advising of the proposed activity (Record of Consultation, reference 1.45) and provided a Consultation Information Sheet. • On 18 August 2023, Woodside sent a reminder email to Southern and Eastern Scalefish and Shark Fishery — Shark Gillnet and Shark Hook advising of the proposed activity (Record of Consultation, reference 1.45.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Southern and Eastern Scalefish and Shark Fishery — Shark Gillnet and Shark Hook advising of the proposed activity (Record of Consultation, reference 2.9) and provided an updated Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 25 January 2024, Woodside sent a reminder email to Southern and Eastern Scalefish and Shark Fishery — Shark Gillnet and Shark Hook advising of the proposed activity (Record of Consultation, reference 2.9.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been	Woodside has assessed the potential for interaction with Commonwealth- and State-

	<p>accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>managed commercial fisheries in Section 4.6.2 of this EP.</p> <p>Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Southern Squid Jig Fishery</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Southern Squid Jig Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to the Southern Squid Jig Fishery on 26 July 2023, based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Southern Squid Jig Fishery with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 26 July 2023, Woodside sent a letter to the Southern Squid Jig Fishery advising of the proposed activity (Record of Consultation, reference 1.45) and provided a Consultation Information Sheet. • On 18 August 2023, Woodside sent a reminder email to the Southern Squid Jig Fishery advising of the proposed activity (Record of Consultation, reference 1.45.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Southern Squid Jig Fishery advising of the proposed activity (Record of Consultation, reference 2.9) and provided an updated Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 25 January 2024, Woodside sent a reminder email to Southern Squid Jig Fishery advising of the proposed activity (Record of Consultation, reference 2.9.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been</p>	<p>Woodside has assessed the potential for interaction with Commonwealth- and State-</p>

	<p>accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>managed commercial fisheries in Section 4.6.2 of this EP.</p> <p>Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Commonwealth Fisheries Association (CFA)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the CFA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to CFA on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the CFA with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed CFA advising of the proposed activity (Record of Consultation, reference 1.21) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to CFA advising of the proposed activity (Record of Consultation, reference 1.21.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed the CFA advising of the proposed activity (Record of Consultation, reference 2.8) and provided an updated Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 25 January 2024, Woodside sent a reminder email to CFA advising of the proposed activity (Record of Consultation, reference 2.8.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been</p>	<p>Woodside has assessed the potential for interaction with Commonwealth- and State-</p>

	<p>accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>managed commercial fisheries in Section 4.6.2 of this EP.</p> <p>Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>No additional measures or controls are required.</p>
<p>Bass Strait Scallop Industry Association (BSSIA)</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the BSSIA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to BSSIA on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the BSSIA with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed BSSIA advising of the proposed activity (Record of Consultation, reference 1.21) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to BSSIA advising of the proposed activity (Record of Consultation, reference 1.21.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed BSSIA advising of the proposed activity (Record of Consultation, reference 2.8) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to BSSIA advising of the proposed activity (Record of Consultation, reference 2.8.1). 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been</p>	<p>Woodside has assessed the potential for interaction with Commonwealth- and State-</p>

	<p>accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required.</p>
<p>South East Trawl Fishing Industry Association (SETFIA) (Representing: Southern Shark Industry Alliance (SSIA))</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with SETFIA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to SETFIA on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent a follow-up email seeking feedback on the proposed activities. • Woodside has addressed and responded to SETFIA over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed SETFIA advising of the proposed activity (Record of Consultation, reference 1.21) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 2 June 2023, Woodside also attempted to call SETFIA and followed up with an email to confirm that SETFIA also represents Small Pelagic Fishery Industry Association (SPFIA) and Southern Shark Industry Alliance (SSIA), or if there are any other appointed individuals Woodside should directly contact with the proposed activity information. • (1) On 20 June 2023, SETFIA responded via email and confirmed management of all three associations. SETFIA also thanked Woodside for the personal contact. • On 20 June 2023, SETFIA emailed again, requesting a meeting to discuss this EP. • On 20 June 2023, Woodside replied via email and requested SETFIA's availability in order to set up a meeting. • (2) On 20 June 2023, SETFIA emailed and confirmed its availability. SETFIA shared three documents usually shared with companies around drilling, seismic survey proponents and a press release on the pressure on the industry from shared marine proponents, whilst acknowledging that the first two were likely irrelevant to this activity. • On 21 June 2023, Woodside responded via email and confirmed a meeting time for the following day. • On 22 June 2023, Woodside met with SETFIA. Summary: <ul style="list-style-type: none"> ○ (3) SETFIA presented an overview of the three organisations under their organisation and the issues in regards to shared marine space projects which take up 70 per cent of SETFIA's time, specifically wind farms and the increased related consultation activity. ○ (4) Woodside provided a project overview and SETFIA advised it was not sure whether they fish in that area, however, there was no concerns with the activity. ○ (5) SETFIA advised it was good to hear equipment would be removed. Woodside clarified that the shore crossing pipeline will not be removed, however this was not related to this EP. ○ (6) SETFIA offered a one-off SMS service for a fee, to reach the licence holders for the relevant area. Woodside thanked SETFIA for that information. 		

<ul style="list-style-type: none"> ○ (3) SETFIA advised that a Perth meeting was planned for the following week with NOPSEMA where it was planned to let NOPSEMA know that enforcing companies to do blanket campaigns about activities was doing more harm than good. SETFIA received on average three packs of consultation information a day from industry which adds no value for the members. ○ (7) SETFIA advised that no further briefings from Woodside were needed and thanked Woodside for reaching out directly. ● On 26 July 2023, Woodside emailed SETFIA, thanking them for the previous meeting and advised that Woodside had been consulting directly with Commonwealth and Victorian fishery associations, Otway Basin recreational marine users, local shires, tourism operators, relevant government departments and local environment groups. Woodside had received contact details via AFMA for the four relevant Commonwealth fisheries and will send them a letter and consultation information sheet (both attached). ● (3) On 27 July 2023, SETFIA responded saying that they recognise Woodside is under pressure from the regulator to send letters to permit holders. However, for a variety of listed reasons SETFIA requested that Woodside not do that as only a tiny fraction of letters will arrive to the correct people, but SETFIA understands the regulator is forcing this approach. SETFIA was writing to NOPSEMA regarding AFMA releasing personal details for consultation. ● On 18 August 2023, Woodside thanked SETFIA for their understanding of the consultation requirements and reiterated commitments from the June meeting that Woodside will continue to contact relevant licence holders and for them to provide any feedback. ● On 12 January 2024, Woodside emailed SETFIA advising of the proposed activity (Record of Consultation, reference 2.8) and provided an updated Consultation Information Sheet. ● On 25 January 2024, Woodside sent a reminder email to SETFIA advising of the proposed activity (Record of Consultation, reference 2.8.1). 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>SETFIA confirmed:</p> <ul style="list-style-type: none"> (1) That it also manages SPFIA and SSIA. (2) It would like a meeting to discuss this EP, and shared documents in preparation. (3) The challenges SETFIA faced with multiple packs of consultation from various companies, a matter that would be brought up with NOPSEMA during a Perth meeting. (4) This activity did not concern SETFIA. (5) It supports equipment removal. (6) It had an SMS service to reach licence holders in the area if required. (7) No further briefings were required. 	<p>Woodside:</p> <ul style="list-style-type: none"> (1) Acknowledged SETFIA's feedback that it also managed SPFIA and SSIA. (2) Met with SETFIA and responded to all matters raised. (3) Reiterated its commitment to contact relevant licence holders in line with the relevant regulations for consultation and allow time for fisheries to provide any feedback on the activities. (4) Acknowledged SETFIA's feedback that it had no concerns with the activity. (5) Acknowledged SETFIA's feedback that they support equipment removal and clarified this is part of a separate EP. (6) Noted the provision of an SMS service to notify licence holders as required (7) Acknowledged SETFIA's feedback that no further briefings were required. <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside</p>	<p>(1-7) Not required.</p> <p>Woodside has assessed the potential for interaction with Commonwealth- and State-managed fisheries in Section 4.6.2 of this EP.</p> <p>No additional measures or controls are required.</p>

	will apply its Management of Change and Revision process (see Section 9.8).	
Southern Shark Industry Alliance (SSIA) (Represented by SETFIA)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Southern Shark Industry Alliance (SSIA) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting comments or feedback. • Consultation Information provided to SSIA on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the SSIA with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed SSIA advising of the proposed activity (Record of Consultation, reference 1.21) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside emailed SSIA advising of the proposed activity (Record of Consultation, reference 1.21.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed SSIA advising of the proposed activity (Record of Consultation, reference 2.8) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to SSIA advising of the proposed activity (Record of Consultation, reference 2.8.1). 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required.
Southern Rock Lobster Limited		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Southern Rock Lobster Limited for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since June 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Southern Rock Lobster Limited on 12 January 2024, based on their function, interest and activities. 		

<ul style="list-style-type: none"> • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided Southern Rock Lobster Limited with the opportunity to provide feedback over a 3-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 12 January 2024, Woodside emailed Southern Rock Lobster Limited advising of the proposed activity (Record of Consultation, reference 2.10) and provided an updated Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 25 January 2024, Woodside sent a reminder email to Southern Rock Lobster Limited advising of the proposed activity (Record of Consultation, reference 2.10.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required
State Commercial Fisheries and Representative Bodies		
Rock Lobster Fishery		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Rock Lobster Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to the Rock Lobster Fishery (via Seafood Industry Victoria) on 19 July 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has provided the Rock Lobster Fishery with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 July 2023, SIV forwarded information (provided by Woodside) via email (where available) to commercial fishing licence holders in the Rock Lobster Fishery advising of the proposed activity (Record of Consultation, reference 1.20). This included a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 9 February 2024, SIV forwarded information (provided by Woodside) via email (where available) to commercial fishing licence holders in the Rock Lobster Fishery advising of the proposed activity (Record of Consultation, reference 2.18) and provided an updated Consultation Information Sheet. SIV also published the Consultation Information Sheet on its website. • (1) On 10 February 2024, an individual fisher replied to Woodside via email and asked whether there will be works in the state waters of Woodside's boundary within the next two weeks. • On 13 February 2024, Woodside replied via email and confirmed that there are no plans for any activities this quarter, and enquired where and what the individual was fishing. 		

<ul style="list-style-type: none"> • (2) On 15 February 2024, the fisher confirmed that they are an owner/operator in the western zone rock lobster industry. • On 15 February 2024, Woodside replied, thanked the fisher for the feedback and said that they will be kept updated. • On 19 February 2024, an individual Warrnambool crayfisher emailed Woodside and: <ul style="list-style-type: none"> ○ (3) Stated that this project's EMBA will affect the southern rock lobster population in their working area ○ (4) Shared their concern on how this project will affect the fishery's future. • On 22 February 2024, Woodside responded and: <ul style="list-style-type: none"> ○ Noted the feedback in regard to this EP's activities on southern rock lobsters. ○ Explained in more detail EMBA and potential environmental impacts: <ul style="list-style-type: none"> ▪ The EMBA, as shown in the consultation information, is the largest spatial extent where these activities could potentially have an environmental consequence (direct or indirect impact). ▪ The EMBA represents the merged area of many possible paths a high unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of this release. ▪ In this case, the hydrocarbon spill risk would be due to a marine diesel spill from a Woodside vessel or loss of well containment. ○ Reiterated that Woodside implements a range of controls to prevent spills, and maintains spill response capabilities to mitigate the effects of a spill if one did occur. ○ Explained that, in the highly unlikely case of a hydrocarbon spill, the hydrocarbons will be concentrated in surface waters and are unlikely to affect the sandy seabed where subsea infrastructure is installed, hence southern rock lobsters and the habitat are unlikely to be directly impacted by a spill. ○ Explained that planned activities are restricted to the smaller operational area and supplied a map. ○ Said that fishers are expected to have unrestricted access to the locations, following removal of the Minerva subsea infrastructure. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>A Western zone fisher responded and:</p> <p>(1) Asked whether Woodside was conducting any work in State waters within the next two weeks (February 2024).</p> <p>(2) Confirmed that they were in the western zone rock lobster industry.</p> <p>A Warrnambool crayfisher responded and:</p> <p>(3) Stated that the EMBA covers their working area.</p> <p>(4) Shared concern about this project's effect on the southern rock lobster population in the area.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>For the Western zone fisher, Woodside:</p> <p>(1) Confirmed there was no planned activity in the next quarter and enquired where the fisher was from.</p> <p>(2) Thanked the fisher for their feedback and said they would be kept updated.</p> <p>For the Warrnambool fisher, Woodside:</p> <p>(3) Explained the EMBA in more detail, including that it is the largest spatial extent where these activities could potentially have an environmental consequence and shared a map of the actual operational area. Woodside explained that on removal of infrastructure, fishers are expected to have unrestricted access to the locations.</p> <p>(4) Explained that in the highly unlikely case of a hydrocarbon spill, it will be concentrated in surface waters and unlikely to</p>	<p>(1-3) Not required.</p> <p>(4) The Oil Pollution Emergency Plan (OPEP) (Appendix E) describes emergency plans for the unlikely event of a hydrocarbon spill.</p> <p>Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP.</p> <p>No additional measures or controls are required.</p>

	<p>affect the sandy seabed where subsea infrastructure is installed, hence southern rock lobsters and the habitat are unlikely to be directly impacted by a spill. Woodside also reiterated its extensive range of controls to prevent spills as well as spill response capabilities, if one did occur.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	
Giant Crab Fishery		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Giant Crab Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to the Giant Crab Fishery (via Seafood Industry Victoria) on 19 July 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has provided the Giant Crab Fishery with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 July 2023, SIV forwarded information (provided by Woodside) via email (where available) to commercial fishing licence holders in the Giant Crab Fishery, advising of the proposed activity (Record of Consultation, reference 1.20). This included a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 9 February 2024, SIV forwarded information (provided by Woodside) via email (where available) to commercial fishing licence holders in the Giant Crab Fishery, advising of the proposed activity (Record of Consultation, reference 2.18) and provided an updated Consultation Information Sheet. SIV also published the Consultation Information Sheet on its website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required
Abalone Fishery		

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Abalone Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting comments or feedback.
- Consultation Information provided to the Abalone Fishery (through Abalone Council Victoria) on 19 June 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community.
- Woodside has sent follow-up emails seeking feedback on the proposed activities.
- Woodside has provided the Abalone Fishery with the opportunity to provide feedback over a 9-month period.

Summary of information provided and record of consultation:

- On 19 June 2023 through Abalone Council Victoria (Record of Consultation 1.23), Woodside advised the Abalone Fishery of the proposed activity and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 11 July 2023, through Abalone Council Victoria (Record of Consultation, reference 1.23.1), Woodside advised Abalone Fishery of the proposed activity and provided a Consultation Information Sheet.
- On 12 January 2024, through Abalone Council Victoria (Record of Consultation, reference 2.7) Woodside advised Abalone Fishery of the proposed activity and provided an updated Consultation Information Sheet.
- On 25 January 2024, Woodside sent a reminder email to Abalone Council Victoria (Record of Consultation, reference 2.7.1), advising Abalone Fishery of the proposed activity.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required

Wrasse Fishery

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Wrasse Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to the Wrasse Fishery (via Seafood Industry Victoria) on 19 July 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community.
- Woodside has provided the Wrasse Fishery with the opportunity to provide feedback over a 9-month period.

Summary of information provided and record of consultation:

<ul style="list-style-type: none"> On 19 July 2023, SIV forwarded information (provided by Woodside) via email (where available) to commercial fishing licence holders in the Wrasse Fishery advising of the proposed activity (Record of Consultation, reference 1.20). This included a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 9 February 2024, SIV forwarded information (provided by Woodside) via email (where available) to commercial fishing licence holders in the Wrasse Fishery advising of the proposed activity (Record of Consultation, reference 2.18) and provided an updated Consultation Information Sheet. SIV also published the Consultation Information Sheet on its website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required
Snapper Fishery		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Snapper Fishery for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to the Snapper fishery (via Seafood Industry Victoria) on 19 July 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has provided the Snapper Fishery with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 19 July 2023, SIV forwarded information (provided by Woodside) via email (where available) to commercial fishing licence holders in the the Snapper Fishery advising of the proposed activity (Record of Consultation, reference 1.20). This included a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 9 February 2024, SIV forwarded information (provided by Woodside) via email (where available) to commercial fishing licence holders in the Snapper Fishery, advising of the proposed activity (Record of Consultation, reference 2.18) and provided an updated Consultation Information Sheet. SIV also published the Consultation Information Sheet on its website. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required

Seafood Industry Victoria (SIV)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with SIV for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to SIV on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has addressed and responded to the SIV over a 10-month period. • At the request of Seafood Industry Victoria, the summary of information provided and record of consultation has not been made publicly available. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>SIV:</p> <p>(1) Advised it is best placed to disseminate information to relevant members and was working on a service model to support this in the future.</p> <p>(2) Noted that Abalone Fishery licence holders are represented by Abalone Council Victoria.</p> <p>(3) Confirmed it would distribute the Woodside consultation material to its members.</p> <p>(4) Advised it had a new Marine Development Policy and provided a link to the policy. Advice was provided that the policy may be updated from time to time and Woodside should monitor the website for updates when referencing the policy.</p> <p>(5) Stated that a service model was now in place and Woodside was asked to have a service agreement with SIV for future distribution of consultation information to relevant fishery licence holders.</p> <p>(6) Advised it had distributed the communication material to relevant fishery holders</p> <p>(7) Advised no specific feedback had been received from relevant licence holders that was</p>	<p>Woodside:</p> <p>(1) Confirmed SIV as the distribution point for consultation materials for its relevant members/licence holders:</p> <ul style="list-style-type: none"> • Rock Lobster • Giant Crab • Wrasse • Snapper. <p>(2) Noted Abalone Council Victoria (ACV) as the representative for the Abalone licence fishers and also directed consultation material to ACV for distribution.</p> <p>(3) Acknowledged SIV would distribute consultation information to relevant licence holders.</p> <p>(4) Acknowledged the introduction of the SIV Marine Development Policy</p> <p>(5) Signed a service agreement in February 2024 for the distribution of all future consultation materials which included the updated Consultation Information Sheet.</p> <p>(6) Noted SIV had distributed the consultation information</p> <p>(7) Noted SIV had not received any feedback on the EP that it was able to share with Woodside.</p> <p>(8) Provided SIV with a document outlining the references to SIV that would be made publicly available upon submission of this EP. Noted this was an opportunity for SIV to review and make comments for Woodside's consideration. Clarified Woodside's</p>	<p>(1-8) Not required.</p> <p>Woodside has assessed the potential for interaction with Commonwealth and State managed fisheries in Section 4.6.2 of this EP.</p> <p>Woodside will provide notifications to government departments (AFMA, DAFF, VFA), industry representative bodies (CFA, SIV), Commonwealth licenced fishers that have the potential to be impacted by activities in the Operational Area (The Southern and Eastern Scalefish and Shark Fishery (CTS and Shark Gillnet) and Southern Squid Jig Fishery), and Victorian licenced fishers that have requested notifications during consultation facilitated by SIV prior to the commencement and upon completion of activities as referenced as PS 1.5 in this EP.</p> <p>Woodside has consulted SIV in the course of preparing this EP. Woodside has assessed the claims or objections raised by SIV.</p> <p>No additional measures or controls have been put in place.</p>

<p>accompanied by permission from the person/entity to pass this on.</p> <p>(8) Requested that Woodside maintains confidentiality regarding all past and future correspondence with SIV, either verbal or electronic, unless otherwise agreed in writing with SIV.</p>	<p>position that historical engagement with SIV was always on the basis that the correspondence with SIV and licence holders would be included in the EP for the proposed activities, which would then be submitted to the regulators as required under legislation. Woodside’s understanding was SIV was aware and consented to this. Noted that going forward, the use and disclosure of information and correspondence will be governed by the terms of the SIV engagement agreement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.7.4).</p>	
<p>Abalone Council Victoria</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Abalone Council Victoria for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Abalone Council Victoria on 19 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Abalone Council Victoria with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 June 2023, Woodside emailed Abalone Council Victoria advising of the proposed activity (Record of Consultation, reference 1.23) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 11 July 2023, Woodside sent a reminder email to Abalone Council Victoria advising of the proposed activity (Record of Consultation, reference 1.23.1) and provided a Consultation Information Sheet • On 12 January 2024, Woodside emailed Abalone Council Victoria advising of the proposed activity (Record of Consultation, reference 2.7) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Abalone Council Victoria advising of the proposed activity (Record of Consultation, reference 2.7.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside</p>	<p>Woodside has assessed the potential for interaction with Commonwealth- and State-</p>

	will apply its Management of Change and Revision process (see Section 9.8).	managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required.
Abalone Victoria Central Zone		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Abalone Victoria Central Zone for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Abalone Victoria Central Zone on 19 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Abalone Victoria Central Zone with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 June 2023, Woodside emailed Abalone Victoria Central Zone advising of the proposed activity (Record of Consultation, reference 1.23) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 11 July 2023, Woodside sent a reminder email to Abalone Victoria Central Zone. Advising of the proposed activity (Record of Consultation, reference 1.23.1) and provided a Consultation Information Sheet • On 12 January 2024, Woodside emailed Abalone Victoria Central Zone advising of the proposed activity (Record of Consultation, reference 2.7) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to Abalone Victoria Central Zone advising of the proposed activity (Record of Consultation, reference 2.7.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required
Victorian Scallop Fishermen's Association Inc		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Victorian Scallop Fishermen's Association Inc for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. 		

<ul style="list-style-type: none"> • Consultation Information provided to Victorian Scallop Fishermen's Association Inc on 19 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Victorian Scallop Fishermen's Association Inc with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 June 2023, Woodside emailed Victorian Scallop Fishermen's Association Inc advising of the proposed activity (Record of Consultation, reference 1.23) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 11 July 2023, Woodside sent a reminder email to Victorian Scallop Fishermen's Association Inc advising of the proposed activity (Record of Consultation, reference 1.23.1) and provided a Consultation Information Sheet • On 12 January 2024, Woodside emailed Victorian Scallop Fishermen's Association Inc advising of the proposed activity (Record of Consultation, reference 2.7) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to Victorian Scallop Fishermen's Association Inc advising of the proposed activity (Record of Consultation, reference 2.7.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required
Victorian Rock Lobster Association (VRLA)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Victorian Rock Lobster Association (VRLA) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically: Consultation Information Sheet publicly available on the Woodside website since May 2023.</p> <ul style="list-style-type: none"> • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to VRLA on 2 June 2023, based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the VRLA with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed VRLA advising of the proposed activity (Record of Consultation, reference 1.19) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to VRLA advising of the proposed activity (Record of Consultation, reference 1.19.1) and provided a Consultation Information Sheet. 		

<ul style="list-style-type: none"> On 12 January 2024, Woodside emailed VRLA advising of the proposed activity (Record of Consultation, reference 2.10) and provided an updated Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 25 January 2024, Woodside sent a reminder email to VRLA advising of the proposed activity (Record of Consultation, reference 2.10.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required
Apollo Bay Fishermen's Co-Operative		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Apollo Bay Fishermen's Co-operative for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to Apollo Bay Fishermen's Co-Operative on 2 June 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the Apollo Bay Fishermen's Co-Operative with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 2 June 2023, Woodside emailed Apollo Bay Fishermen's Co-Operative advising of the proposed activity (Record of Consultation, reference 1.19) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to Apollo Bay Fishermen's Co-Operative advising of the proposed activity (Record of Consultation, reference 1.19.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed Apollo Bay Fishermen's Co-Operative advising of the proposed activity (Record of Consultation, reference 2.33) and provided an updated Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 25 January 2024, Woodside sent a reminder email to Apollo Bay Fishermen's Co-operative advising of the proposed activity (Record of Consultation, reference 2.33.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP.

	will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required
South Eastern Professional Fishermen’s Association Inc.		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with South Eastern Professional Fishermen’s Association Inc. for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to South Eastern Professional Fishermen’s Association Inc. on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the South Eastern Professional Fishermen’s Association Inc. with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, emailed South Eastern Professional Fishermen’s Association Inc advising of the proposed activity (Record of Consultation, reference 1.19) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to South Eastern Professional Fishermen’s Association Inc advising of the proposed activity (Record of Consultation, reference 1.19.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed South Eastern Professional Fishermen’s Association Inc advising of the proposed activity (Record of Consultation, reference 2.7) and provided an updated Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 25 January 2024, Woodside sent a reminder email to South Eastern Professional Fishermen’s Association Inc advising of the proposed activity (Record of Consultation, reference 2.7.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required
Warrnambool Professional Fishermen’s Association		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Warrnambool Professional Fishermen’s Association for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. 		

<ul style="list-style-type: none"> • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Warrnambool Professional Fishermen’s Association on 12 January 2024 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent a follow-up email seeking feedback on the proposed activities. • Woodside has provided the Warrnambool Professional Fishermen’s Association with the opportunity to provide feedback over a 3-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 12 January 2024, Woodside emailed Warrnambool Professional Fishermen’s Association advising of the proposed activity (Record of Consultation, reference 2.10) and provided an updated Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 25 January 2024, Woodside sent a reminder email to Warrnambool Professional Fishermen’s Association advising of the proposed activity (Record of Consultation, reference 2.10.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required
Eastern Victorian Rock Lobster Industry Association		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Eastern Victorian Rock Lobster Industry Association for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Eastern Victorian Rock Lobster Industry Association on 12 January 2024 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent a follow-up email seeking feedback on the proposed activities. • Woodside has provided the Eastern Victorian Rock Lobster Industry Association with the opportunity to provide feedback over a 3-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 12 January 2024, Woodside emailed Eastern Victorian Rock Lobster Industry Association advising of the proposed activity (Record of Consultation, reference 2.10) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Eastern Victorian Rock Lobster Industry Association advising of the proposed activity (Record of Consultation, reference 2.10.1) 		

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth- and State-managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required.
Recreational Marine Users and Representative Bodies		
<p>Otway Recreational Marine Users</p> <p>Group 1: <i>Apollo Bay Dive Centre and Surf</i> <i>Apollo Bay Fishing Charters</i> <i>Apollo Bay Surf and Kayak</i> <i>Dive Industry Association of Australia</i> <i>Go Surf School</i> <i>SCUBA Divers Federation of Victoria</i> <i>Apollo Bay Surf Lifesaving Club</i> <i>Apollo Bay Sailing Club</i> <i>Ocean Racing Club of Victoria</i> <i>Twelve Apostles Helicopters Tours</i></p> <p>Group 2: <i>Academy of Scuba</i> <i>Allfresh Seafood</i> <i>Anglesea Motor Yacht Club</i> <i>Boating Industry Association of Victoria</i> <i>Diving Industry Victoria</i> <i>Beach Patrol 3280</i> <i>Paddle Victoria</i> <i>Point Leo Boat Club</i> <i>Port Fairy Yacht Club</i> <i>Rye Yacht Club</i></p>		

<p>Victoria Game Fishing Club Warrnambool Yacht Club Western Abalone Divers Association Port Campbell Surf Lifesaving Club Beach Patrol 3280</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Otway Recreational Marine Users for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Otway Recreational Marine Users and Representative Bodies Group 1 on 19 June 2023 and Group 2 on 12 January 2024 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has addressed and responded to Otway Recreational Marine Users and Representative Bodies Group 1 over a 10-month period and Group 2 over a 3-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 June 2023, Woodside emailed Otway Recreational Marine Users (Group 1) advising of the proposed activity (Record of Consultation, reference 1.35) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 11 July 2023, Woodside sent a reminder email to Otway Recreational Marine Users (Group 1) advising of the proposed activity (Record of Consultation, reference 1.35.1) and provided a Consultation Information Sheet • (1) On 27 July 2023, an Otway Recreational Marine User member responded advising Woodside to decommission safely and to not open up any additional wells or drilling. • On 27 July 2023, Woodside thanked the Otway Recreational Marine User member for their response and explained: <ul style="list-style-type: none"> ○ All activities will be undertaken in line with maritime and petroleum industry safety and environmental standards. ○ There will be no additional well interventions or drilling activities in relation to this activity as Minerva was a decommissioning activity. • On 12 January 2024, Woodside emailed Otway Recreational Marine Users (Groups 1 and 2) advising of the proposed activity (Record of Consultation, references 2.26 and 2.43) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Otway Recreational Marine Users (Groups 1 and 2) advising of the proposed activity (Record of Consultation, references 2.26.1 and 2.43.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>

<p>(1) One Otway Recreational Marine group member requested that Woodside does not create any additional wells.</p>	<p>(1) Woodside replied thanking them for their response and clarifying that this activity does not involve any drilling, and that Minerva is decommissioning.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Not required.</p> <p>No additional measures or controls are required.</p>
<p>VR Fish</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with VR Fish for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to VR Fish on 19 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the VR Fish with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 June 2023, Woodside emailed VR Fish advising of the proposed activity (Record of Consultation, reference 1.23) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 11 July 2023, Woodside sent a reminder email to VR Fish advising of the proposed activity (Record of Consultation, reference 1.23.1) and provided a Consultation Information Sheet • On 12 January 2024, Woodside emailed VR Fish advising of the proposed activity (Record of Consultation, reference 2.7) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to VR Fish advising of the proposed activity (Record of Consultation, reference 2.7.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>No additional measures or controls are required.</p>
<p>Apollo Bay Visitor Information Centre</p>		

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Apollo Bay Visitor Information Centre for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to Apollo Bay Visitor Information Centre on 19 June 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community.
- Woodside has sent follow-up emails seeking feedback on the proposed activities.
- Woodside has provided the Apollo Bay Visitor Information Centre with the opportunity to provide feedback over a 10-month period.

Summary of information provided and record of consultation:

- On 19 June 2023, Woodside emailed Apollo Bay Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 1.35) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 11 July 2023, Woodside sent a reminder email to Apollo Bay Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 1.35.1) and provided a Consultation Information Sheet.
- On 12 January 2024, Woodside emailed Apollo Bay Visitor information Centre advising of the proposed activity (Record of Consultation, reference 2.26) and provided an updated Consultation Information Sheet.
- On 25 January 2024, Woodside sent a reminder email to Apollo Bay Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 2.26.1)

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.

Port Campbell Visitor Information Centre

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Port Campbell Visitor Information Centre for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to Port Campbell Visitor Centre on 19 June 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community.
- Woodside has sent follow-up emails seeking feedback on the proposed activities.
- Woodside has provided the Port Campbell Visitor Information Centre with the opportunity to provide feedback over a 10-month period.

Summary of information provided and record of consultation:

<ul style="list-style-type: none"> On 19 June 2023, Woodside emailed Port Campbell Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 1.35) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 11 July 2023, Woodside sent a reminder email to Port Campbell Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 1.35.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed Port Campbell Visitor information Centre advising of the proposed activity (Record of Consultation, reference 2.26) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to Port Campbell Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 2.26.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Warrnambool Visitor Information Centre		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Warrnambool Visitor Information Centre for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to Warrnambool Visitor Information Centre on 19 June 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the Warrnambool Visitor Information Centre with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 19 June 2023, Woodside emailed Warrnambool Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 1.35) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 11 July 2023, Woodside sent a reminder email to Warrnambool Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 1.35.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed Warrnambool Visitor information Centre advising of the proposed activity (Record of Consultation, reference 2.26) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to Warrnambool Visitor Information Centre advising of the proposed activity (Record of Consultation, reference 2.26.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan

<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>No additional measures or controls are required.</p>
<p>Great Ocean Road Regional Tourism</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Great Ocean Road Regional Tourism for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Great Ocean Road Regional Tourism on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Great Ocean Road Regional Tourism with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Great Ocean Road Regional Tourism advising of the proposed activity (Record of Consultation, reference 1.12) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Great Ocean Road Regional Tourism advising of the proposed activity (Record of Consultation, reference 1.12.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Great Ocean Road Regional Tourism advising of the proposed activity (Record of Consultation, reference 2.41) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Great Ocean Road Regional Tourism advising of the proposed activity (Record of Consultation, reference 2.41.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>No additional measures or controls are required.</p>
<p>Twelve Apostles Tourism and Business Group</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Twelve Apostles Tourism and Business Group for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p>		

<ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Twelve Apostles Tourism and Business Group on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Twelve Apostles Tourism and Business Group with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Twelve Apostles Tourism and Business Group advising of the proposed activity (Record of Consultation, reference 1.12) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Twelve Apostles Tourism and Business Group advising of the proposed activity (Record of Consultation, reference 1.12.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Twelve Apostles Tourism and Business Group advising of the proposed activity (Record of Consultation, reference 2.41) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Twelve Apostles Tourism and Business Group advising of the proposed activity (Record of Consultation, reference 2.41.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Titleholders and Operators		
Beach Energy		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Beach Energy for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Beach Energy on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided Beach Energy with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p>		

<ul style="list-style-type: none"> On 31 May 2023, Woodside emailed Beach Energy advising of the proposed activity (Record of Consultation, reference 1.14) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to Beach Energy advising of the proposed activity (Record of Consultation, reference 1.14.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed Beach Energy advising of the proposed activity (Record of Consultation, reference 2.36) and provided an updated Consultation Information Sheet. On 17 January 2024, Beach Energy emailed Woodside with updated contact details for consultation. On 17 January 2024, Woodside responded and acknowledged the latest email contact details. Woodside confirmed it had updated its contacts list. On 25 January 2024, Woodside sent a reminder email to Beach Energy advising of the proposed activity (Record of Consultation, reference 2.36.1). 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Cooper Energy		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Cooper Energy for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to Cooper Energy on 31 May 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the Cooper Energy with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 31 May 2023, Woodside emailed Cooper Energy advising of the proposed activity (Record of Consultation, reference 1.14) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to Cooper Energy advising of the proposed activity (Record of Consultation, reference 1.14.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed Cooper Energy advising of the proposed activity (Record of Consultation, reference 2.36) and provided an updated Consultation Information Sheet. On 25 January 2024, Woodside sent a reminder email to Cooper Energy advising of the proposed activity (Record of Consultation, reference 2.36.1). 		

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Conoco Phillips Australia		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Conoco Phillips Australia for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Conoco Phillips Australia on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Conoco Phillips Australia with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Conoco Phillips Australia advising of the proposed activity (Record of Consultation, reference 1.14) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Conoco Phillips Australia advising of the proposed activity (Record of Consultation, reference 1.14.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Conoco Phillips Australia advising of the proposed activity (Record of Consultation, reference 2.36) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Conoco Phillips Australia advising of the proposed activity (Record of Consultation, reference 2.36.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Peak Industry Representative bodies		
Australian Energy Producers (AEP)		

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with AEP (formerly APPEA) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to AEP on 31 May 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community.
- Woodside has sent follow-up emails seeking feedback on the proposed activities.
- Woodside has provided the AEP with the opportunity to provide feedback over a 10-month period.

Summary of information provided and record of consultation:

- On 31 May 2023, Woodside emailed AEP advising of the proposed activity (Record of Consultation, reference 1.6) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 22 June 2023, Woodside sent a reminder email to AEP advising of the proposed activity (Record of Consultation, reference 1.6.1) and provided a Consultation Information Sheet.
- On 12 January 2024, Woodside emailed AEP advising of the proposed activity (Record of Consultation, reference 2.39) and provided an updated Consultation Information Sheet
- On 25 January 2024, Woodside sent a reminder email to AEP advising of the proposed activity (Record of Consultation, reference 2.39.1)

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.

Traditional Custodians and Nominated Representative Corporations

Bunurong Land Council Aboriginal Corporation (BLCAC)

BLCAC is a Registered Aboriginal Party (RAP) recognised as per the Aboriginal Heritage Act 2006 (Vic.), whose function is to protect and manage the Aboriginal cultural heritage of the Bunurong people of the South-Eastern Kulin Nation in the state of Victoria in Australia.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with BLCAC for the purposes of 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on BLCAC's preferred method of consultation. This resulted in a virtual meeting with BLCAC nominated representatives. This meeting included Woodside presenting information in a format and style that was readily accessible and appropriate.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to BLCAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.

- Articulated planned and unplanned environmental risks and impacts, with proposed controls to manage potential impacts to ALARP and acceptable levels.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Woodside has provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing and environment plan".
- Provided response to questions asked about the activity through consultation. Through these questions, BLCAC have displayed an understanding of the activities under this EP.
- Advised that BLCAC can request that particular information provided in the consultation not be published (to align with 25(4)).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Woodside commenced consultation with BLCAC in May 2023. Woodside has addressed and responses to BLCAC queries over 9 months, demonstrating a "reasonable period" of consultation.

Woodside asked BLCAC if it was aware of any other Traditional Custodians groups or individuals with whom Woodside should consult. Non were identified.

Woodside has provided a reasonable opportunity for input since May 2023, and a genuine two-way dialogue has occurred via a meeting and written exchanges to further understand the environment in which the activity will take place. BLCAC has engaged in the detail of the activity asked related questions. The details of these engagement are described in the consultation summary below.

Woodside engaged on ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revisions process (see Section 9.8 of the EP).

Woodside considered that measures and controls described in the EP address the potential impact from the proposed activity on BLCAC functions, interests or activities.

Summary of information provided and record of consultation:

- On 19 May 2023, Woodside emailed BLCAC advising of the proposed activity (Record of Consultation, reference 1.39) and provided a Consultation Information Sheet.
- **(1)** On 19 May 2023, BLCAC called Woodside advising that BLCAC do not require consultation as the activity does not impact their country. Woodside provided further information on the activity and EMBA and BLCAC stated they would discuss the requirement for consultation internally.
- On 19 May 2023, BLCAC forwarded Woodside's email to other BLCAC contacts, cc'ing Woodside.
- On 2 June 2023, Woodside emailed BLCAC following up on the proposed activity and suggesting a virtual meeting to discuss consultation.
- On 13 July 2023, Woodside emailed BLCAC following up on the proposed activity and offering to arrange a discussion with project engineers.
- On 18 July 2023, Woodside emailed BLCAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that BLCAC advised Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 10 August 2023, Woodside emailed BLCAC following up on the proposed activity and offering to arrange a virtual meeting.
- On 30 October 2023, Woodside emailed BLCAC following up on whether BLCAC would like a meeting to discuss the Environmental Plan.
- On 31 October 2023, BLCAC emailed Woodside advising an alternative point of contact, requesting the impact assessment and a virtual meeting.
- On 31 October 2023, Woodside emailed BLCAC a Consultation Information Sheet and details of the proposed times for a virtual meeting.
- On 14 November 2023, Woodside emailed BLCAC following up on the suggestion of a virtual meeting to discuss the information.

- On 14 November 2023, BLCAC emailed Woodside advising an alternative point of contact.
- On 14 November 2023, Woodside emailed BLCAC requesting availability for a virtual meeting.
- On 29 November 2023, BLCAC emailed Woodside proposing 30 November or 1 December for a virtual meeting.
- On 30 November 2023, Woodside emailed BLCAC requesting availability on 4 or 6 December for a virtual meeting.
- On 1 December 2023, BLCAC emailed Woodside advising of availability on the 6 December for a virtual meeting.
- On 5 December 2023, Woodside emailed BLCAC requesting availability on 7 or 8 December for a virtual meeting.
- On 5 December 2023, BLCAC emailed Woodside confirming availability on 8 December for a virtual meeting.
- On 5 December 2023, Woodside emailed BLCAC confirming availability on 8 December for a virtual meeting.
- On 5 December 2023, BLCAC emailed Woodside confirming availability on 8 December for a virtual meeting.
- On 8 December 2023, BLCAC emailed Woodside providing contact details for a Cultural Values Project Manager as a contact point for a possible Cultural Values Assessment.
- On 8 December 2023, Woodside met with BLCAC. At the meeting Woodside:
 - Described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general contents of EPs;
 - Displayed a map of activities open for feedback to be discussed in the meeting;
 - Described the proposed activities for this EP including types of vessels involved and decommissioning activities;
 - Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks were not expected to occur and were unlikely;
 - Displayed and spoke to the EMBA for the proposed activity;
 - Described an oil spill response approach and the use of key response techniques should this unexpected event occur;
 - Woodside specifically asked the following questions:
 - How could these activities impact your cultural values, interests, and activities – does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - Advised that Woodside would continue to take feedback from BLCAC for the life of the EP;
 - Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should BLCAC wish to provide feedback directly to the Regulator.
- At the 8 December 2023 meeting BLCAC provided the following feedback:
 - **(1)** BLCAC are supportive of the broad approach to consultation taken by Woodside but note that the project is somewhat removed from BLCAC's area of interest.
 - **(2)** Suggested spill response training for the PBCs given this is the only way in which BLCAC would be impacted (the activity site is not on Bunurong country). Woodside noted this request and said it will feed back to the team and work with BLCAC's Cultural Values Department in the future on the matter as part of ongoing consultation with the group.

- **(3)** Noted that BLCAC have a Cultural Values department which are responsible for the management of cultural knowledge relating to stories, animals, connections, plants and intangible values. BLCAC said it may be appropriate for their own Cultural Values Department to do desktop research to confirm that no cultural interests will be impacted and to provide suggestions on how to manage the impact to Woodside. Woodside agreed to wait to hear from BLCAC's Cultural Values department on the matter.
- On 15 January 2024, Woodside emailed BLCAC identifying a new point of contact and offering to arrange an in person meeting in Victoria should this be required by BLCAC.
- On 17 January 2024, Woodside phoned BLCAC but there was no answer so a message was left to return the call when possible.
- On 23 January 2024, Woodside emailed BLCAC providing an update on planned activities and associated environmental management measures, and a revised Consultation Information Sheet. The email requested feedback in relation to the revised activities and potential impacts on cultural values.
- On 2 February 2024, Woodside emailed BLCAC following up on the status of a potential Cultural Values Assessment and support relating to Ranger Programs. Woodside also offered to meet with BLCAC in person in February.
- On 2 February 2024, Woodside emailed BLCAC via an alternative contact to follow up on the potential Cultural Values Assessment and support for Ranger Programs.
- **(3)** On 5 February 2024, BLCAC emailed Woodside advising that a Cultural Values Assessment has not yet been undertaken for this project. BLCAC advised they are happy to meet and discuss a potential Cultural Values Assessment, however they do not have capacity to undertake this until the beginning of next financial year.
- On 5 February 2024, BLCAC emailed Woodside suggesting an in-person meeting in February and requested further information about the activity.
- On 5 February 2024, Woodside emailed BLCAC providing a summary information sheet and minutes from the meeting on 8 December 2023.
- On 7 March 2024, Woodside had a phone discussion with BLCAC to plan a virtual meeting.
- On 7 March 2024, Woodside emailed BLCAC proposing a meeting date and time and attached the BLCAC Meeting Request Booking Form.
- On 7 March 2024, BLCAC emailed Woodside a meeting invite.
- On 13 March 2024, Woodside and BLCAC had a virtual meeting. At the meeting:
 - Woodside explained the location of the Minerva activities, the scope of the activities, and the EMBA
 - Woodside advised the planned EP submission timeframe, and noted that consultation with BLCAC had started in 2023.
 - **(4)** BLCAC advised that eels and seagrass are culturally important to the Bunurong people.
 - **(3)** BLCAC advised that instead of a Cultural Values Assessment, a workshop with community members would be an appropriate mechanism to capture any feedback the community may wish to share with Woodside. BLCAC advised they would look to schedule that workshop in April, and would get back to Woodside with a proposed date.
 - **(3)** Woodside responded that they would support a workshop but that any feedback received as a result of the workshop would be treated as ongoing consultation, and information arising from the workshop would be assessed through the Management of Change process.
- On 13 March 2024, Woodside emailed BLCAC with a summary of the 13 March meeting:
 - **(4)** Woodside noted BLCAC's advice regarding the cultural importance of eels and seagrass and that these would be incorporated in the EPs.
 - Woodside advised the planned EP submission timeframe, and noted that consultation with BLCAC had started in 2023.
 - **(3)** Woodside would await BLCAC's advice regarding the date for a community workshop. Woodside advised that the workshop would form part of ongoing consultation, and any feedback received from the workshop would be assessed through the Management of Change process. Woodside noted that there mechanisms that Woodside can use should members of the community request that information shared with Woodside Energy is not made publicly available.
 - The Consultation Information Sheet "Activity Update – Minerva Decommissioning Environment Plans" was attached to the email.

<ul style="list-style-type: none"> (3) On 14 March 2024, BLCAC emailed Woodside providing a quote for the proposed community workshop. On 14 March 2024, Woodside emailed BLCAC confirming that Woodside would review the quote, and seeking an accounts contact for vendor payment setup. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) BLCAC advised that the project is significantly removed from their area of interest.</p> <p>(2) BLCAC suggested spill response training for PBC’s as an opportunity to mitigate potential impact.</p> <p>(3) BLCAC had suggested a Cultural Values Assessment would be an appropriate mechanism to share information with Woodside. BLCAC have subsequently informed Woodside that they propose to conduct a workshop with Bunurong community members in order to give members the opportunity to provide feedback on Woodside’s activities. BLCAC will propose a date (nominally April) for this workshop. BLCAC has provided a quote for this workshop.</p> <p>(4) BLCAC advised that eels and seagrass are culturally important to the Bunurong people.</p>	<p>(1) Woodside noted BLCAC’s positions and explained the concept of an EMBA and the requirement for consultation.</p> <p>(2) Woodside responded to BLCAC’s suggestion on spill response training during face-to-face engagements. Woodside responded in the meeting that it may be able to assist BLCAC in a local spill response/ranger training program and that this will form ongoing consultation with BLCAC, as described in Section 9.7 of the EP. No further information was requested on the topic.</p> <p>(3) Woodside supports BLCAC’s proposal that a workshop may be an appropriate mechanism to provide community members the opportunity to give feedback on Woodside’s activities. Woodside accepts that BLCAC will schedule the workshop at a date that is suitable to BLCAC. Woodside has advised BLCAC that this workshop will be treated as ongoing consultation.</p> <p>(4) Woodside accepted BLCAC’s feedback regarding the cultural importance of eels and seagrass.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1, 2) No action required.</p> <p>(3) The future planned workshop will form part of Ongoing Consultation, as outlined in Section 5.7 of the EP. Information received as a result of the workshop will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p> <p>(4) Woodside has captured BLCAC’s feedback regarding eels and seagrass in Section 4.6.1.5. Woodside has assessed potential impacts to these in Sections 7 & 8.</p>
<p>Eastern Maar Aboriginal Corporation (EMAC)</p>		
<p>EMAC is established under the Native Title Act 1993 by the Eastern Maar people to represent the Eastern Maar people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with EMAC for the purposes of 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <p>Sufficient Information:</p>		

- Woodside sought direction on EMAC's preferred method of consultation. This resulted in a face-to-face meeting with EMAC nominated representatives. This meeting included Woodside presenting information in a format and style that was readily accessible and appropriate.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to EMAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls to manage potential impacts to ALARP and acceptable levels.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Provided response to questions asked about the activity through consultation. Through these questions, EMAC have displayed an understanding of the activities under this EP.
- Woodside has provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing and environment plan".
- Advised that EMAC can request that particular information provided in the consultation not be published (to align with 25(4)).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Woodside commenced consultation with EMAC in May 2023, demonstrating a "reasonable period" of consultation.

Woodside asked EMAC if it was aware of any other Traditional Custodians groups or individuals with whom Woodside should consult. None were identified.

Woodside has provided a reasonable opportunity for input since May 2023, and a genuine two-way dialogue has occurred via a meeting and written exchanges to further understand the environment in which the activity will take place. EMAC has engaged in the detail of the activity asked related questions. The details of these engagement are described in the consultation summary below.

Woodside engaged on ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revisions process (see Section 9.8 of the EP).

Woodside considered that measures and controls described in the EP address the potential impact from the proposed activity on EMAC's functions, interests or activities.

Summary of information provided and record of consultation:

- **(1)** On 19 May 2023, Woodside emailed EMAC advising of the proposed activity (Record of Consultation, reference 1.40) and provided a Consultation Information Sheet.
- **(2)** On 7 June 2023, Woodside emailed EMAC following up on the proposed activity and requesting feedback.
- On 7 July 2023, Woodside phones EMAC but there was no answer. Woodside left a message that informed EMAC that the purpose of the call was to discuss consultation and the activity. Woodside asked EMAC to return their call.
- On 7 July 2023, Woodside emailed EMAC following up on the proposed activity and provided a Consultation Information Sheet.
- On 13 July 2023, Woodside emailed EMAC following up on the proposed activity and proposing a virtual meeting.
- On 20 July 2023, Woodside emailed EMAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that EMAC advised Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.

- On 24 July 2023, Woodside called EMAC and discussed the Minerva Field Decommissioning EP. EMAC advised the requirement for consultation would be discussed internally and EMAC would response to Woodsides request for feedback. No response has been received.
- On 10 August 2023, Woodside emailed EMAC following up and requesting availability for a virtual meeting.
- On 28 August 2023, Woodside emailed EMAC following up and requesting availability for a virtual meeting.
- On 7 September 2023, Woodside emailed EMAC with a proposal to support a Sea Country ethnographic assessment with EMAC including funding for an anthropologist and EMAC's associated costs.
- On 30 October 2023, Woodside emailed EMAC following up on the Sea Country ethnographic assessment proposal.
- On 30 October 2023, Woodside emailed EMAC following up on the Sea Country ethnographic and re-confirming Woodsides offer to pay costs.
- On 6 November 2023, Woodside emailed EMAC outlining the intention of the Sea Country mapping proposal as a mechanism for EMAC to advise Woodside on how activities might impact EMAC rights and interests.
- On 9 January 2024, Woodside emailed an alternative contact at EMAC with the proposal to support a Sea Country ethnographic assessment with EMAC (previously sent to EMAC on 7 September). No response has been received.
- On 8 February 2024 EMAC and Woodside exchanged text messages regarding a potential meeting on 15 February.
- On 13 February 2024 Woodside emailed EMAC confirming meeting on 15 February and providing information pack.
- On 13 February 2024 EMAC emailed Woodside about sending a calendar invite.
- On 13 February Woodside emailed EMAC acknowledging the previous email.
- On 14 February EMAC sent Woodside an invite to its Board Meeting on 15 February 2024.
- On 15 February 2024, Woodside met with EMAC. At the meeting Woodside:
 - Described the proposed activities for this EP including the role of decommissioning in the project lifecycle, and an overview of the facilities and types of vessels used
 - Explained the General Direction 831 given by NOPSEMA to have the Minerva P&A activities and subsea removal completed by 30 June 2025
 - Outlined the project schedule and interactions with Blue whales and Southern Wright whales, outlined the whale protection mitigation plan and noise controls in place
 - Displayed and spoke to the EMBA for the proposed activity
 - Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks were not expected to occur and were unlikely
 - Described approach to cultural heritage and Sea Country
 - Woodside specifically asked the following questions:
 - How could these activities impact your cultural values, interests, and activities – does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - Advised that Woodside would continue to take feedback from EMAC for the life of the EP

- Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should EMAC wish to provide feedback directly to the Regulator
 - Asked if EMAC have any questions or feedback.
- At the 15 February 2024 meeting EMAC provided the following feedback:
- EMAC sought to understand the process relating to monitoring for leaks.
 - **(1)** Expressed interest in noise impacts on whales and eels and requested information on noise modelling.
 - **(2)** Asked whether Woodside would fund an independent assessment of the project.
 - Stated that EMAC were not asked for approval prior to the installation of this project, and didn't receive any benefit from the project and extraction of the resource.
 - **(3)** Asked whether Woodside has an incident management team and if EMAC can be part of this.
 - Stated that timeframes being set by NOPSEMA are challenging and do not provide sufficient time to consult with members and families.
- On 21 February 2024 Woodside emailed EMAC thanking EMAC for making time to meet, and reminding the corporation that it can make comments through NOPSEMA or request further consultation with Woodside.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Expressed interest in noise impacts on whales and eels and requested information on noise modelling.</p> <p>(2) Requested funding to undertake an independent assessment of the project.</p> <p>(3) Asked whether Woodside has an incident management team and if EMAC can be part of this.</p>	<p>(1) Woodside notes EMAC's interests in whales and eels and the impacts of noise. Provided information on noise level monitoring, mitigation measures including rig positioning to reduce impact, and training and qualifications of marine mammal observers. No further information on these topics was requested.</p> <p>(2) Woodside advised that funding is available to support an independent assessment.</p> <p>(3) Advised that incident management team includes AMOSC and Department of Transport. Spill response plan includes notifying Traditional Owners.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Woodside updated Section 4.6.1.5 to reflect EMAC's interests in culturally significant species and locations, and assessed potential impacts on these, including controls in Sections 7 and 8.</p> <p>(2) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to engage with EMAC as part of ongoing consultation (Section 5.7 of the EP).</p> <p>(3) The Oil Pollution Emergency Plan in Appendix E includes notifying stakeholders who may be impacted by a hydrocarbon release.</p>

Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC)

GMTOAC is established under the Native Title Act 1993 by the Gunditjmarra people to represent the Gunditjmarra people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with GMTOAC for the purposes of 25(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information:

- Woodside sought direction on GMTOAC's preferred method of consultation. This resulted in a virtual meeting with GMTOAC nominated representatives. This meeting included Woodside presenting information in a format and style that was readily accessible and appropriate.
- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to GMTOAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.
- Articulated planned and unplanned environmental risks and impacts, with proposed controls to manage potential impacts to ALARP and acceptable levels.
- Confirmed the purpose of consultation and set out in detail what was being sought through consultation.
- Asked for the consultation and information sheets to be distributed to members and individuals.
- Woodside has provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing and environment plan".
- Provided response to questions asked about the activity through consultation. Through these questions, GMTOAC have displayed an understanding of the activities under this EP.
- Advised that GMTOAC can request that particular information provided in the consultation not be published (to align with 25(4)).

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Woodside commenced consultation with GMTOAC in May 2023. Woodside has addressed and responses to GMTOAC's queries over 9 months, demonstrating a "reasonable period" of consultation.

Woodside asked GMTOAC if it was aware of any other Traditional Custodians groups or individuals with whom Woodside should consult. None were identified.

Woodside has provided a reasonable opportunity for input since May 2023, and a genuine two-way dialogue has occurred via a meeting and written exchanges to further understand the environment in which the activity will take place. GMTOAC has engaged in the detail of the activity asked related questions. The details of these engagements are described in the consultation summary below.

Woodside engages in ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revisions process (see Section 9.8 of the EP).

Woodside considers that measures and controls described in the EP address the potential impact from the proposed activity on GMTOAC's functions, interests or activities.

Woodside does not agree with GMTOAC's assertion that consultation has not yet commenced in relation to this activity. Woodside has provided information and engaged in discussion about the proposed activity via email and during meetings over 9 months, demonstrating a reasonable period. Woodside has assessed the claims and feedback raised by GMTOAC, as detailed later in this section alongside Woodside's response to the claims.

Summary of information provided and record of consultation:

- On 19 May 2023, Woodside emailed GMTOAC advising of the proposed activity (Record of Consultation, reference 1.41) and provided a Consultation Information Sheet.
- On 7 June 2023, GMTOAC emailed Woodside expressing interest in consultation and requesting a virtual meeting on 21 June 2023.
- On 7 June 2023, Woodside emailed GMTOAC confirming availability on 21 June 2023 and requesting feedback on the most appropriate form of consultation.
- On 13 June 2023, GMTOAC emailed Woodside with a meeting invitation and confirming information required during the consultation.

- On 19 June 2023, Woodside emailed GMTOAC requesting the meeting be held on 23 June 2023.
- On 21 June 2023, GMTOAC emailed Woodside requesting the meeting be rescheduled to the following week.
- On 21 June 2023, Woodside emailed GMTOAC proposing a time on 29 June 2023.
- On 23 June, Woodside accepted a GMTOAC online meeting request for 29 June 2023.
- On 29 June 2023, Woodside met with GMTOAC. At the meeting Woodside:
 - Described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general content of EPs
 - Displayed a map of activities open for feedback to be discussed in the meeting
 - Described the proposed activities for this EP including types of vessels involved and decommissioning activities
 - Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks were not expected to occur and were unlikely
 - Displayed and spoke to the EMBA for the proposed activity
 - Described an oil spill response approach and the use of key response techniques should this unexpected event occur
 - Woodside specifically asked the following questions:
 - How could these activities impact your cultural values, interests, and activities – does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - Advised that Woodside would continue to take feedback from GMTOAC for the life of the EP
 - Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should GMTOAC wish to provide feedback directly to the Regulator
 - Asked if GMTOAC have any questions or feedback. GMTOAC said that they had no questions or feedback at the present. GMTOAC representatives stated that they will speak to the CEO for guidance on future steps and informed that they had a few requests from other companies that they have to manage.
- On 3 July 2023, Woodside emailed GMTOAC following up from the meeting held on 29 June to share presentation materials and requested feedback on next steps.
- On 18 July 2023, Woodside emailed GMTOAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that GMTOAC advised Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 10 August 2023, Woodside emailed GMTOAC following up on the proposed activity and requesting feedback.
- On 28 August 2023, Woodside emailed GMTOAC requesting availability to discuss the proposed activity.
- On 1 September 2023, GMTOAC emailed Woodside advising they have no outstanding questions and requesting an update on the progress of the EPs.
- On 1 September 2023, Woodside emailed GMTOAC advising the status of the EPs and planned submission dates.
- On 30 October 2023, Woodside emailed GMTOAC following up on the proposed activity and requesting feedback.
- On 30 October 2023, GMTOAC emailed Woodside an out-of-office reply, with alternative contact details.
- On 30 October 2023, Woodside emailed GMTOAC via the alternative contact following up on the proposed activity and requesting feedback.

- On 7 December 2023, GMTOAC emailed Woodside advising of a joint Industry community consultation day to be held on 17 February 2024 and inviting Woodside to book a timeslot.
- On 8 December 2023, Woodside emailed GMTOAC confirming their interest to attend the consultation on 17 February 2024.
- On 10 January 2024, Woodside phoned GMTOAC to introduce the new Woodside focal point. Phone reception was poor and a follow-up email was sent.
- On 10 January 2024, Woodside emailed GMTOAC with a follow up to the phone conversation, introducing the new Woodside focal contact and requesting a meeting, including payment for any sitting fees.
- On 11 January 2024, GMTOAC emailed Woodside thanking them for reaching out and proposing a slot to speak at the community event on 17 February 2023.
- On 11 January 2024, Woodside emailed GMTOAC confirming interest in the event and informing GMTOAC that they will begin booking travel and accommodation.
- On 17 January 2024, Woodside emailed GMTOAC confirming attendees for the upcoming community event.
- On 17 January 2024, GMTOAC emailed Woodside thanking them for sending through meeting attendees.
- On 22 January 2024, Woodside emailed GMTOAC providing an update on planned activities and associated environmental management measures, and a revised Consultation Information Sheet. The email requested feedback in relation to the revised activities and potential impacts on cultural values.
- On 2 February 2024, Woodside phoned GMTOAC confirming Woodsides attendance at the 17 February 2024 consultation and requesting meeting details.
- On 8 February 2024, Woodside emailed GMTOAC requesting a cost estimate for the meeting on the 17 February 2024.
- On 14 February 2024, GMTOAC emailed Woodside a letter outlining the following:
 - **(1)** Activities related to this EP are proposed to take place in waters that comprise Sea Country of the Gunditjmara people that includes significant breeding grounds and habitats for cultural significant species that hold intangible heritage and submerged tangible heritage including:
 - Deen Mar Island which holds spiritual significance.
 - Kooyang (short finned eel) which are central to the functioning of the Budi Bim World Heritage Area.
 - Karntubul (whales) which hold spiritual significance.
 - The Bonney Upwelling feeding ground for cultural significant species.
 - **(2)** GMTOAC considers that interactions to date do not constitute consultation and that GMTOAC expect that each member expects to receive sufficient information and reasonable time to allow them to make an informed assessment of the possible consequences of Woodsides activities on their functions, interests and activities
 - **(2)** GMTOAC considers the meeting scheduled for 17 February to be an information session only to understand how GMTOAC members would like to be consulted, and not to constitute consultation on this EP.
- On 15 February 2024, Woodside emailed GMTOAC thanking them for the letter, the upcoming opportunity to present to GMTOAC members and the advice on the cultural significance of waters in the locality of the proposed activity.
- On 17 February 2024, Woodside met with GMTOAC. During the meeting Woodside:
 - Described the proposed activities for this EP including the role of decommissioning in the project lifecycle, and an overview of the facilities and types of vessels used
 - Explained the General Direction 831 given by NOPSEMA to have the Minerva P&A activities and subsea removal completed by 30 June 2025
 - Outlined the project schedule and interactions with Blue whales and Southern Wright whales, outlined the whale protection mitigation plan and noise controls in place
 - Displayed and spoke to the EMBA for the proposed activity

- Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks were not expected to occur and were unlikely
- Described approach to cultural heritage and Sea Country
- Woodside asked the following questions:
 - How could these activities impact your cultural values, interests, and activities?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
- Advised that Woodside would continue to take feedback from GMTOAC for the life of the EP
- Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should GMTOAC wish to provide feedback directly to the Regulator
- Asked if GMTOAC have any questions or feedback.
- At the 17 February 2024 meeting GMTOAC provided the following feedback:
 - Asked questions relating to whether gas shortages and whether there's any gas remaining in the field/wells and whether seismic is associated with this activity
 - Asked about hours of operation, use of concrete and steel plates in decommissioning activities, pipeline length and weight and vessel type
 - **(7)** Asked if Woodside had considered eco-friendly alternatives to concrete as a well barrier.
 - Asked about environmental mitigations including the use of spotter planes as whale mitigation controls, and oil response planning
 - **(1)** Stated that eels migrate into areas in the project locality and emphasised the cultural significance of eels to the Gunditjmara people
 - Asked about the resource extraction and financial benefit from the project, employment opportunities and indigenous employment
 - **(5)** Asked about the purpose and location of the activity, any trauma to the seabed
 - **(6)** Asked about social benefits in relation to sea country
 - **(3)** Asked about whether the EP addresses cumulative impact of activities
 - **(4)** Provided feedback that it is good that Woodside are considering that impact on eels and are adhering to the principles of Free, Prior and Informed Consent
- On 22 February 2024, Woodside received from NOPSEMA a copy of a letter from GMTOAC to NOPSEMA, dated 5 February 2024, the subject of which made reference to multiple Titleholders and Environment Plans, which included "Minerva Plug and Abandonment and Field Maintenance – Woodside Energy". The letter referred to Annexures, which were not provided to Woodside. The letter included the following information:
 - **(1)** The EPs propose activity in the Otway Basin in waters that comprise Sea Country of the Gunditjmara people. These waters are significant breeding grounds and habitats for culturally significant species to the Gunditjmara people and also hold intangible heritage as well as submerged tangible heritage for our community. Notably:
 - Deen Mar Island (also known as Lady Julia Percy Island) and its surrounds hold deep spiritual significance to Gunditjmara people;
 - Kooyang (short-finned eel) migrate out of the Budj Bim World Heritage Area in Gunditjmara Country through the Otway Basin, up to the Coral Sea. Kooyang hold an incredibly important place in the culture of Gunditjmara people and are central to the functioning of the Budj Bim World Heritage Area – one of the oldest aquaculture systems in the world;
 - Karntubul (whales) found in Gunditjmara Sea Country hold deep cultural significance to our people, featuring in Dreaming stories, ceremony, song and dance traditions of the Gunditjmara;

- The Bonney Upwelling is a dominant ecological feature of Gunditjmara Sea Country, creating vital feeding grounds for culturally significant species. It is extremely important for marine and coastal ecosystems within Gunditjmara Sea Country.
- **(8)** On the basis of these cultural ties to, and responsibility for, the Sea Country and marine wildlife potentially impacted by the activities proposed in the abovenamed EPs, GMTOAC as a representative body is a 'relevant person' with 'functions, interests or activities' within the meaning of s 25(1)(d) of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023* ('the Regulations'). Further, each Traditional Owner who is a member of GMTOAC is also a 'relevant person' with interests in the areas subject to the abovenamed EPs, within the meaning of s 25(1)(d) of the Regulations.
- **(8)** GMTOAC understands that based on correspondence between Woodside Energy and GMTOAC, that Woodside Energy explicitly considers GMTOAC and all individual members of GMTOAC to be 'relevant persons'.
- **(9) (15)** GMTOAC operates on a full-participation model of representation, whereby all members are given notice of, and the opportunity to participate in, decision-making – including consultation with project proponents – that could affect their interests as Gunditjmara people.
- **(15)** As such, and given the status of each GMTOAC member as a 'relevant person' for the Minerva EPs, consultation undertaken by the proponent of the Minerva EPs must enable proper notice to, and participation by, all GMTOAC members; corresponding or meeting with GMTOAC program staff alone is clearly insufficient to meet the proponents' obligation to consult with all relevant persons.
- **(10) (11)** Further, GMTOAC is concerned that it, as a representative body, has also not received sufficient information or been provided with adequate time to participate in consultation with Woodside. This is particularly so in circumstances where multiple proponents have not sought to coordinate or stagger consultation to ensure adequate opportunity for consultation.
- **(12)** GMTOAC has advised Woodside of the inadequacy of consultation – during a meeting with Woodside Energy held on 29 June 2023, GMTOAC staff advised that a presentation to GMTOAC staff did not constitute consultation with GMTOAC or its members.
- **(10) (15)** However, to date, Woodside has not provided any opportunity for GMTOAC members to be consulted directly. None of the proponents have (as yet) given GMTOAC members a 'reasonable opportunity' to receive necessary information or participate in consultation about the proposed activities.
- **(2)** Accordingly, we wish to advise NOPSEMA that Gunditjmara people with interests that may be affected by the activities covered by the Minerva EPs have not been consulted in relation to the EPs. In these circumstances, the proponent has not (as yet) complied with the Regulations.

The letter includes "Proposed next steps":

- Multiple companies have contacted GMTOAC over the past 14 months, seeking GMTOAC's participation in, and administration of, consultation processes required under the regulatory regime for various projects located in, or otherwise affecting, Gunditjmara Sea Country in the Otway Basin. This includes the activities proposed in the Minerva EPs.
- **(10) (11) (13) (14)** This has placed significant strain on GMTOAC's resources and capacity to fulfil its responsibilities to its membership in relation to each set of proposed activities. GMTOAC views robust consultation as critical for participation by its members and consider the strain to be a result of failure by proponents to coordinate or stagger consultation to ensure that consultation participants have adequate time to consider all relevant risks and impacts of proposals. Whilst proponents have indicated timelines and urgency in relation to consultation processes, it is not clear to GMTOAC why such urgent or unrealistic timeframes are being imposed.
- **(11)** The waters and species contained therein that stand to be affected by each of these projects hold great significance for GMTOAC and its members. It is critical that Gunditjmara people, who are likely to be affected by each of these projects, have a reasonable period to understand the proposed activities, identify precisely how their interests may be affected, and formulate their responses.
- **(2)** In order to provide an initial opportunity for GMTOAC and its members to obtain preliminary information about each of the projects, GMTOAC has proposed a community meeting for 17 February 2024. Woodside Energy has been invited to present their proposed activities to our members on that date. GMTOAC wishes to stress that this community meeting is not intended to (and will not) comprise the consultation required under the Regulations, but it will enable community members to decide if and how they wish to be consulted about each of the proposals and to enter into dialogue with relevant proponents about the next steps in the consultation process.

<ul style="list-style-type: none"> ○ (2) As discussed above, proper consultation with GMTOAC and its members has not occurred in the course of the preparation of the abovenamed EPs and as such, NOPSEMA must not accept these EPs until proper consultation has taken place. This is to ensure that the proponents take into account the interests and concerns of GMTOAC and our members and reflect those matters, including relevant mitigation measures, in the EP before it is submitted to NOPSEMA. ● On 26 February 2024, Woodside emailed GMTOAC thanking them for the opportunity to present on 17 February, requesting a copy of any video recording of the session, and providing answers to questions taken on notice, namely: <ul style="list-style-type: none"> ○ Regarding eco-friendly alternative to concrete as a well barrier - Cement is the most reliable and effective material for construction of downhole barriers for the Minerva P&A. Cement is non-corrosive and resistant to chemical degradation, making it a reliable choice for permanent well abandonment. Alternative materials may not be as strong or durable as cement, and can result in a less effective long-term barrier. ○ Regarding social benefits during the construction/operation phase of Minerva - That Woodside acquired the assets in 2022 as part of the merger with BHP Petroleum. Woodside understands some benefits were provided through the Indigenous Land Use Agreement associated with the project, but the previous owner BHP would be the appropriate entity to contact regarding this. ○ Regarding cumulative impacts – Cumulative impacts are considered and assessed throughout the EP. Cumulative impacts for noise, light and the presence of vessels are considered in the EP. Like direct impacts, the impacts and risks associated with cumulative environmental impacts must be assessed as being as low as reasonably practicable (ALARP) and an acceptable level in the EP. ● On 13 March 2024, Woodside sent an email and a letter responding to GMTOAC’s letters of 5 February 2024 (to NOPSEMA) and 14 February 2024. Woodside: <ul style="list-style-type: none"> ○ Summarised the cultural values information received from GMTOAC, and how those cultural values relate to and will be managed in the Minerva EPs. ○ Advised that Woodside disagrees with GMTOAC’s assertion that consultation has not commenced, and provided a chronology summarising consultation activities that have taken place since 19 May 2023 and advised that consultation is complete for these EPs. ○ Advised that Woodside disagrees with GMTOAC’s assertion that GMTOAC has not been provided with sufficient information or reasonable time for GMTOAC, GMTOAC representatives or GMTOAC members to make an informed assessment of the possible consequences of the activities on their functions, interests or activities. ○ Advised that feedback can continue to be taken for the life of an EP. ○ Confirmed that Woodside has sought direction from GMTOAC about the manner of consultation most appropriate from GMTOAC, and whether there are other groups or individuals with whom Woodside should consult. ○ Requested a copy of any video recording of the 17 February 2024 meeting. ○ The letter included Attachment 1, detailing Gunditjmara Sea Country Values and corresponding environmental management approaches for the Minerva EPs; and Attachment 2, a chronological summary of correspondence between Woodside and GMTOAC. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) GMTOAC has stated cultural activities related to this EP are proposed to take place in waters that comprise Sea Country of the Gunditjmara people that includes significant breeding grounds and habitats for cultural significant species including the short finned eel and whales, and locations that hold intangible heritage and submerged</p>	<p>(1) Woodside notes GMTOAC’s interest in culturally significant species and locations. Woodside has provided a response to GMTOAC on 13 March 2024 regarding how Woodside will capture the information received from GMTOAC in the Environment Plan.</p> <p>(2) Woodside does not agree with GMTOAC’s assertion that consultation has not commenced. Woodside commenced consultation in May 2023 and had a meeting with GMTOAC representatives on 8 December during which GMTOAC</p>	<p>(1) Woodside updated Section 4.6.1.5 to reflect EMAC’s interests in culturally significant species and locations, and assessed potential impacts on these, including controls in Sections 7 and 8.</p> <p>(2) Although consultation for the purpose of regulation 25 of the Environment Regulations is complete, Woodside will continue to</p>

<p>tangible heritage including Deen Mar Island and the Bonney Upwelling.</p> <p>(2) GMTOAC have advised Woodside that they do not consider that consultation on the proposed activity has commenced, and in-person consultation occurring on 17 February is an information session only during which GMTOAC members will provide advice on how they wish to be consulted.</p> <p>(3) GMTOAC asked about whether cumulative impact is assessed in EP's.</p> <p>(4) GMTOAC provided feedback that it is good that Woodside are considering that impact on eels and are adhering to the principles of Free, Prior and Informed Consent.</p> <p>(5) GMTOAC asked about the purpose and location of the activity and any trauma to the seabed.</p> <p>(6) GMTOAC asked about any social benefits in relation to the activity.</p> <p>(7) GMTOAC asked if Woodside had considered eco-friendly alternatives to cement as a well barrier.</p> <p>(8) GMTOAC considers that GMTOAC and its members and Traditional Owners are all "relevant persons" under the Environment Regulations.</p> <p>(9) GMTOAC operates on a "full participation" model of decision making, where all members are given the opportunity to participate in decision making, including consultation, that could affect their interests as Guditjmarra people.</p> <p>(10) GMTOAC advised that it is concerned that GMTOAC as a representative body and its members have not been provided with sufficient information & reasonable time to participate in consultation with Woodside.</p> <p>(11) Multiple proponents (including Woodside) have not sought to coordinate or stagger</p>	<p>representatives advised they had no questions or feedback. Woodside has provided a response to GMTOAC on 13 March 2024 regarding GMTOAC's assertion that consultation has not commenced.</p> <p>(3) Woodside addressed cumulative impacts in its response to GMTOAC on 26 February 2024. Woodside advised that this question has been raised in other projects and that Woodside are collaborating with other titleholders where possible.</p> <p>(4) Woodside acknowledge and accept this feedback.</p> <p>(5) Woodside advised GMTOAC that the purpose of the activity was to remove existing infrastructure, provided maps showing the location of the activity, and described the activities in relation to seabed disturbance.</p> <p>(6) Woodside took GMTOAC's question regarding social benefits on notice, and responded on 26 February 2024 that social benefits may have been provided by the previous titleholder and that titleholder should be contacted if more information is required.</p> <p>(7) Woodside took GMTOAC's question regarding eco-friendly cement alternatives on notice, and responded on 26 February 2024 that cement is the most reliable and effective material for construction of downhole barriers.</p> <p>(8) Woodside accepts GMTOAC's assertion that GMTOAC and its members and Traditional Owners are relevant persons under the Environment Regulations. Section 5.3 and Section 5.5.2.1 of the EP describe Woodside's methodology for identifying relevant persons, and providing relevant persons with reasonable time and sufficient information to make an informed assessment of the possible consequences of the activities described in this EP on their functions, interests or activities. Woodside identified GMTOAC and its members and Traditional Owners as relevant persons, as described in Appendix F, Table 1.</p> <p>(9) Woodside accepts GMTOAC's advice that GMTOAC operates on a "full participation" model of decision making. Woodside responded to GMTOAC that it was grateful that GMTOAC advertised the 17 February 2024 meeting on the GMTOAC Facebook page, allowing broad reach to members of GMTOAC and the Guditjmarra Traditional Owners.</p> <p>(10) Woodside rejects GMTOAC's assertion that GMTOAC and its members have not been provided sufficient information and</p>	<p>engage with GMTOAC as part of ongoing consultation (Section 5.7 of the EP).</p> <p>(3) Woodside has included assessment of cumulative impacts from activities in Section 7 of the WP.</p> <p>(4) No action required.</p> <p>(5) No action required.</p> <p>(6) No action required.</p> <p>(7) No action required.</p> <p>(8) Woodside's methodology for identification of relevant persons is addressed in Section 5.3 and Section 5.5.2.1 of the EP. Woodside's methodology for consultation with First Nations relevant persons is addressed in Section 5.5.2 of the EP.</p> <p>(9) No action required.</p> <p>(10) No action required.</p> <p>(11) No action required.</p> <p>(12) No action required.</p> <p>(13) No action required.</p> <p>(14) Woodside's methodology with regards to providing reasonable time for consultation is outlined in Section 5.4.2 and 5.5.2.4. Woodside has provided GMTOAC with reasonable time to participate in consultation as outlined in this Appendix F, Table 2.</p> <p>(15) Woodside's consultation approach with First Nations relevant persons is set out in Section 5.5. Woodside's methodology for identification of relevant persons is set out in Section 5.5.2.1. Woodside has sought GMTOAC's direction with regards to how GMTOAC wishes to participate in consultation as outlined in this Appendix F, Table 2.</p> <p>(16) Woodside's methodology with regards to providing reasonable time for consultation is outlined in Section 5.4.2 and Section 5.5.2.4. Woodside's methodology with regards to</p>
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<p>consultation, to ensure adequate opportunity for consultation.</p> <p>(12) GMTOAC advised that at a meeting with Woodside on 29 June 2023, GMTOAC staff advised that a presentation to GMTOAC staff did not constitute consultation with GMTOAC or its members.</p> <p>(13) Consultation requests from Woodside and other proponents have placed strain on GMTOAC's resources and capacity.</p> <p>(14) GMTOAC considers that Woodside and other proponents have imposed urgent or unrealistic timeframes.</p> <p>(15) GMTOAC considers that consultation should include proper notice to, and participation by, all GMTOAC members; and that consultation with GMTOAC staff alone is insufficient to meet a titleholder's obligations under the Environment Regulations. GMTOAC considers that Woodside has not provided any opportunity for GMTOAC members to be consulted directly.</p> <p>(16) Proper consultation with GMTOAC and its members in the course of preparing an Environment plan has not taken place.</p>	<p>reasonable time to participate in consultation. Woodside has been consulting with GMTOAC for almost 9 months, since 19 May 2023. Woodside has made multiple offers to consult, sought direction on GMTOAC's preferred manner of consultation and who should be consulted, and met with and presented to GMTOAC's representatives on 29 June 2023, and met with and presented to GMTOAC's representatives and members on 17 February 2024.</p> <p>(11) Woodside notes GMTOAC's assertion that Woodside has not sought to coordinate or stagger consultation with other proponents (/titleholders). Woodside is not obliged to coordinate or stagger consultation with proponents of other activities, nor other titleholders. Woodside has sought GMTOAC's advice on how and when GMTOAC would like to be consulted, on multiple occasions, and offered to provide resourcing to support consultation with Woodside, including by email on 18 July 2023, and confirming by email on 17 January 2024 that Woodside would pay meeting fees. Woodside attended the GMTOAC meeting on 17 February 2024, at GMTOAC's request.</p> <p>(12) Woodside rejects GMTOAC's assertion that at the meeting on 29 June 2023, GMTOAC staff advised Woodside that a presentation to GMTOAC staff did not constitute consultation with GMTOAC or its members. Woodside's recollection of the meeting is that GMTOAC staff stated in the meeting that they would need to speak with the CEO.</p> <p>(13) Woodside accepts GMTOAC's assertion that consultation requests from Woodside and other proponents (/titleholders) have placed strain on GMTOAC's resources and capacity. Woodside has made multiple offers to support GMTOAC in participation in consultation, including by email on 18 July 2023, and advising that Woodside would pay meeting fees, in email on 17 January 2024. Over a period of almost 9 months, Woodside has sought guidance from GMTOAC on when and how GMTOAC would like to be consulted.</p> <p>(14) Woodside rejects GMTOAC's feedback that Woodside has imposed urgent or unrealistic timeframes. Woodside has provided reasonable time for GMTOAC to participate in consultation. Woodside has sought feedback from GMTOAC over almost 9 months. Woodside has provided updates to GMTOAC on Environment Plan submission dates when requested, for example by email on 1 September 2023. At the</p>	<p>providing sufficient information for consultation is outlined in Section 5.4.1 and Section 5.5.2.3. Woodside has provided GMTOAC and its members with reasonable time and sufficient information to participate in consultation in the course of preparing an Environment Plan as outlined in this Appendix F, Table 2.</p>
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	<p>17 February 2024 meeting, Woodside advised on the latest plans for the activities in this EP, and relevant factors affecting timelines including explaining the General Direction 831 given by NOPSEMA to have the Minerva P&A activities and subsea removal completed by 30 June 2025.</p> <p>(15) Woodside rejects GMTOAC’s assertion that Woodside has not provided an opportunity for GMTOAC members to be consulted directly. In accordance with the United Nations Declaration of the Rights of Indigenous Peoples, and contrary to GMTOAC’s assertion, consultation is to take place through the Indigenous peoples’ chosen representative entity. Woodside will not, therefore, seek to circumvent GMTOAC processes. As noted above in the summary of consultation, since commencing consultation on 19 May 2023, Woodside has sought direction from GMTOAC about the manner of consultation most appropriate for GMTOAC and whether there are other groups or individuals that need to be consulted. This provided an opportunity for GMTOAC members to be consulted directly – an opportunity of almost 9 months. Woodside’s consultation approach with First Nations relevant persons is set out in Section 5.5 of the EP.</p> <p>(16) Woodside rejects GMTOAC’s assertion that proper consultation with GMTOAC and its members in the course of preparing an Environment Plan has not taken place. Woodside has provided a reasonable time for consultation, over a period of almost 9 months since 19 May 2023. Woodside has provided sufficient information for consultation, including through information sheets, video conferences and presentation materials, and face-to-face participation in a meeting organised by GMTOAC. Woodside has sought GMTOAC’s guidance on how and when GMTOAC wish to be consulted. Woodside has captured GMTOAC’s feedback when preparing the Environment Plan, as noted in this table in “Inclusion in Environment Plan.” Woodside has also provided a chronology of consultation and correspondence to GMTOAC, confirming that Woodside has provided sufficient information and reasonable time for GMTOAC and its members to make an informed assessment of the possible consequences of the activities in this Environment Plan on their functions, interests or activities.</p> <p>Separate from consultation under regulation 25 of the Environment Regulations, Woodside supports ongoing</p>	
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	<p>engagement with GMTOAC (Section 9.7). As outlined in the consultation summary above, sufficient information and a reasonable period have been provided to demonstrate that consultation for the purpose of regulation 25 of the Environment Regulations is complete. Any further engagement with, and support offered to, GMTOAC will be for the purpose of ongoing engagement.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	
<p>Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC) WTOAC is a Registered Aboriginal Party (RAP) recognised as per the Aboriginal Heritage Act 2006 (Vic.), whose function is to protect and manage the Aboriginal cultural heritage of the Wadawurrung Traditional Owners in the state of Victoria in Australia.</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with WTOAC for the purposes of 25(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <p>Sufficient Information:</p> <ul style="list-style-type: none"> • Woodside sought direction on WTOAC’s preferred method of consultation. This resulted in a virtual meeting and a face-to-face meeting with WTOAC nominated representatives. This meeting included Woodside presenting information in a format and style that was readily accessible and appropriate. • Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to WTOAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format. • Articulated planned and unplanned environmental risks and impacts, with proposed controls to manage potential impacts to ALARP and acceptable levels. • Confirmed the purpose of consultation and set out in detail what was being sought through consultation. • Asked for the consultation and information sheets to be distributed to members and individuals. • Woodside has provided NOPSEMA’s Brochure “Consultation on offshore petroleum environment plans” and Guideline “Guideline: Consultation in the course of preparing and environment plan”. • Provided response to questions asked about the activity through consultation. Through these questions, WTOAC have displayed an understanding of the activities under this EP. • Advised that WTOAC can request that particular information provided in the consultation not be published (to align with 25(4)). <p>Reasonable Period:</p> <ul style="list-style-type: none"> • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Woodside commenced consultation with WTOAC in May 2023. Woodside has addressed and responded to WTOAC’s queries over 9 months, demonstrating a “reasonable period” of consultation. 		

Woodside asked WTOAC if it was aware of any other Traditional Custodians groups or individuals with whom Woodside should consult. WTOAC identified Eastern Maar as the Traditional Owners of the locality in which the proposed activity will take place.

Woodside has provided a reasonable opportunity for input since May 2023, and a genuine two-way dialogue has occurred via a meeting and written exchanges to further understand the environment in which the activity will take place. WTOAC has engaged in the detail of the activity asked related questions. The details of these engagement are described in the consultation summary below.

Woodside engaged on ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revisions process (see Section 9.8 of the EP).

Woodside considered that measures and controls described in the EP address the potential impact from the proposed activity on WTOAC's functions, interests or activities.

Summary of information provided and record of consultation:

- On 19 May 2023, Woodside emailed WTOAC advising of the proposed activity (Record of Consultation, reference 1.42) and provided a Consultation Information Sheet.
- On 6 June 2023, WTOAC emailed Woodside requesting information on how much of Wadawurrung Country is impacted by proposed activities.
- On 10 June 2023, Woodside emailed WTOAC with information about the EMBA and its intersection with Wadawurrung Country.
- On 4 July 2023, Woodside emailed WTOAC following up on the proposed activity and requesting feedback.
- On 5 July 2023, WTOAC emailed Woodside requesting a meeting to discuss the proposed activities and proposing times in July 2023.
- On 7 July 2023, Woodside emailed WTOAC proposing a meeting on 13 July 2023.
- On 7 July 2023, WTOAC emailed Woodside confirming a time on 13 July 2023.
- On 7 July 2023, Woodside emailed WTOAC confirming the proposed time on 13 July 2023.
- On 7 July 2023, Woodside accepted a WTOAC online meeting invite for 13 July 2023.
- **(1)** On 13 July 2023, Woodside met with WTOAC. At the meeting Woodside:
 - Described the EP framework, referring to the Offshore Petroleum and Greenhouse Gas Storage Act (Environment) Regulations, NOPSEMA's role as regulator and general contents of EPs;
 - Displayed a map of activities open for feedback to be discussed in the meeting;
 - Described the proposed activities for this EP including types of vessels involved and decommissioning activities;
 - Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks were not expected to occur and were unlikely;
 - Displayed and spoke to the EMBA for the proposed activity;
 - Described an oil spill response approach and the use of key response techniques should this unexpected event occur;
 - Woodside specifically asked the following questions:
 - How could these activities impact your cultural values, interests, and activities – does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - Advised that Woodside would continue to take feedback from WTOAC for the life of the EP;

- Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should WTOAC wish to provide feedback directly to the Regulator.
 - At the 13 July 2023 meeting WTOAC asked the following questions and provided the following feedback:
 - WTOAC raised a question about the accuracy of the map and noted ongoing discussions around whether a waterway is considered to be Wadawurrung Country;
 - **(1)** WTOAC noted that WTOAC are looking at aquaculture activities that would likely be affected in a worst case scenario;
 - **(2)** WTOAC provided feedback on the cultural importance of the coastline and stated that the proposed measures and controls are sufficient to protect WTOAC's interests;
 - **(3)** WTOAC advised that they do not require any further consultation from Woodside unless otherwise advised.
- On 18 July 2023, Woodside emailed WTOAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that WTOAC advised Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult.
- On 19 July 2023, Woodside emailed WTOAC following up from the meeting held on 13 June 2023 to share presentation materials and request feedback on next steps.
- On 23 July 2023, WTOAC emailed Woodside with thanks for the meeting and advising nothing else is required.
- On 24 July 2023, Woodside emailed WTOAC confirming that Woodside will note on consultation records that no further consultation with WTOAC is required.
- On 24 July 2023, WTOAC emailed Woodside confirming that no further consultation is required.
- On 24 July 2023, Woodside emailed WTOAC with thanks.
- On 5th January 2024, Woodside called WTOAC to provide an update on decommissioning timeframes and ongoing activities to minimise potential environmental impacts. Woodside asked whether WTOAC would like to provide any further feedback, to which WTOAC responded they have nothing further to add.
- On 15 January 2024, Woodside emailed WTOAC offering to arrange an in-person meeting should this be required.
- On 17 January 2024, WTOAC emailed Woodside with a new CEO contact.
- On 17 January 2024, Woodside emailed WTOAC's new CEO with introductions and a request to meet or talk about the activity if they would like to.
- On 23 January 2024, Woodside emailed WTOAC providing an update on planned activities and associated environmental management measures, and a revised Consultation Information Sheet. The email requested feedback in relation to the revised activities and potential impacts on cultural values.
- On 8 February 2024, WTOAC emailed Woodside requesting Woodside provide an update via a virtual meeting.
- On 8 February 2024, Woodside emailed WTOAC proposing 13 or 14 February for a meeting.
- On 9 February 2023, Woodside phone WTOAC and confirmed an in person meeting on 14 February 2024.
- On 14 February 2023, Woodside met with WTOAC. During the meeting Woodside:
 - Described the proposed activities for this EP including the role of decommissioning in the project lifecycle, and an overview of the facilities and types of vessels used
 - Explained the General Direction 831 given by NOPSEMA to have the Minerva P&A activities and subsea removal completed by 30 June 2025
 - Outlined the project schedule and interactions with Blue whales and Southern Wright whales, outlined the whale protection mitigation plan and noise controls in place
 - Displayed and spoke to the EMBA for the proposed activity

- Described planned and unplanned environmental risks and impacts in accordance with tables provided in the Information Sheets for the activities, emphasising that unplanned risks were not expected to occur and were unlikely
- Described approach to cultural heritage and Sea Country
- Woodside specifically asked the following questions:
 - How could these activities impact your cultural values, interests, and activities – does protecting the environment do enough to protect your cultural values?
 - What are your concerns about the proposed activities and what do you think we should do about them?
 - Is there anything you would like included in the EPs before submission?
 - Is there anyone else Woodside should consult with about the activities?
 - Advised that Woodside would continue to take feedback from WTOAC for the life of the EP
 - Provided personal contact details for further feedback. Woodside provided NOPSEMA contact details, should WTOAC wish to provide feedback directly to the Regulator
 - Asked if WTOAC have any questions or feedback.
- At the 14 February 2024 meeting WTOAC provided the following feedback:
 - **(4)** WTOAC stated that the project was unlikely to have an impact on Wadawurrung country.
 - Asked whether there were any employment or business opportunities available.
 - **(5)** Stated that the work is on Eastern Maar country and suggested the cultural awareness training provided by EMAC may be appropriate. Woodside confirmed that consultation with EMAC is taking place.
- On 21 February 2024 Woodside emailed WTOAC thanking WTOAC for making time to meet and reminding the corporation that comments could still be made through NOPSEMA and they could request further consultation.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) During a virtual engagement on 13 July, WTOAC advised Woodside that they are looking at aquaculture activities, in an area that may be affected by an unplanned impact such as an oil spill.</p> <p>(2) WTOAC provided feedback that the coastline is culturally important, and that the proposed measures and controls are sufficient to protect WTOAC’s interests.</p> <p>(3) WTOAC advised on 13 July 2023 that they did not require further consultation unless advised [by WTOAC].</p> <p>(4) WTOAC advised that given the location of the activities it is unlikely to impact Wadawurrung</p>	<p>(1) Woodside notes WTOAC’s potential interest in aquaculture activities. The OPEP described in Appendix E includes requirements to notify relevant cultural authorities whose interests may be affected in the event of a hydrocarbon release.</p> <p>(2) Woodside accepts WTOAC’s feedback that the coastline is culturally important, and that the proposed measures and controls are sufficient to protect WTOAC’s interests.</p> <p>(3) Woodside accepts WTOAC’s feedback that they did not require further consultation.</p> <p>(4) Woodside explained the concept of an EMBA and the potential impact. Woodside accepts WTOAC’s feedback that the activities are unlikely to impact Wadawurrung country.</p>	<p>(1) Existing controls considered sufficient, as described in Sections 7 and 8 and Appendix E.</p> <p>(2) Section 4.6.1.5 has been updated to capture WTOAC’s feedback about the cultural importance of the coastline.</p> <p>(3) No action required.</p> <p>(4) No action required.</p> <p>(5) No action required.</p>

<p>country. No further requests for meetings have been made.</p> <p>(5) WTOAC stated that the work is on Eastern Maar country and suggested the cultural awareness training provided by EMAC may be appropriate.</p>	<p>(5) Woodside accepts WTOAC feedback that the work is on Eastern Maar country. Woodside has consulted with EMAC as per this Table 2. No feedback regarding cultural awareness training has been received from EMAC.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	
<p>Gunaikurnai Land and Waters Aboriginal Corporation (GLAWAC)</p> <p>GLAWAC is established under the Native Title Act 1993 by the Gunaikurnai people to represent the Gunaikurnai people (defined broadly by reference to descent from the set of ancestors who were known to have a continuous and unbroken connection as the Traditional Custodians at the time of European colonisation) and represent their communal interests including, among other things, management and protection of cultural values.</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with GLAWAC for the purposes of 25(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <p>Sufficient Information:</p> <ul style="list-style-type: none"> • Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to WTOAC. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format. • Asked for the consultation and information sheets to be distributed to members and individuals. • Woodside has provided NOPSEMA's Brochure "Consultation on offshore petroleum environment plans" and Guideline "Guideline: Consultation in the course of preparing and environment plan". • Advised that WTOAC can request that particular information provided in the consultation not be published (to align with 25(4)). <p>Reasonable Period:</p> <ul style="list-style-type: none"> • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Woodside commenced consultation with GLAWAC in May 2023, demonstrating a "reasonable period" of consultation. <p>Woodside asked GLAWAC if it was aware of any other Traditional Custodians groups or individuals with whom Woodside should consult. GLAWAC advised the Eastern Maar Aboriginal Corporation should be consulted.</p> <p>Woodside has provided a reasonable opportunity for input since May 2023.</p> <p>Woodside engaged on ongoing consultation, beyond that required by regulation 25 of the Environment Regulations, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revisions process (see Section 9.8 of the EP).</p> <p>Woodside considered that measures and controls described in the EP address the potential impact from the proposed activity on GMTOAC's functions, interests or activities.</p>		

Summary of information provided and record of consultation:

- On 19 May 2023, Woodside emailed GLAWAC advising of the proposed activity (Record of Consultation, reference 1.43) and provided a Consultation Information Sheet.
- On 13 July 2023, Woodside emailed GLAWAC following up on the proposed activity and requesting feedback.
- On 13 July 2023, GLAWAC emailed Woodside an out-of-office response, providing an alternative contact.
- On 13 July 2023, Woodside emailed GLAWAC via the alternative contact following up on the proposed activity and requesting feedback.
- **(1)** On 14 July 2023, GLAWAC emailed Woodside advising that they do not have a cultural interest in the Port Campbell area, and suggested consultation with the Eastern Maar people would be required.
- On 17 July 2023, Woodside emailed GLAWAC providing further information on the EMBA and potential impact on GLAWAC country. Woodside asked GLAWAC whether any further consultation is required. Woodside advised that it is awaiting a response from the Eastern Maar people.
- On 21 July 2023, GLAWAC emailed Woodside providing information on Traditional Owner groups in Victoria.
 - **(1)** GLAWAC advised that they have no comment on the proposed activities.
 - **(2)** They advised that should an unplanned impact occur in the EMBA they would like to be consulted at that time.
- On 21 July 2023, Woodside emailed GLAWAC NOPSEMA's Consultation Guidelines, Consultation Brochure, and Draft Policy for Managing Gender-Restricted Information. This email also reiterated Woodside's request that GLAWAC advise Woodside of any other Traditional Custodian groups or individuals with whom Woodside should consult. Woodside confirmed receipt of the advice that further consultation with GLAWAC is not necessary, excepting if an unplanned impact was to occur.
- On 15 January 2024, Woodside emailed GLAWAC providing an alternative point of contact and offering to set up an in person meeting in February should this be required.
- On 18 January 2024, Woodside emailed GLAWAC providing an update on planned activities and associated environmental management measures, and a revised Consultation Information Sheet. The email requested feedback in relation to the revised activities and potential impacts on cultural values.

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) GLAWAC advised that they do not have a cultural interest in the area impacted by the activity and that Woodside should consult with EMAC.</p> <p>(2) GLAWAC advised Woodside of an expectation to be consulted should an unplanned impact, such as an oil spill, occur.</p>	<p>(1) Woodside accepts that GLAWAC does not have cultural interests in the area. On 17 July 2023, Woodside explained the EMBA and asked GLAWAC to confirm again if they have no cultural interests in the EMBA to which they responded that they had no comment. Woodside confirmed it is consulting with EMAC.</p> <p>(2) Woodside noted this expectation and confirmed that consultation would take place should an unplanned impact occur. The OPEP described in Appendix E includes requirements to notify relevant cultural authorities whose interests may be affected in the event of a hydrocarbon release.</p>	<p>(1, 2) Existing controls considered sufficient, as described in Sections 7 and 8 and Appendix E.</p>
<p>Native Title Representative Bodies</p>		

First Nations Legal and Research Services (FNLRS)

Established in 2003 FNLRS is a Native Title service provider for Victorian Traditional Owners. As such, they are not a Prescribed or Registered Native Title Body Corporate but work with Traditional Owner groups who wish to pursue land justice outcomes in Victoria through formal recognition including through the provision of Community Liaison Officers, lawyers and researchers.

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with FNLRS for the purposes of 25(1) is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

Sufficient Information:

- Provided Consultation Information Sheets and Consultation Summary Sheets developed by Indigenous staff to FNLRS. These set out details of the proposed activity, the location of the activity, the timing of the activity as well as the potential risks and impacts of the activity with controls in a digestible, plain English format.

Reasonable Period:

- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Woodside commenced consultation with FNLRS in May 2023, demonstrating a “reasonable period” of consultation.

Woodside has provided a reasonable opportunity for input since May 2023.

Woodside engaged on ongoing consultation, beyond that required by regulation 25, throughout the life of an EP. Should feedback be received after the EP has been accepted (including any relevant new information on cultural values), it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revisions process (see Section 9.8 of the EP).

Woodside considered that measures and controls described in the EP address the potential impact from the proposed activity on FNLRS’s functions, interests or activities.

Summary of information provided and record of consultation:

- On 22 May 2023, Woodside emailed FNLRS advising of the proposed activity (Record of Consultation, reference 1.44) and provided a Consultation Information Sheet.
- On 2 June 2023, Woodside emailed FNLRS following up on the proposed activity and requesting feedback.
- **(1)** On 7 June 2023, FNLRS emailed Woodside confirming they have no feedback or questions in relation to the proposed activity.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
(1) FNLRS advised that they do not have any feedback or questions in relation to the activity.	(1) Woodside accepts that FNLRS does not have any feedback for the activity.	(1) Not required.

Local Government and Community Representative Groups or Organisations

Bass Coast Shire

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Bass Coast Shire for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to the Bass Coast Shire on 31 May 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community.

<ul style="list-style-type: none"> • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Bass Coast Shire with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Bass Coast Shire advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Bass Coast Shire advising of the proposed activity (Record of Consultation, reference 1.11.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Bass Coast Shire advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to Bass Coast Shire advising of the proposed activity (Record of Consultation, reference 2.3.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Colac Otway Shire		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Colac Otway Shire for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to the Colac Otway Shire on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Colac Otway Shire with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed the Colac Otway Shire advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to the Colac Otway Shire advising of the proposed activity (Record of Consultation, reference 1.11.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed the Colac Otway Shire advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to the Colac Otway Shire advising of the proposed activity (Record of Consultation, reference 2.3.1) 		

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Corangamite Shire Council		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Corangamite Shire Council for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Consultation Information provided to the Corangamite Shire Council on 31 May 2023 based on their function, interest and activities. • Woodside has addressed and responded to the Corangamite Shire Council over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed the Corangamite Shire Council advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • (1) On 31 May 2023, the Corangamite Shire Council provided an automatic response advising of new contact details for the site. • On 19 June 2023, Woodside emailed the new contacts, advising of the proposed activity and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 12 January 2024, Woodside emailed Corangamite Shire Council advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet. • (1) On 12 January 2024, Corangamite Shire Council emailed Woodside with updated contact details. They also CCd the new person to the email reply. • On 25 January 2024, Woodside sent a reminder email to Corangamite Shire Council advising of the proposed activity (Record of Consultation, reference 2.3.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Corangamite Shire Council shared contact details for relevant staff.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside has made note of the provided contact details.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Not required.</p> <p>No additional measures or controls are required.</p>

Glenelg Shire		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Glenelg Shire for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to the Glenelg Shire on 19 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Glenelg Shire with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 June 2023, Woodside emailed the Glenelg Shire advising of the proposed activity (Record of Consultation, 1.46) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 11 July 2023, Woodside sent a reminder email to the Glenelg Shire advising of the proposed activity (Record of Consultation, reference 1.46.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed the Glenelg Shire advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to the Glenelg Shire advising of the proposed activity (Record of Consultation, reference 2.3.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
City of Greater Geelong		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the City of Greater Geelong for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to the City of Greater Geelong on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has addressed and responded to the City of Greater Geelong over a 10-month period. 		

Summary of information provided and record of consultation:

- On 31 May 2023, Woodside emailed the City of Greater Geelong advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- On 23 June 2023, Woodside sent a reminder email to the City of Greater Geelong advising of the proposed activity (Record of Consultation, reference 1.11.1) and provided a Consultation Information Sheet.
- On 12 January 2024, Woodside emailed the City of Greater Geelong advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet.
- On 25 January 2024, Woodside sent a reminder email to the City of Greater Geelong advising of the proposed activity (Record of Consultation, reference 2.3.1)
- On 12 February 2024, the City of Greater Geelong responded to Woodside and:
 - (1) Thanked it for the update
 - (2) Noted that it had been discussed with internal stakeholders and the information has been circulated with relevant emergency management networks
- On 12 February 2024, Woodside thanked the City of Greater Geelong for its response and stated that feedback was welcome throughout the life of an EP.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
The City of Greater Geelong: (1) Thanked Woodside for the update (2) Informed Woodside that the information had been discussed internally and shared with emergency management networks Whilst feedback has been received, there were no objections or claims.	(1) (2) Woodside thanked the City of Greater Geelong for its response and stated that feedback was welcome throughout the life of an EP. Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	(1-2) Not required. No additional measures or controls are required.

Mornington Peninsula Shire

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Mornington Peninsula Shire for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to the Mornington Peninsula Shire on 31 May 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.
- Woodside has sent follow-up emails seeking feedback on the proposed activities.
- Woodside has provided the Mornington Peninsula Shire with the opportunity to provide feedback over a 10-month period.

Summary of information provided and record of consultation:

- On 31 May 2023, Woodside emailed the Mornington Peninsula Shire advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure *Consultation on offshore petroleum environment plans: Information for the community*.

<ul style="list-style-type: none"> On 23 June 2023, Woodside sent a reminder email to the Mornington Peninsula Shire advising of the proposed activity (Record of Consultation, reference 1.11.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed the Mornington Peninsula Shire advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet. On 25 January 2024, Woodside sent a reminder email to the Mornington Peninsula Shire advising of the proposed activity (Record of Consultation, reference 2.3.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Moyne Shire		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Moyne Shire for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to the Moyne Shire on 31 May 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the Moyne Shire with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 31 May 2023, Woodside emailed the Moyne Shire advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to the Moyne Shire advising of the proposed activity (Record of Consultation, reference 1.11.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed the Moyne Shire advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet. On 25 January 2024, Woodside sent a reminder email to the Moyne Shire advising of the proposed activity (Record of Consultation, reference 2.3.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside	No additional measures or controls are required.

	will apply its Management of Change and Revision process (see Section 9.8).	
Borough of Queenscliffe		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Borough of Queenscliffe for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Borough of Queenscliffe on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Borough of Queenscliffe with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Borough of Queenscliffe advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Borough of Queenscliffe advising of the proposed activity (Record of Consultation, reference 1.11.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Borough of Queenscliffe advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to Borough of Queenscliffe advising of the proposed activity (Record of Consultation, reference 2.3.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
South Gippsland Shire		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with South Gippsland Shire for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. 		

<ul style="list-style-type: none"> • Consultation Information provided to South Gippsland Shire on 31 May 2023 based on their function, interest and activities. • Woodside has addressed and responded to South Gippsland Shire over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed South Gippsland Shire advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 14 June 2023, South Gippsland Shire emailed and: <ul style="list-style-type: none"> ○ (1) Thanked Woodside for the information and welcomed updates, stating that the information would be shared with Councillors and staff. ○ (2) Noted that Council is available for any meetings, if required. ○ (3) Stated that Council would help to provide links and connections to their community and relevant stakeholders. • On 22 June 2023, Woodside responded thanking the Shire for its feedback and offering to meet if requested in the future. Woodside said it will continue to inform the Shire with any significant updates. • On 12 January 2024, Woodside emailed South Gippsland Shire advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to South Gippsland Shire advising of the proposed activity (Record of Consultation, reference 2.3.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>South Gippsland Shire:</p> <p>(1) Welcomed updates and will share them with Councillors and staff.</p> <p>(2) Noted that the Council is available for meetings, if required.</p> <p>(3) Stated that the Council would help to provide links and connections to their community and relevant stakeholders.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside:</p> <p>(1) Thanked South Gippsland Shire for sharing the information with Shire Councillors and staff.</p> <p>(2) Offered to meet if requested.</p> <p>(3) Confirmed it will share significant updates to proposed activities under this EP with the Shire.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1, 2) Not required.</p> <p>(3) Woodside has assessed the relevance of local stakeholders in Appendix F and implemented a consultation program to advise relevant persons of the proposed activities and provide opportunity to raise objections or claims, referenced as PS 1.6 in this EP.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on the Shire's functions, interests or activities. No additional measures or controls are required.</p>
Surf Coast Shire		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Surf Coast Shire for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Woodside has provided a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. 		

<ul style="list-style-type: none"> • Consultation Information provided to Surf Coast Shire on 31 May 2023 based on their function, interest and activities. • Woodside has addressed and responded to Surf Coast Shire over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Surf Coast Shire advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • (1) On 2 June 2023, Surf Coast Shire responded to Woodside to advise of the Shire's position of no seismic testing or new oil and gas developments in the Otway Basin. The Shire: <ul style="list-style-type: none"> ○ Requested Woodside reply noting that it understands the Shire's position. ○ Outlined contact details for further information and committed to contact Woodside if it had any questions. ○ Stated its commitment to addressing climate change and the phase out of fossil fuels and advocates for more urgent climate action across all levels of government. • On 2 June 2023, Woodside responded to Surf Coast Shire noting the Shire's position on seismic testing and new oil and gas developments. Woodside explained that this project was decommissioning not exploration or a development activity. • On 12 January 2024, Woodside emailed Surf Coast Shire advising of the proposed activity (Record of Consultation, reference 2.4) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to Surf Coast Shire advising of the proposed activity (Record of Consultation, reference 2.4.1 • (2) On 29 January 2024, Surf Coast Shire responded thanking Woodside for the updates and to continue to do so. • On 1 February 2024, Woodside responded thanking the Shire for their feedback and confirming it would be kept up to date with any changes in the Minerva activities 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Surf Coast Shire:</p> <p>(1) Advised Woodside of its position on opposing seismic testing and any new developments in the Otway Basin. Surf Coast Shire requested Woodside respond noting it understood this position.</p> <p>(2) Requested it continued to be kept updated on development activities in the Otway Basin.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside acknowledged the Surf Coast Shire's position and clarified that this activity is not exploration or a development activity, but decommissioning.</p> <p>(2) Woodside acknowledged the Shire's email and confirmed it would be kept up to date with development activities.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1, 2) Not required.</p> <p>No additional measures or controls are required</p>
Warrnambool City Council		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Warrnambool City Council for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. 		

<ul style="list-style-type: none"> • Consultation Information provided to the Warrnambool City Council on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Warrnambool City Council with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed the Warrnambool City Council advising of the proposed activity (Record of Consultation, reference 1.11) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to the Warrnambool City Council advising of the proposed activity (Record of Consultation, reference 1.11.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed the Warrnambool City Council advising of the proposed activity (Record of Consultation, reference 2.3) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to the Warrnambool City Council advising of the proposed activity (Record of Consultation, reference 2.3.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Apollo Bay Chamber of Commerce		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Apollo Bay Chamber of Commerce for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Apollo Bay Chamber of Commerce on 19 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Apollo Bay Chamber of Commerce with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 19 June 2023, Woodside emailed Apollo Bay Chamber of Commerce advising of the proposed activity (Record of Consultation, reference 1.35) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 11 July 2023, Woodside sent a reminder email to Apollo Bay Chamber of Commerce advising of the proposed activity (Record of Consultation, reference 1.35.1) and provided a Consultation Information Sheet. 		

<ul style="list-style-type: none"> On 12 January 2024, Woodside emailed Apollo Bay Chamber of Commerce advising of the proposed activity (Record of Consultation, reference 2.26) and provided an updated Consultation Information Sheet. On 25 January 2024, Woodside sent a reminder email to Apollo Bay Chamber of Commerce advising of the proposed activity (Record of Consultation, reference 2.26.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Great Ocean Road Coast and Parks Authority		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Great Ocean Road Coast and Parks Authority for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to Great Ocean Road Coast and Parks Authority on 31 May 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has addressed and responded to the Great Ocean Road Coast and Parks Authority over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 31 May 2023, Woodside emailed Great Ocean Road Coast and Parks Authority advising of the proposed activity (Record of Consultation, reference 1.12) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to Great Ocean Road Coast and Parks Authority advising of the proposed activity (Record of Consultation, reference 1.12.1) and provided a Consultation Information Sheet. (1) On 23 June 2023, Great Ocean Road Coast and Parks Authority emailed Woodside acknowledging previous emails and advising that they have been forwarded to their Environmental Directorate. The Authority also asked about consultation timeframes. On 23 June 2023, Woodside responded and advised that consultation remains ongoing, but would appreciate feedback by 18 July 2023, so that it could be incorporated into the Minerva EP submission. On 23 June, Great Ocean Road Coast and Parks Authority thanked Woodside for the response. On 12 January 2024, Woodside emailed Great Ocean Road Coast and Parks Authority advising of the proposed activity (Record of Consultation, reference 2.41) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to Great Ocean Road Coast and Parks Authority advising of the proposed activity (Record of Consultation, reference 2.41.1) 		

Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Great Ocean Road Coast and Parks Authority advised that Woodside's emails had been sent to the Environmental Directorate and asked about timeframes for consultation.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside reiterated that consultation was ongoing but feedback would be appreciated by 18 July 2023.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Not required.</p> <p>No additional measures or controls are required.</p>
<p>Port Campbell Community Group</p>		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Port Campbell Community Group for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Port Campbell Community Group on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Port Campbell Community Group with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Port Campbell Community Group advising of the proposed activity (Record of Consultation, reference 1.49) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Port Campbell Community Group advising of the proposed activity (Record of Consultation, reference 1.49.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Port Campbell Community Group advising of the proposed activity (Record of Consultation, reference 2.48) and provided an updated Consultation Information Sheet • On 14 January 2024, Woodside received a notification stating that delivery of the 12 January 2024 email had failed. • On 17 January 2024, Woodside re-sent the email from 12 January 2024. • On 19 January 2024, Woodside received a notification stating that delivery of the 17 January 2024 email had failed. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside</p>	<p>No additional measures or controls are required.</p>

	will apply its Management of Change and Revision process (see Section 9.8).	
Other Non-Government Groups or Organisations		
Environment Victoria		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Environment Victoria for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Environment Victoria on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Environment Victoria with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed Environment Victoria advising of the proposed activity (Record of Consultation, reference 1.25) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Environment Victoria advising of the proposed activity (Record of Consultation, reference 1.25.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Environment Victoria advising of the proposed activity (Record of Consultation, reference 2.14) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Environment Victoria advising of the proposed activity (Record of Consultation, reference 2.14.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Australian Coastal Society — Victorian Chapter		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Australian Coastal Society — Victorian Chapter for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. 		

<ul style="list-style-type: none"> • Consultation Information provided to Australian Coastal Society — Victorian Chapter on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided Australian Coastal Society — Victorian Chapter with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed Australian Coastal Society — Victorian Chapter advising of the proposed activity (Record of Consultation, reference 1.26) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Australian Coastal Society — Victorian Chapter advising of the proposed activity (Record of Consultation, reference 1.26.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Australian Coastal Society — Victorian Chapter advising of the proposed activity (Record of Consultation, reference 2.17) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Australian Coastal Society — Victorian Chapter advising of the proposed activity (Record of Consultation, reference 2.17.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Marine Mammal Foundation		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Marine Mammal Foundation for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to the Marine Mammal Foundation on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Marine Mammal Foundation with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed the Marine Mammal Foundation advising of the proposed activity (Record of Consultation, reference 1.27) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to the Marine Mammal Foundation advising of the proposed activity (Record of Consultation, reference 1.27.1) and provided a Consultation Information Sheet. 		

<ul style="list-style-type: none"> On 12 January 2024, Woodside emailed Marine Mammal Foundation advising of the proposed activity (Record of Consultation, reference 2.15) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to Marine Mammal Foundation advising of the proposed activity (Record of Consultation, reference 2.15.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Maritime Union of Australia (MUA)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the MUA for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to the MUA on 2 June 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the MUA with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 2 June 2023, Woodside emailed the MUA advising of the proposed activity (Record of Consultation, reference 1.28) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to the MUA advising of the proposed activity (Record of Consultation, reference 1.28.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed the MUA advising of the proposed activity (Record of Consultation, reference 2.19) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to the MUA advising of the proposed activity (Record of Consultation, reference 2.19.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.

Friends of the Earth Australia

Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Friends of the Earth Australia for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:

- Consultation Information Sheet publicly available on the Woodside website since May 2023.
- Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback.
- Consultation Information provided to Friends of the Earth on 9 February 2023 based on their function, interest and activities.
- Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community.
- Woodside has addressed and responded to Friends of the Earth over a 14-month period.

Summary of information provided and record of consultation:

- On 11 January 2023, Friends of the Earth emailed Woodside requesting a meeting as the new Offshore Gas Campaigner for Friends of the Earth, with a brief to concentrate on decommissioning.
- On 23 January 2023, Woodside responded requesting a suitable date/time for a video call in early February 2023.
- On 23 January 2023, Friends of the Earth emailed with a suitable time.
- On 30 January 2023, Woodside confirmed the meeting time and advised an invite would be sent.
- On 8 February 2023, Woodside had a meeting with Friends of the Earth of Australia:
 - Friends of the Earth provided Woodside an overview of the organisation's functions, activities and interests.
 - Woodside provided an overview of its upcoming decommissioning activities, including activities proposed under this EP.
 - Friends of the Earth advised its desire:
 - **(1)** For recycling and highlighted it was advocating for large recycling facilities including the possibility of one in Victoria
 - **(2)** To leave certain infrastructure in-situ because of the habitat it had created.
 - Friends of the Earth also expressed its views on:
 - **(3)** Dredging to minimise turbidity
 - **(4)** Working with Traditional Custodians to be guided on their views.
 - Woodside provided an overview of its expanded approach to consultation on the EMBA for proposed activities, including risks and mitigations. Woodside emphasised its commitment to re-use, repurposing and recycling of decommissioning infrastructure.
- On 9 February 2023, Woodside emailed Friends of the Earth Australia thanking it for its time to meet with Woodside on 8 February 2023. Woodside summarised the proposed activities, including the activities proposed under this EP and provided a link to the Activity Update Consultation Information Sheet as well as Woodside's Consultation website which can be subscribed to.
- On 30 May 2023, Woodside had an email exchange with Friends of the Earth to arrange an update on Woodside's decommissioning activities, including the activities proposed under this EP.
- On 30 May 2023, Woodside spoke with Friends of the Earth Australia where it was reiterated its interests were focused on:
 - **(5)** Marine life,
 - **(6)** Social justice, and

<ul style="list-style-type: none"> ○ (7) Indigenous issues. <ul style="list-style-type: none"> • On 6 June 2023, Woodside sent an email to Friends of the Earth Australia thanking it for the 30 May 2023 discussion and provided a copy of a number of Consultation Information Sheets, including the activities proposed under this EP and offered to arrange a meeting unrelated to this EP. • On 15 January 2024, Woodside emailed Friends of the Earth advising of the proposed activity (Record of Consultation, reference 2.44) and provided an updated Consultation Information Sheet. 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Friends of the Earth raised:</p> <ul style="list-style-type: none"> (1) Its desire for recycling. (2) Its preference for leaving certain infrastructure in-situ because of the habitat it created. (3) Its views on dredging to minimise turbidity (4) Working with Traditional Custodians to be guided on their views. (5) Its interest is in marine life. (6) Its interest in social justice. (7) Its interest in Indigenous issues. <p>Whilst feedback has been received, there were no objections.</p>	<p>Woodside:</p> <ul style="list-style-type: none"> (1) Advised that decommissioned infrastructure is transported for onshore recycling or reuse opportunities when removed from the field. Woodside also advised its focus on establishing local content opportunities for onshore recycling. (2) Noted views on leaving infrastructure in situ. (3) Noted views on dredging and turbidity. (4) Confirmed it consults with Traditional Owners in the course of preparing EPs and also engages in ongoing consultation subsequent to the approval of the EP. (5) Provided an overview of its expanded approach to consultation on the EMBA for proposed activities, including risks and mitigations to marine life. (6, 7) Invited Friends of the Earth to meet to further discuss their areas of interest, should they wish to. <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<ul style="list-style-type: none"> (1) Not required. (2) Not required. Sections 7.7 and 9.5 of this EP addresses how any waste generated during the activity (such as recovered subsea infrastructure) will be managed through the Minerva Decommissioning Waste Management Hierarchy and Plan. (3) Not required. Section 7.2 of this EP addresses sediment relocation, and notes that while Scallop Fishery dredges may interact with the Minerva subsea infrastructure, no scallop fishing has occurred in recent years in the Operational Area. Section 7.2 notes that while decommissioning activities can cause some turbidity, it is expected to be minor and localised. (4) Not required. Section 5 of this EP outlines Woodside's consultation process, including with Traditional Owners. Appendix F includes a summary of consultation conducted to the date of the submission of this EP. (5) Not required. (6, 7) Not required. <p>No additional measures or controls are required.</p>
Research Institutes and Local Conservation Groups or Organisations		
Blue Whale Study		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Blue Whale Study for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. 		

<ul style="list-style-type: none"> • Consultation Information provided to the Blue Whale Study on 2 June 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Blue Whale Study with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed the Blue Whale Study advising of the proposed activity (Record of Consultation, reference 1.31) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to the Blue Whale Study advising of the proposed activity (Record of Consultation, reference 1.31.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Blue Whale Study advising of the proposed activity (Record of Consultation, reference 2.23) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Blue Whale Study advising of the proposed activity (Record of Consultation, reference 2.23.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Apollo Bay Landcare		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Apollo Bay Landcare for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Apollo Bay Landcare on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Apollo Bay Landcare with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Apollo Bay Landcare advising of the proposed activity (Record of Consultation, reference 1.13) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Apollo Bay Landcare advising of the proposed activity (Record of Consultation, reference 1.13.1) and provided a Consultation Information Sheet. 		

<ul style="list-style-type: none"> On 12 January 2024, Woodside emailed Apollo Bay Landcare advising of the proposed activity (Record of Consultation, reference 2.45) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to Apollo Bay Landcare advising of the proposed activity (Record of Consultation, reference 2.45.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Otway Climate Emergency Action Network (OCEAN)		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Otway Climate Emergency Action Network (OCEAN) for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> Consultation Information Sheet publicly available on the Woodside website since May 2023. Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. Consultation Information provided to Otway Climate Emergency Action Network on 31 May 2023 based on their function, interest and activities. Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. Woodside has sent follow-up emails seeking feedback on the proposed activities. Woodside has provided the Otway Climate Emergency Action Network with the opportunity to provide feedback over a 9-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 31 May 2023, Woodside emailed OCEAN advising of the proposed activity (Record of Consultation, reference 1.13) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to OCEAN advising of the proposed activity (Record of Consultation, reference 1.13.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed OCEAN advising of the proposed activity (Record of Consultation, reference 2.45) and provided an updated Consultation Information Sheet. On 25 January 2024, Woodside sent a reminder email to OCEAN advising of the proposed activity (Record of Consultation, reference 2.45.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.

Otway Water		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with Otway Water for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Otway Water on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Otway Water with the opportunity to provide feedback over a 10-month period. <p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 31 May 2023, Woodside emailed Otway Water advising of the proposed activity (Record of Consultation, reference 1.13) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to Otway Water advising of the proposed activity (Record of Consultation, reference 1.13.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed Otway Water advising of the proposed activity (Record of Consultation, reference 2.45) and provided an updated Consultation Information Sheet • On 25 January 2024, Woodside sent a reminder email to Otway Water advising of the proposed activity (Record of Consultation, reference 2.45.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Warrnambool Coastcare Landcare Network		
<p>Woodside has discharged its obligations for consultation under regulation 25 of the Environment Regulations and consultation with the Warrnambool Coastcare Landcare Network for the purpose of regulation 25 is complete. Sufficient information and a reasonable period have been provided, as described in Section 5.4 of the EP. Specifically:</p> <ul style="list-style-type: none"> • Consultation Information Sheet publicly available on the Woodside website since May 2023. • Woodside published advertisements in a national, state and relevant local newspapers on 17 May 2023 advising of the proposed activities and requesting feedback. • Consultation Information provided to Warrnambool Coastcare Landcare Network on 31 May 2023 based on their function, interest and activities. • Woodside has provided a link to NOPSEMA's brochure Consultation on offshore petroleum environment plans: Information for the community. • Woodside has sent follow-up emails seeking feedback on the proposed activities. • Woodside has provided the Warrnambool Coastcare Landcare Network with the opportunity to provide feedback over a 10-month period. 		

Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 31 May 2023, Woodside emailed Warrnambool Coastcare Landcare Network advising of the proposed activity (Record of Consultation, reference 1.13) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to Warrnambool Coastcare Landcare Network advising of the proposed activity (Record of Consultation, reference 1.13.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed Warrnambool Coastcare Landcare Network advising of the proposed activity (Record of Consultation, reference 2.45) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to Warrnambool Coastcare Landcare Network advising of the proposed activity (Record of Consultation, reference 2.45.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.

Table 3: Engagement Report with Persons or Organisations Assessed as Not Relevant

Other Non-Government Groups or Organisations		
Greenpeace Australia Pacific (GAP)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 2 June 2023, Woodside emailed GAP advising of the proposed activity (Record of Consultation, reference 1.24) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 26 June 2023, Woodside sent a reminder email to GAP advising of the proposed activity (Record of Consultation, reference 1.24.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed GAP advising of the proposed activity (Record of Consultation, reference 2.24) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to GAP advising of the proposed activity (Record of Consultation, reference 2.24.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Australian Conservation Foundation (ACF)		
Summary of information provided and record of consultation:		
<ul style="list-style-type: none"> On 2 June 2023, Woodside emailed ACF advising of the proposed activity (Record of Consultation, reference 1.29) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to ACF advising of the proposed activity (Record of Consultation, reference 1.29.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed ACF advising of the proposed activity (Record of Consultation, reference 2.22) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to ACF advising of the proposed activity (Record of Consultation, reference 2.22.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	No additional measures or controls are required.
Australian Marine Conservation Society (AMCS)		

<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 12 January 2024, Woodside emailed AMCS advising of the proposed activity (Record of Consultation, reference 2.49) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to AMCS advising of the proposed activity (Record of Consultation, reference 2.49.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>No additional measures or controls are required.</p>
<p>Research Institutes and Local Conservation Groups or Organisations</p>		
<p>Commonwealth Scientific and Industrial Research Organisation (CSIRO)</p>		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 2 June 2023, Woodside emailed CSIRO advising of the proposed activity (Record of Consultation, reference 1.32) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to CSIRO advising of the proposed activity (Record of Consultation, reference 1.32.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed CSIRO advising of the proposed activity (Record of Consultation, reference 2.21) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to CSIRO advising of the proposed activity (Record of Consultation, reference 2.21.1) 		
<p>Summary of Feedback, Objection or Claim</p>	<p>Woodside Energy's Assessment of Merits of Feedback, Objection or Claim and its Response</p>	<p>Inclusion in Environment Plan</p>
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>No additional measures or controls are required.</p>
<p>Australian Institute of Marine Science (AIMS)</p>		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 2 June 2023, Woodside emailed AIMS advising of the proposed activity (Record of Consultation, reference 1.33) and provided a Consultation Information Sheet and a link to NOPSEMA's brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 23 June 2023, Woodside sent a reminder email to AIMS advising of the proposed activity (Record of Consultation, reference 1.33.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed AIMS advising of the proposed activity (Record of Consultation, reference 2.25) and provided an updated Consultation Information Sheet 		

<ul style="list-style-type: none"> On 25 January 2024, Woodside sent a reminder email to AIMS advising of the proposed activity (Record of Consultation, reference 2.25.1) On 12 February 2024, AIMS responded to Woodside and: <ul style="list-style-type: none"> (1) Confirmed AIMS will not be operating at the time of the activities (2) Advised it had consulted AIMS Pygmy Blue Whale experts who confirmed Woodside’s proposed control measures looked adequate. (3) Will check with AIMS Warrnambool Blue Whale colleagues for any additional suggestions on the control measures. On 13 February 2024, Woodside replied and: <ul style="list-style-type: none"> Thanked AIMS for their response and for confirming there are no AIMS operations in the area at the specified time Noted AIMS conclusion that Woodside’s control measures looked adequate Welcomed the engagement of AIMS staff in Warrnambool on the control measures and looked forward to any further feedback by 16 February 2024. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>AIMS responded and confirmed:</p> <p>(1) There are no operational activities at the same time as Minerva planned activities.</p> <p>(2) Woodside’s control measures for Pygmy Blue Whales looked adequate.</p> <p>(3) They will share Woodside’s information with Victorian Blue Whale expert counterparts in case there is any additional feedback on the control measures.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>Woodside:</p> <p>(1) Noted AIMS’ advice that there are no operational activities during the proposed activities for this EP.</p> <p>(2) Acknowledged AIMS’ feedback that Woodside control measures looked adequate.</p> <p>(3) Stated that input from AIMS Blue Whale colleagues in Warrnambool was welcomed.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1-3) Not required.</p> <p>No additional measures or controls are required.</p>
Deakin University — School of Life and Environmental Sciences		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 19 June 2023, Woodside emailed the Deakin University — School of Life and Environmental Sciences advising of the proposed activity (Record of Consultation, reference 1.36) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. On 12 July 2023, Woodside sent a reminder email to Deakin University — School of Life and Environmental Sciences advising of the proposed activity (Record of Consultation, reference 1.36.1) and provided a Consultation Information Sheet. On 12 January 2024, Woodside emailed Deakin University — School of Life and Environmental Sciences advising of the proposed activity (Record of Consultation, reference 2.28) and provided an updated Consultation Information Sheet. On 25 January 2024, Woodside sent a reminder email to Deakin University — School of Life and Environmental Sciences advising of the proposed activity (Record of Consultation, reference 2.28.1) 		

<ul style="list-style-type: none"> • (1) On 29 January 2024, Deakin University — School of Life and Environmental Sciences responded and introduced a new contact person. • On 29 January 2024, Woodside responded, acknowledged the additional new contact and confirmed they would be kept informed of any updates to the Minerva activities. 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>(1) Deakin University — School of Life and Environmental Sciences introduced a new contact person.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(1) Woodside noted the updated contact and confirmed they would be kept informed of any updates to the Minerva activities.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should further feedback be received, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>(1) Not required.</p> <p>No additional measures or controls are required.</p>
Fisheries Research and Development Corporation (FRDC)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed FRDC advising of the proposed activity (Record of Consultation, reference 1.30) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to FRDC advising of the proposed activity (Record of Consultation, reference 1.30.1) and provided a Consultation Information Sheet. • On 12 January 2024, Woodside emailed FRDC advising of the proposed activity (Record of Consultation, reference 2.20) and provided an updated Consultation Information Sheet. • On 25 January 2024, Woodside sent a reminder email to FRDC advising of the proposed activity (Record of Consultation, reference 2.20.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>No feedback, objections or claims received despite follow up.</p>	<p>Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	<p>No additional measures or controls are required.</p>
Commonwealth Commercial Fisheries and Representative Bodies		
Australian Southern Bluefin Tuna Industry Association (ASBTIA)		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> • On 2 June 2023, Woodside emailed ASBTIA advising of the proposed activity (Record of Consultation, reference 1.21) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure <i>Consultation on offshore petroleum environment plans: Information for the community</i>. • On 23 June 2023, Woodside sent a reminder email to ASBTIA advising of the proposed activity (Record of Consultation, reference 1.21.1) and provided a Consultation Information Sheet. 		

<ul style="list-style-type: none"> On 12 February 2024, Woodside emailed ASBTIA advising of the proposed activity (Record of Consultation, reference 2.8) and provided an updated Consultation Information Sheet On 25 January 2024, Woodside sent a reminder email to ASBTIA advising of the proposed activity (Record of Consultation, reference 2.8.1) 		
Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
No feedback, objections or claims received despite follow up.	Woodside engages in ongoing consultation throughout the life of an EP. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).	Woodside has assessed the potential for interaction with Commonwealth and State managed commercial fisheries in Section 4.6.2 of this EP. No additional measures or controls are required.
Tuna Australia		
<p>Summary of information provided and record of consultation:</p> <ul style="list-style-type: none"> On 2 June 2023, Woodside emailed Tuna Australia advising of the proposed activity (Record of Consultation, reference 1.21) and provided a Consultation Information Sheet and a link to NOPSEMA’s brochure Consultation on offshore petroleum environment plans: Information for the community. On 2 June 2023, Woodside made a phone call to Tuna Australia and left a voicemail covering the following: <ul style="list-style-type: none"> Woodside called Tuna Australia on 2 June 2023 to follow up on phone call on 26 May 2023 unrelated to this EP. Woodside left a message requesting a call back and the opportunity to meet with Tuna Australia to discuss Woodside’s portfolio of environment plan activities. Woodside requested the opportunity to discuss options to consult with Tuna Australia and potentially lessen the burden on Tuna Australia for providing feedback on Woodside’s EPs. Woodside offered the opportunity to take Tuna Australia through the entire EP portfolio, inclusive of decommissioning, so Tuna Australia could better assess the volume of activities. Woodside reiterated that there was no expectation for Tuna Australia to provide a consultation report on each individual EP, and potentially there is an opportunity for Woodside and Tuna Australia to work together on a more strategic approach. On 5 June 2023, Tuna Australia emailed Woodside and: <ul style="list-style-type: none"> (1) Stated that they had previously supplied information on how it engages with energy companies and resupplied its Industry Position Statement. (2) Expressed that Tuna Australia did not believe Woodside’s engagement style constitutes genuine consultation. (3) Advised it had a pathway for genuine consultation to occur if Woodside wished to engage. On 6 June 2023, Tuna Australia returned Woodside’s call regarding an opportunity to meet to discuss a more strategic approach to consultation. On 8 June 2023, Tuna Australia returned Woodside’s call and asked Woodside to call back on 14 June 2023. On 14 June 2023, Woodside returned Tuna Australia’s phone call and left a message for Tuna Australia to call back. On 20 June 2023, Woodside and Tuna Australia held a meeting to discuss Tuna Australia’s Industry Position Statement. <ul style="list-style-type: none"> Woodside provided an overview of its activities and explained how recent case law and NOPSEMA guidance had resulted in Woodside undertaking consultation on the widest potential ‘EMBA’ 		

- Tuna Australia agreed to share with Woodside the name of any of the Offshore Sectors' titleholders that have entered into Tuna Australia's service agreement to date.
- **(4)** Tuna Australia also agreed to provide more detail on how Tuna Australia will distribute consultation materials to its membership/licence holders and the format of any report arising from the data collected.
- Woodside committed to review Tuna Australia's Service Agreement.
- On 26 June 2023, Woodside emailed Tuna Australia following the meeting held on 20 June 2023 and recapped what was discussed.
 - Woodside thanked Tuna Australia for its time and stated it looked forward to continuing to work with Tuna Australia.
 - Woodside directed Tuna Australia to contact the Woodside Feedback inbox for any further information.
- On 30 June 2023, Tuna Australia's CEO responded to Woodside's email of 26 June 2023. Tuna Australia:
 - Noted outcomes of the recent case law focussed on stakeholder engagement and ensuring energy companies meet regulatory requirements and NOPSEMA guidelines.
 - Requested Woodside send the recent case law.
 - Reached out to energy companies who have executed a services agreement with Tuna Australia and asked whether Tuna Australia could inform Woodside about their working relationship. Beach Energy confirmed it was happy for Tuna Australia to share its details.
 - Advised how it contacts concession holders and what it provides to them.
 - **(4)** Provided a Tuna Australia contact who manages engagement with energy companies to progress a service agreement with Tuna Australia.
- On 17 July 2023, Woodside emailed Tuna Australia and confirmed:
 - Woodside's legal team had reviewed the Tuna Australia document and requested some minor changes to be made.
 - Woodside asked Tuna Australia if a marked up version of the Service Agreement would be the simplest way for Tuna Australia to review.
 - Woodside attached a Supplier Questionnaire as part of its due diligence process and asked Tuna Australia to complete the form.
- On 18 July 2023, Tuna Australia emailed Woodside and confirmed:
 - Woodside should send a marked up version of the Service Agreement for Tuna Australia to review.
 - Tuna Australia would fill out the Supplier Questionnaire and return in the next couple of days.
- On 18 July 2023, Woodside emailed Tuna Australia and sent a marked up version of the Service Agreement for Tuna Australia to review.
- On 19 July 2023, Tuna Australia emailed Woodside and thanked it for sending through edit's to Tuna Australia's services agreement and commented:
 - **(5)** Tuna Australia does not want any changes made to Schedule 2 of their Service Agreement and if Woodside has requirements outside of what Tuna Australia provides, then this will need to be discussed, agreed, and costed accordingly.
 - **(5)** Tuna Australia would like further details on the Annual service for the Woodside Master Existing document including the rationale for the payment proposed.
 - **(5)** Tuna Australia does not agree to a fixed price for the above bodies of work. Tuna Australia wants clarification on what the Annual service entails, and how the fixed priced value was arrived at.
 - **(5)** Regarding the fixed fee for delivery of a specific consultation service, Tuna Australia need to remain flexible to clients' needs and discuss additional works should they be required. Tuna Australia says it specified in the schedule that it would never proceed with more work or charge more money without approval and this should suffice for Woodside.
 - **(5)** Tuna Australia does not agree on the current terms which have been changed in Item 2 of Schedule 1 and says it seeks a two year agreement as per the agreement template.

- On 2 August 2023, Woodside emailed Tuna Australia, thanked them for their response re the Service Agreement and advised that Woodside's legal team will review and Woodside will revert as soon as possible. Woodside asked Tuna Australia to please complete the Supplier Questionnaire which was sent on 17 July 2023.
- On 3 August 2023, Tuna Australia replied, apologised for the delay and sent the completed Supplier Questionnaire to Woodside.
- On 8 August 2023, Tuna Australia responded in regards to another EP stating that as per its recent discussions with Woodside, Tuna Australia could consult on the EP once it had a services agreement in place.
- On 23 August 2023, Tuna Australia emailed Woodside following up on Woodside's consultation requirements with the tuna longline industry regarding another EP. Tuna Australia asked for clarity on whether Woodside was planning to engage Tuna Australia to consult on behalf of the tuna longline industry on this and other upcoming EPs that Woodside was seeking feedback on.
- On 30 August 2023, Woodside emailed Tuna Australia and advised that Tuna Australia's feedback on the Service Agreement had been considered. Woodside asked for clarity on whether Tuna Australia would accept a section on ethical business practices. Once this had been accepted, Woodside could work through Tuna Australia's other points.
- **(5)** On 4 September 2023, Tuna Australia emailed Woodside and advised that it had seen the anti bribery and corruption clauses included in the vendor registration process of other energy companies but had not seen it proposed inside an agreement before. Tuna Australia advised it was not against including them in the agreement, but asked if it was the best place for it.
- On 6 November 2023, Tuna Australia emailed Woodside regarding another EP and stated:
 - **(6)** It was prepared to assist Woodside to ensure a separate EP was comprehensive and extended to all relevant persons, and that Woodside was aware the AFMA webpage requesting concession owners and holders to be contacted was out of date.
 - **(7)** The proponent must address planned fishing effort and development of the fishery, and focussing on historical fishing effort as the basis for validating the EP was a flawed assessment.
 - **(8)** It was concerned recent consultation by energy companies had involved accessing mailing lists sourced from AFMA or elsewhere and some contact lists were outdated, inaccurate and not fit-for-purpose as they did not contact the required target audience, while Tuna Australia's database was up to date, accurate and actively managed and reviewed.
 - **(9)** It had offered to assist energy companies to genuinely and comprehensively meet consultation and reporting requirements and its view was that consultation not conducted through its services was highly likely to be incomplete.
 - **(10)** Tuna Australia could not support the other EP proposal as it believed Woodside had fallen short of genuine and comprehensive consultation.
 - **(11)** Woodside should advise if it wished to progress with a services agreement and work collaboratively.
- On 22 November 2023, Woodside responded thanking Tuna Australia for its email on a separate EP and advised:
 - As Tuna Australia was aware, offshore proponents consult relevant persons under the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009.
 - Woodside's consultation process identified relevant persons and provided them sufficient information and a reasonable period to make an informed assessment of the possible consequences of the proposed activity on their functions, interests and activities.
 - Woodside obtained contact details of individual Commonwealth fishing statutory fishing rights and fishing permit holders so that consultation was consistent with the Regulations. As noted on its website, AFMA's expectation was that petroleum operators consulted with fishing operators about all activities and projects which may affect day-to-day fishing activities.
 - In addition to consulting individual licence holders, Woodside consulted relevant fishing industry associations and representative bodies such as Tuna Australia and Commonwealth Fisheries Association, and referred to the AFMA website to help inform which associations and bodies were relevant.

- While the management area for the Western Tuna and Billfish Fishery overlapped the Operational Area for the other EP, based on AFMA data, no recent fishing effort had occurred within the Operational Area for at least the past 10 years. Despite this, Woodside chose to consult licence holders in this fishery.
- The Offshore Environment Regulations did not require entry into service agreements in order to meet EP consultation requirements.
- Woodside has met its consultation obligations under the Regulations and given Tuna Australia sufficient time and information to provide input.
- On 5 December 2023, Tuna Australia responded and thanked Woodside for its advice. Tuna Australia noted:
 - **(12)** It was concerned Woodside was electing to cherry-pick on how to meet statutory requirements, for example by focussing on fishing effort and disregarding important information in the OPGGS Act 2006 and Regulations.
 - **(13)** To progress consultation, it wished to pause the process while it took advice.
 - **(9)** It could assist Woodside to develop an EP that was significantly improved and met regulatory requirements.
- On 20 December 2023, Woodside responded and thanked Tuna Australia for its response. Woodside advised:
 - Woodside met its legislative and regulatory requirements in the development and implementation of an EP.
 - Woodside would continue to consult Tuna Australia and individual Commonwealth licence holders for proposed activities where relevant and as appropriate.
 - Consultation was voluntary and Tuna Australia could decide whether it wished to engage in the process or not.
- On 21 December 2023, Tuna Australia responded and thanked Woodside for its response. Tuna Australia noted:
 - **(4,6,10)** The OPGGS Act 2006 clearly stated that when developing an EP, the proponent must demonstrate they could “carry on those activities in a manner that does not interfere with navigation, fishing or the conservation of the resources of the sea and seabed”. It had provided its industry position statement and, as mentioned previously, it was prepared to provide services to Woodside to ensure the EP met legislative and regulatory requirements. Tuna Australia would ensure thorough and comprehensive consultation on the proposed EP to ensure activities did not have an adverse impact on the fishery and marine environment, and without this advice, any EP submitted to NOPSEMA would be incomplete, inadequate and would not meet regulatory requirements.
 - **(14)** Tuna Australia would welcome comment from NOPSEMA on the content required in an EP to meet regulatory requirements when considering potential impacts on Australian tuna fisheries, especially in the context of knowing that Tuna Australia can comprehensively provide this information through a services agreement and Woodside has chosen not to engage.
 - **(11)** Tuna Australia was now breaking for the festive season but urged Woodside to consider whether it would like to enter a services agreement and to advise accordingly in the week starting 8 January 2024.
- On 12 January 2024, Woodside emailed Tuna Australia advising of the proposed activity (Record of Consultation, reference 2.16) and provided an updated Consultation information Sheet.
- On 25 January 2024, Woodside sent a reminder email to Tuna Australia advising of the proposed activity (Record of Consultation, reference 2.16.1) and provided an updated Consultation Information Sheet
- On 5 February 2024, Tuna Australia emailed Woodside regarding another EP and provided feedback on Woodside’s approach to consultation. It noted:
 - **(6)** Woodside had decided that rather than developing an ongoing working relationship with Tuna Australia, it would contact all tuna concession owners and holders by accessing the AFMA database.
 - **(15)** There were many AFMA permit registers depending on the fishery and the permit register changed regularly as entitlements were sold and traded. This meant Woodside would need to request a new permit register every time it submitted an EP or a variation to an EP. Woodside would need to reference when it sourced the permit registry to ensure NOPSEMA was assured the list was not outdated.
 - **(16)** After reviewing the FMA 1991 Act and Regulations, Tuna Australia believed Woodside had been provided permit register contact details in error. It was following up on the use of industry data with AFMA and had not ruled out legally challenging the provision of industry data sourced via AFMA.

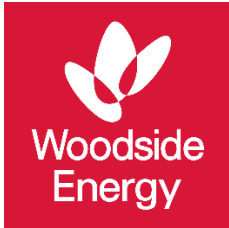
- On 19 February 2024, Woodside responded to Tuna Australia and advised:
 - Woodside was willing to have a working relationship, however it noted Tuna Australia’s position was to only do this via a fee-for-service agreement.
 - Woodside had previously engaged with Tuna Australia on a draft agreement; however it was not willing to make amendments to the draft agreement proposed by Woodside.
 - Outside a fee-for-service agreement, Woodside was willing to explore options on how best to consult Tuna Australia and licence holders.
 - As previously advised, Tuna Australia obtained contact details of individual Commonwealth statutory fishing rights and fishing permit holders so consultation was consistent with the Regulations. Consultation with fishery operators met the expectation of AFMA that petroleum operators consulted with fishing operators about all activities and projects which might affect day-to-day fishing activities.
 - Woodside regularly updated contact details of individual licence holders to facilitate consultation.
 - Woodside noted Tuna Australia was engaging with AFMA on the provision of permit register contact details under the *Fisheries Management Act 1991*, and Regulations.
- On 19 February 2024, Tuna Australia responded and advised:
 - **(5)** The offer it previously received from Woodside to charter a report on fisheries was insulting.
 - **(4,9)** It could reach out to all tuna concession owners and holders relevant to proposed EPs ensuring improved outcomes to meet regulatory requirements. Other energy companies had executed a services agreement with Tuna Australia and were pleased with the engagement and detailed advice.
 - **(4,11)** It had proposed a simple process ensuring Woodside met consultation obligations while not placing disproportionate burden on other sectors, and if Woodside would like an updated services agreement, it should let Tuna Australia know.
- On 7 March 2024, Woodside responded and thanked Tuna Australia for its response and asked for the proposed updated services agreement. Woodside advised that it would like to ensure relevant clauses were appropriately considered including those on ethical business practices.
- **(3)** On 11 March 2024, Tuna Australia responded and provided a copy of the services agreement. Tuna Australia noted that late last year it was required to fill out a supplier questionnaire regarding ethical business practices and attached this form again.

Summary of Feedback, Objection or Claim	Woodside Energy’s Assessment of Merits of Feedback, Objection or Claim and its Response	Inclusion in Environment Plan
<p>Tuna Australia:</p> <p>(1) Advised it had previously supplied information on how it engages with energy companies and provided Woodside with an industry position statement.</p> <p>(2) Advised it didn’t believe Woodside’s engagement is genuine consultation.</p> <p>(3) Reiterated the need for a service agreement as the pathway to genuine consultation.</p> <p>(4) Provided feedback it could no longer coordinate consultation with offshore energy activities on behalf of its members without a services agreement in place. Tuna Australia</p>	<p>Woodside:</p> <p>(1) confirmed a meeting with Tuna Australia to discuss various EPs and the industry position statement.</p> <p>(2,3) advised consultation regulations do not require entry into service agreements in order to engage in consultation.</p> <p>(4) Woodside respects that, for a relevant person, consultation is voluntary. Woodside advised Tuna Australia the level of feedback provided by an organisation, if any, was at the person or organisation’s discretion, and Woodside was open to suggestions from Tuna Australia on ways to improve efficiency and simplicity for feedback.</p> <p>(5) Woodside requested clarity on whether Tuna Australia would accept Section 15: Ethical Business Practices. Woodside advised Tuna Australia if the amendment was accepted, Woodside could work through Tuna Australia’s other points regarding the service agreement.</p> <p>(6) Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 25of the Environment</p>	<p>(1-3) Not required.</p> <p>(6) Woodside has assessed the potential for interaction with Commonwealth managed commercial fisheries in Section 4.6.2 of this EP and identified relevant persons in Appendix F, Table 1 of this EP in accordance with regulation 25(1) of the Environment Regulations.</p> <p>(4, 5, 7, 8, 9, 11, 12, 13,14, 15, 16) Not required.</p> <p>(10) Woodside considers that Tuna Australia has been given sufficient information and a reasonable period in which to make an informed assessment of the possible consequences of the activity on its functions, interests or activities, as</p>

<p>advised other energy companies had entered into the agreement.</p> <p>(5) In response to minor proposed amendments from Woodside to the service agreement, did not want changes made to Schedule 2; requested further details on the annual service including rationale for the payment proposed; did not agree to a fixed price; and did not agree on the current terms which had been changed in Item 2 of Schedule 1 and sought a two-year agreement. Tuna Australia also advised it was not against including anti-bribery and corruption clauses in the agreement but asked if it was the best place for it.</p> <p>(6) Was prepared to assist Woodside to ensure consultation for another EP was extended to all relevant persons</p> <p>(7) Stated focusing on historical fishing effort was a flawed assessment.</p> <p>(8) Had concerns about energy companies sourcing mailing lists from AFMA or elsewhere as some contact lists were outdated, inaccurate and not fit-for-purpose, compared to Tuna Australia's database which was up to date and accurate.</p> <p>(9) Offered to assist energy companies to genuinely and comprehensively meet consultation and reporting requirements.</p> <p>(10) Could not support the EP proposal as it believed Woodside had fallen short of genuine and comprehensive consultation.</p> <p>(11) Stated Woodside should advise Tuna Australia if it wished to progress with a services agreement and work collaboratively.</p> <p>(12) Was concerned Woodside was electing to cherry-pick on how to meet statutory requirements.</p> <p>(13) Advised to progress consultation, it wished to pause the process to obtain advice.</p> <p>(14) Welcomed comment from NOPSEMA on the content required for an EP to meet regulatory requirements.</p>	<p>Regulations that is consistent with NOPSEMA's guideline. Woodside advised Tuna Australia that Woodside's consultation process identified relevant persons and provided them with sufficient information and a reasonable period in which to provide feedback.</p> <p>(7) Woodside determined, and advised Tuna Australia, that although the Western Tuna and Billfish Fishery management area overlapped the Operational Area (for the unrelated EP), there had been no fishing effort in the Operational Area for at least the past 10 years. Despite this, Woodside chose to consult licence holders in the fishery.</p> <p>(8) Woodside obtains contact details of Commonwealth statutory fishing rights and fishing permit holders so that consultation is consistent with the Regulations, as per the expectation from AFMA that petroleum operators consulted with fishing operators about all activities and projects which may affect day-to-day fishing activities.</p> <p>(9) Woodside has developed a methodology for identifying relevant persons, in accordance with regulation 25of the Environment Regulations that is consistent with NOPSEMA's guideline. Woodside advised Tuna Australia that in addition to consulting individual licence holders, Woodside consulted relevant fishing industry associations and representative bodies such as Tuna Australia and the Commonwealth Fisheries Association. Woodside also consulted DAFF – Fisheries for this EP.</p> <p>(10) Woodside considers it has met its consultation obligations under the Environment Regulations and given Tuna Australia sufficient time and information to obtain input and to assist Woodside to confirm current measures or identify additional measures.</p> <p>(11) Woodside noted, and advised Tuna Australia, that the Offshore Environment Regulations did not require entry into service agreements in order to meet EP consultation requirements.</p> <p>(12) Woodside considers it has met its legislative and regulatory requirements in the development and implementation of an EP.</p> <p>(13) Woodside noted Tuna Australia's wish to pause the consultation process and advised it would continue to consult Tuna Australia and Commonwealth licence holders for proposed activities where relevant and as appropriate, and that consultation was voluntary and Tuna Australia could decide whether it wished to engage in the process or not.</p> <p>(14) Woodside noted that Tuna Australia welcomed comment from NOPSEMA on the content required for an EP to meet regulatory requirements.</p> <p>(15) Woodside advised Tuna Australia that it regularly updated contact details of individual licence holders to facilitate consultation.</p>	<p>described in Section 5.4 of this EP.</p> <p>Woodside considers the measures and controls described within this EP address the potential impact from the proposed activities on Tuna Australia's functions, interests or activities.</p> <p>No additional measures or controls are required.</p>
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<p>(15) There were many AFMA permit registers depending on the fishery and the permit register changed regularly as entitlements were sold and traded.</p> <p>(16) It had reviewed the FMA 1991 Act and Regulations and believed Woodside had been provided permit register contact details in error and was following up on the use of industry data with AFMA.</p> <p>Whilst feedback has been received, there were no objections or claims.</p>	<p>(16) Woodside noted Tuna Australia was engaging AFMA on the provision of permit register contact details under the <i>Fisheries Management Act 1991</i>, and Regulations.</p> <p>Woodside has provided consultation information to Commonwealth fishing operators in the area, as well as relevant representative bodies and fishing industry associations. Woodside has consulted AFMA, DAFF - Fisheries, CFA, SIV, VFA, Tuna Australia, and individual relevant licence holders.</p> <p>Woodside engages in ongoing consultation throughout the life of an EP. Woodside notes that further feedback may be received as part of ongoing consultation. Should feedback be received after the EP has been accepted, it will be assessed and, where appropriate, Woodside will apply its Management of Change and Revision process (see Section 9.8).</p>	
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RECORD OF CONSULTATION



Minerva Decommissioning and Field Management Environment Plan

Record of Consultation

Date: March 2024

Revision: 0

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1. Consultation

1.1 Consultation Information Sheet sent to relevant persons



CONSULTATION

INFORMATION SHEET

May 2023

ACTIVITY UPDATE – MINERVA DECOMMISSIONING ENVIRONMENT PLANS

OTWAY BASIN, SOUTH EAST AUSTRALIA

Overview

Woodside Energy (Victoria) Pty Ltd (Woodside) consults relevant persons in the course of preparing an Environment Plan (EP) to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that could be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. This is the intended outcome of consultation.

Woodside's aim is to ensure the activity is carried out in a manner that is consistent with the principles of Ecologically Sustainable Development (ESD), by which the environmental impacts and risks of the activity are reduced to As Low As Reasonably Practicable (ALARP) and of an acceptable level. We want relevant persons whose functions, interests or activities may be affected by the proposed activity to have the opportunity to provide feedback on our proposed activity, in accordance with the intended outcome of consultation.

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field (previously operated by BHP Petroleum Pty Ltd (BHP)), located in Commonwealth waters in Petroleum Licence VIC-L22 and Pipeline Licence VIC-PL33, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria and in water depths of approximately -50 – 60 m. The pipeline also tranverses State waters in Pipeline Licence VIC-PL33(V). Woodside plans to remove all subsea infrastructure and equipment from the seabed associated with the Minerva development in Commonwealth and State waters (**Figure 1**). Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle (**Figure 2**) in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth Waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State Waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from shore.

Decommissioning of the Minerva field is planned to be undertaken following acceptance of the EPs, with work anticipated to commence around early 2024, starting with P&A activities, subject to vessel availability and weather constraints. The P&A activities are expected to take approximately 2 months to complete, and infrastructure removal activities are expected to take between 1 – 2 months.

The P&A activities and subsea removal are required to be completed by 30 June 2025, as per NOPSEMA General Direction 831.

Following removal, Woodside proposes to dispose of infrastructure onshore in accordance with applicable requirements, assessing all options to reduce waste through reuse or recycling of recovered infrastructure.

The location of the Minerva infrastructure is summarised in **Table 1** and proposed decommissioning activities summarised in **Table 2**.

An EP for the P&A activities has previously been submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for assessment under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009*. The Minerva Field Decommissioning EP will be submitted to NOPSEMA and the Minerva (State Waters) Decommissioning EP will be submitted to the Department of Energy, Environment and Climate Action, Precincts and Regions (DEECA) under the *Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010*.

This Activity Update provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided.

Feedback from relevant persons as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

1 | Minerva Decommissioning Environment Plans | May 2023

Minerva decommissioning background

The offshore wells were drilled in late 2002 and the offshore and onshore pipeline was laid in 2003. The construction of the onshore Minerva Gas Plant was completed in December 2004, and the facilities were commissioned and commenced production in January 2005.

The Minerva field reached the end of its economic production life in September 2019. Immediately following the cessation of production, the Minerva wells were suspended and the subsea system was left in a preserved state (i.e. wells isolated and production system flushed of hydrocarbons) for final decommissioning. The onshore gas plant was sold for reuse to another Operator. A vessel-based campaign was conducted in Q1 2021 to disconnect flowlines from wells and install barrier plugs.

Communications with mariners

Well P&A: The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the four wells within VIC-L22. A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.

Facilities removal: The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route. It is intended that a temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during removal activities.

Commercial fishers and other marine users are permitted to use but should take care when entering the Operational Area and remain clear of the exclusion zone.

It is anticipated that vessels will operate 24 hours per day for the duration of the activities. The duration of these activities is subject to change due to project schedule requirements, vessel availability, weather or unforeseen circumstances.

Decommissioning assessment

Woodside has undertaken an assessment to identify potential risks to the marine environment and relevant persons, considering timing, duration, location and potential impacts arising from the planned activities. A number of mitigation and management measures will be implemented and are summarised in **Table 3**. Further details will be provided in the EPs.

In preparing the EPs, Woodside's intent is to minimise environmental and social impacts associated with the proposed activities, and we are seeking comments and input from relevant persons to inform our decision making and for the intended outcome of consultation (see above).

Joint Venture

Woodside is the Operator of Minerva field on behalf of the Joint Venture Partners. The participants are Woodside Energy (Victoria) Pty Ltd and Cooper Energy (MF) Pty Ltd.

We welcome your feedback by 14 June 2023.



Figure 2. Minerva Pipeline Bundle Arrangement



Figure 3. Typical Subsea Cutting Activity



Figure 4. Typical Subsea Equipment Recovery Activity

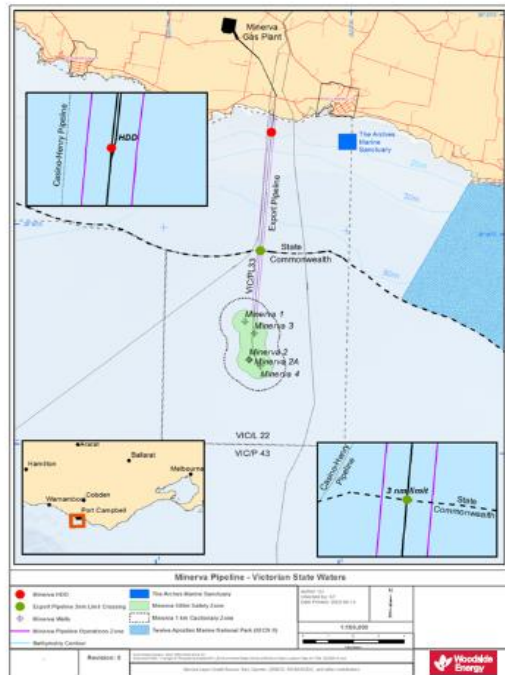


Figure 1. Minerva Location Map

Table 1. Activity summary

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign.</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability.</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells.</p>	
Exclusion zones	<p>A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.</p>	<p>A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities.</p>	
Estimated duration	-45 - 60 days	-15 - 30 days	-15 - 30 days
Location and water depth	-10.45 km south south-west of Port Campbell in -59 m water depth	-5.5 km to 10.45 km south south-west of Port Campbell in -53 m to 59 m water depth	-1.7 km to 5.5 km south south-west of Port Campbell in -15 m to 53 m water depth

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> 4.95 km of 10-inch steel pipeline 2 lengths of Chemical Injection Lines 1 length of Electro-Hydro Umbilical (EHU) 821 Piggyback clamps Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> 2 Umbilical Termination Assemblies and protection structures 2 Subsea Safety Isolation Valve Assemblies and protection structures 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> Two -85 m Gas Production Spools Four lengths of Chemical Injection Spools Two lengths of Electric Flying Leads (EFLs) Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> 5.0 km of 10-inch steel pipeline 2 lengths of Chemical Injection Lines 1 length of Electro-Hydro Umbilical (EHU) 832 Piggyback clamps Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
Vessels	<ul style="list-style-type: none"> Semi-submersible Mobile Offshore Drilling Unit (MODU). MODU supported by 2 - 3 offshore support vessels. 	<ul style="list-style-type: none"> Multipurpose CSV Supply Vessel 	<ul style="list-style-type: none"> Multipurpose CSV Supply Vessel Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required.
Distance to nearest marine park/mature reserve	<p>-8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>-6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>-5.44 km from The Arches Marine Sanctuary</p> <p>-4.74 km from the Twelve Apostles Marine National Park</p>	<p>-1.69 km from The Arches Marine Sanctuary</p> <p>-5 km from the Twelve Apostles Marine Park</p>

Table 2. Equipment locations (coordinates are GDA94)

Subsea Infrastructure	Latitude (South)	Longitude (East)
Minerva-1 well	-38° 42' 0.6.885"	142° 57' 17.278"
Minerva-2A well	-38° 42' 59.190"	142° 57' 25.742"
Minerva-3 well	-38° 42' 22.718"	142° 57' 32.997"
Minerva-4 well	-38° 43' 0.7368"	142° 57' 44.023"
Pipeline start	-38° 71' 89.530"	142° 96' 14.700"
Pipeline Commonwealth/State boundary point	-38° 40' 29.11"	142° 57' 39.42"
Pipeline end	-38° 62' 96.930"	142° 96' 48.470"

ENVIRONMENT THAT MAY BE AFFECTED (EMBA)

The environment that may be affected (EMBA) is the largest spatial extent where unplanned events could potentially have an environmental consequence. For this EP, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release from both the direct and indirect activities that are the subject of the EPs. The worst-case credible spill scenario for these EPs is loss of well containment during the well P&A activities.

The EMBA does not represent the predicted impact of the highly unlikely hydrocarbon release. Rather, the EMBA represents the merged area of many possible paths that a highly unlikely hydrocarbon release could travel depending on the weather and ocean conditions at the time of the release.

This means that in the highly unlikely event that a hydrocarbon release does occur, the entire EMBA will not be affected and the specific and minimal part of the EMBA that is affected will only be known at the time of the release.

There are two potential EMBA's for this EP, reflecting the activities and the different locations that the activity could occur.

Each of the EMBA's are presented in **Figure 5** below and summarised as:

- **Loss of Well Containment EMBA:** Primary activity of the Well P&A EP - P&A of 4 production/exploration wells by a MODU.
- **Vessel Spill Marine Diesel Oil (MDO) EMBA:** Primary activity for the Minerva Decommissioning EP and the Minerva (State Waters) Decommissioning EP- Recovery of subsea infrastructure using a CSV.

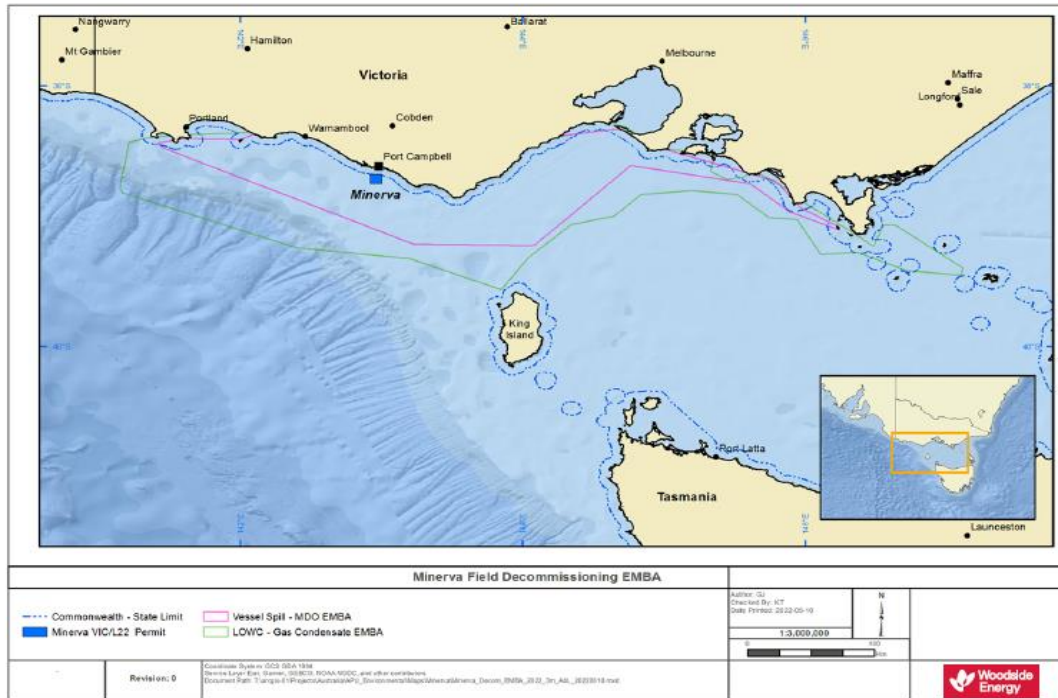


Figure 5. Environment that may be affected (EMBA) for the proposed decommissioning activities.

Mitigation and management measures

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from the decommissioning activities considering timing, duration, location.

A number of mitigation and management measures for the P&A and decommissioning of the Minerva field are outlined in **Table 3**. Further details will be provided in the EPs.

Table 3. Summary of key risks and/or impacts and management measures for the Minerva decommissioning activities. Key risks and/or impacts and management measure apply to activities occurring within the Operational Area.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Planned			
Physical presence and interactions with other marine users	<ul style="list-style-type: none"> The activities will be undertaken using a range of project vessels, namely a MODU and CSV, along with general support vessels. A 1,000 m exclusion zone will apply around the MODU and a 500 m exclusion zone around the CSV. There is an existing 500 m Petroleum Safety Zone (PSZ) around the wellheads. Presence of vessels in the safety and exclusion zones has the potential to result in interaction with third-party marine users. 	<ul style="list-style-type: none"> Interference with commercial shipping. Interference with commercial fishing activity. Displacement of recreational fishing activity. Interaction with existing oil and gas infrastructure. 	<ul style="list-style-type: none"> 1500 m operational area maintained around the wells and 1000 m along the pipeline corridor until removal. 1,000 m exclusion zone established around the MODU and 500 m exclusion zone around CSV. Activity support vessel(s) to communicate with third-party vessels to assist in maintaining the exclusion zones. Consultation with relevant persons for the consultation outcomes.
Physical presence – disturbance to benthic habitat from MODU anchoring, P&A and removal activities and ROV operations.	<p>Seabed disturbance may result from:</p> <ul style="list-style-type: none"> Removal of excess marine growth from infrastructure prior to removal using high-pressure water jetting. Infrastructure deburial and short-term wet parking of infrastructure may be required. MODU mooring and transponder installation for MODU positioning. Cutting and recovery of infrastructure on the seabed. Temporary equipment laydown or ROV operations. Post decommissioning sediment sampling. 	<ul style="list-style-type: none"> P&A and subsea removal activities including infrastructure deburial, marine growth removal, cutting and recovery of infrastructure, MODU mooring installation, ROV operations and temporary laydown of equipment may result in localised, temporary physical disturbance to benthic habitat and indirect disturbance to benthic habitats from sedimentation. Seabed disturbance as a result of these activities could occur within a localised radius of the Minerva wells and subsea infrastructure locations. Near this area, it is possible that benthic communities may be reduced or altered, leading to a highly localised impact to epifauna and infauna benthic communities. 	<ul style="list-style-type: none"> Use controlled recovery techniques to limit seabed disturbance. Subsea infrastructure to be marked on navigational charts until removal. Project specific mooring design analysis for anchored MODU to reduce the likelihood of anchor drag leading to seabed disturbance. All infrastructure and temporary wet parked equipment will be removed from the seabed on completion of the P&A and removal activities.
Routine Discharges: MODU and Project Vessels	<ul style="list-style-type: none"> Sewage and greywater will be discharged from MODU and project vessels. Bilge water, deck drainage, brine and cooling water may also be discharged. 	<ul style="list-style-type: none"> The main impact associated with ocean disposal of sewage and other organic wastes is eutrophication. Eutrophication occurs when the addition of nutrients, such as nitrates and phosphates, causes adverse changes to the ecosystem including short-term, localised impacts to water quality. No significant impacts are expected to water quality from planned discharges because of the minor quantities involved, the expected localised mixing zone, and the high level of dilution into the open water marine environment of the Operational Area. Similarly, although some marine fauna may transit the Operational Area, potential for impacts remains low due to the localised nature of discharges and rapid dilution. 	<ul style="list-style-type: none"> All routine marine discharges will be managed according to legislative and regulatory requirements.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Discharges: Decommissioning Activities	<ul style="list-style-type: none"> During infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment. Fluid includes treated seawater with residual hydrocarbon (less than 5ppm) and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water based hydraulic fluid. Chemical use may be required to remove marine growth and calcium/scale buildup. Routine P&A discharges including well kill and well clean up brine, water-based drilling fluids, cement and cementing fluids, residual wellbore fluids including residual hydrocarbon. Routine discharges of subsea control fluid, treated seawater and residual wellbore fluids during subsea tree preparation for P&A. Potential non-routine discharge of unused bulk product. 	<ul style="list-style-type: none"> Localised short-term impacts to water quality from the release of seawater ballast and residual chemicals and hydrocarbons. 	<ul style="list-style-type: none"> All chemicals intended or likely to be discharged into the marine environment reduced to ALARP using the Woodside chemical assessment process. Fluids contaminated with hydrocarbons will be treated to meet specified discharge limits prior to discharge or contained. If discharge specifications are not met the fluid will be returned to shore. During well kill activities, formation water and any wellbore fluids that are not able to flared, will be processed through a water filtration treatment package prior to discharge to the environment. No bulk cement, bentonite or barite will be discharged without a documented environmental assessment.
Light Emissions	<ul style="list-style-type: none"> Project vessels and MODU will use external lighting to navigate and conduct safe operations at night. Vessel lighting will also be used to communicate the vessel's presence to other marine users (i.e. navigation/warning lights). Light emissions may be generated by flaring during well P&A if required. Flaring is only expected to occur for short durations (hours). 	<p>Light emissions may affect fauna (such as marine turtles and birds) in two main ways:</p> <ol style="list-style-type: none"> Behaviour: artificial lighting has the potential to create a constant level of light at night that can override natural levels and cycles. Orientation: if an artificial light source is brighter than a natural source, the artificial light may override natural cues, leading to disorientation. <ul style="list-style-type: none"> During the decommissioning activities, there is potential a small number of seabirds and migratory shorebirds may be attracted to lighting on the MODU and project vessels. The Operational Area overlaps 10 seabird species foraging Biologically Important Areas (BIA). Potential impacts are expected to be limited to localised behavioural disturbance to isolated individuals, with no significant impact to seabird foraging. The Operational Area does not overlap any critical habitat for marine turtle species. Localised behavioural impacts to individual foraging marine turtles from light emissions generated during the activity are considered negligible, with no impact predicted at a community or population level. 	<ul style="list-style-type: none"> Lighting limited to the minimum required for navigational and safety requirements, except for emergency events. Flaring restricted to a duration necessary to perform the activity for well bleed-off. Implementation of a Seabird Management Plan and relevant controls in the National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds (2020).

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Noise Emissions	<ul style="list-style-type: none"> MODU and project vessels will generate noise both in the air and underwater due to the operation of thruster engines, propellers, and the use of cutting tools, or positioning equipment subsea. 	<p>Underwater noise may affect marine fauna, including marine mammals in three main ways:</p> <ol style="list-style-type: none"> By causing direct physical effects, including injury or hearing impairment. Hearing impairment may be temporary or permanent. Through disturbance leading to behavioural changes or displacement from important areas. The occurrence and intensity of disturbance is highly variable and depends on a range of factors relating to the animal and situation. By masking or interfering with other biologically important sounds (including vocal communication, echolocation, signals and sounds produced by predators or prey). <ul style="list-style-type: none"> Predicted noise levels from the MODU and project vessels may have short term behavioural impacts to Pygmy Blue Whales (PBW) and Southern Right Whales (SRW) transiting within or utilising a BIA. Marine turtle presence is expected to be infrequent, and potential impacts from predicted noise levels are not considered to be ecologically significant at a population level. Fish, sharks and rays may demonstrate avoidance or attraction behaviour to the noise generated by the activity. However, potential impacts from predicted noise levels are not considered to be ecologically significant at a population level. Woodside has proposed controls that when implemented will ensure activities will not have physical and/or observable biologically significant behavioural disturbance (including breeding, foraging and resting on migration) on these species. Noise levels are expected to be localised, with possible effects limited to, at worst, short-term avoidance behaviour. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for interactions with marine fauna to prevent adverse interactions. Decommissioning activities will be undertaken outside the Pygmy Blue Whale peak foraging season (January to March) Implementation of a Blue Whale and Southern Right Whale Adaptive Management Plan which details adaptive management measures for vessels operating on DP to reduce the risk of displacement of blue whale and southern right whales during the petroleum activities. It is intended that two dedicated trained Marine Mammal Observers will be stationed aboard project vessels to implement adaptive management measures (e.g. application of standoff distances, management of support vessel movements and resupply activities) upon detection of cetaceans within certain distances of decommissioning activities. Whale sightings to be reported to support greater environmental knowledge.
Atmospheric Emissions	<ul style="list-style-type: none"> Atmospheric emissions will be generated by the MODU and project vessels from internal combustion engines and incineration activities. Atmospheric emissions will be generated from venting of residual gas and contingent flaring from the MODU during P&A activities. 	<ul style="list-style-type: none"> Emissions from MODU and project vessels could result in temporary, localised reductions in air quality in the immediate vicinity of the vessels. Venting or flaring of hydrocarbon gas may result in a short-lived localised gas plume and a minor contribution to greenhouse gas emissions. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for marine air pollution. Flaring and venting of hydrocarbons is restricted to a duration necessary to perform the P&A activity.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Unplanned			
Unplanned Hydrocarbon Release - Loss of Well Containment during P&A	<ul style="list-style-type: none"> Accidental loss of wellbore fluids and hydrocarbons to the marine environment due to loss of well containment may occur, caused by failure of well barriers during the P&A activity. 	<ul style="list-style-type: none"> A loss of well containment and resulting blowout event is considered to be a highly unlikely event as it has occurred only very infrequently in the industry, and never in the Company's history. Modelling a loss of well containment was undertaken with the outcome, EMBA illustrated in Figure 5. Minerva condensate is a light, non-persistent natured hydrocarbon with a high tendency to evaporate. A release of gas condensate from a loss of well control has the potential to impact an array of receptors. Potential impacts across the whole EMBA were assessed including relevant ecological and socio-economic receptors. Given the limited volumes, low wax content and non-persistent nature of condensate, potential impacts are not expected to persist. The residual risk has been assessed to be tolerable. 	<p>Preventing loss of well containment</p> <ul style="list-style-type: none"> Wells to be permanently plugged in compliance with an accepted Well Operating Management Plan including implementation of barriers to prevent a loss of well containment. Checks completed during well P&A operations to establish minimum acceptable standard of well integrity. An approved Source Control Emergency Response Plan will be prepared prior to P&A, including feasibility and specific considerations for relief well. Subsea blow out preventer specification, installation and testing compliant with internal Woodside Standards and international requirements. <p>Spill Response arrangements</p> <ul style="list-style-type: none"> Arrangements supporting the Oil Pollution Emergency Preparation (OPEP) document (OPEP)/Emergency Response Manual (ERM) will be tested to ensure the OPEP can be implemented as planned. Emergency response activities would be implemented in line with the OPEP/ERM.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Unplanned Hydrocarbon Release - Vessel Collision	<ul style="list-style-type: none"> Project vessels will use marine diesel fuel. In the unlikely event of a vessel collision involving a project vessel or third-party vessels during the activity, there is potential for a release of marine diesel fuel if the collision has enough force to penetrate the vessel hull in the exact location of the fuel tank. 	<ul style="list-style-type: none"> In the highly unlikely event of a vessel collision causing a release of hydrocarbons, impacts to water quality and marine ecosystems could occur. Modelling of a surface release of marine diesel was undertaken at a representative location within the Operational Area Marine diesel is a relatively volatile, non-persistent natured hydrocarbon with up to 41% evaporating within the first 24 hours. A release of marine diesel from a vessel collision has the potential to impact an array of receptors. Potential impacts across the whole EMBA were assessed including relevant ecological and socio-economic receptors. Potential impacts are considered moderate to significant but are unlikely to persist due to the nature of the marine diesel. The residual risk has been assessed to be tolerable. 	<p>Preventing Vessel Collision</p> <ul style="list-style-type: none"> Comply with regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements. Consult with relevant persons so that other marine users are informed and aware, reducing the likelihood of a collision. Establish temporary exclusion zones around vessels which are communicated to marine users to reduce the likelihood of collision. Develop a management plan for simultaneous operations where multiple campaigns occur concurrently in the same Operational Area. <p>Spill Response Arrangements</p> <ul style="list-style-type: none"> Arrangements supporting the Oil Pollution Emergency Preparation document (OPEP)/Emergency Response Manual (ERM) will be tested to ensure the OPEP can be implemented as planned. Emergency response activities would be implemented in line with the OPEP/ERM.
Chemical and Hydrocarbon Spills (Deck Spills and Bunkering)	<ul style="list-style-type: none"> Accidental loss of chemicals or hydrocarbons to the marine environment during bunkering/ refuelling may occur caused by partial or total failure of a bulk transfer hose or fittings due to operational stress or other integrity issues. Accidental spills of chemicals or hydrocarbons from MODU or project vessel deck activities and equipment. 	<ul style="list-style-type: none"> Accidental loss of such chemicals from the MODU or vessels to the marine environment could occur as a result of failure of bulk transfer hoses or fittings during bunkering, spillage during handling, inadequate bunding and/ or storage, inadequate method of securing or tank/ pipework failure, leak from equipment or rupture or failure of ROV hydraulic hoses whilst underwater. Spills from bunkering/refueling or deck activities could result in short term, localised impacts to water quality or marine fauna in the immediate area surrounding the spill. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for the prevention of marine pollution. Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process Liquid chemical and fuel storage areas banded or secondarily contained when they are not being handled or temporarily moved. Maintain and locate spill kits in close proximity to hydrocarbon storage and deck areas for use to contain and recover deck spills Appropriate bunkering equipment kept and maintained, and contractors to follow procedures and requirements for bunkering and refuelling to reduce the likelihood of a spill.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Unplanned Discharge of Solid Hazardous/ Non-Hazardous Waste/ Equipment	<ul style="list-style-type: none"> Accidental, unplanned loss of hazardous or non-hazardous solid wastes/equipment to the marine environment may occur if dropped or blown overboard. 	<ul style="list-style-type: none"> The potential impacts of hazardous or non-hazardous solid wastes and equipment accidentally discharged to the marine environment include contamination of the environment as well as secondary impacts relating to potential contact of marine fauna with wastes. The temporary or permanent loss of waste materials/ equipment into the marine environment is not likely to have a significant environmental impact, based on the location of the Operational Area, the types, size and frequency of wastes that could occur, and species present. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for the prevention of marine pollution and handling of hazardous wastes. Implement a Waste Management Plan. Solid waste/equipment dropped to the marine environment will be recovered where safe and practicable to do so. Where retrieval is not practicable and/ or safe, material items (property) lost to the marine environment will undergo an impact assessment and will be added to the inventory for the title.
Unplanned Interaction with Marina Fauna	<ul style="list-style-type: none"> Accidental collision between project vessels and protected marine fauna. 	<ul style="list-style-type: none"> Vessel movements have the potential to result in accidental collisions between the vessel (hull and propellers) and marine fauna. The risk of vessel collision with marine mammals is present year-round but is seasonally elevated for species such as Pygmy Blue Whales during foraging periods and southern right whales when resting on migration (May – October). Given the short duration of activities within the Operational Area, and the slow speeds at which project vessels operate collisions with cetaceans are considered highly unlikely. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for interactions with marine fauna to reduce the likelihood of a collision occurring.
Disturbance to Seabed from Dropped Objects and Unplanned Anchor Drag	<ul style="list-style-type: none"> Accidental, unplanned dropping of objects overboard from project vessels during recovery operations. High energy weather conditions, occurring while the MODU is on station, can lead to excessive loads on the mooring lines, resulting in failure (either anchor(s) dragging or mooring lines parting). 	<ul style="list-style-type: none"> In the unlikely event of an object being dropped or mooring failure, potential environment effects should be limited to minor physical damage to seabed and benthic communities in a localised area. 	<ul style="list-style-type: none"> MODU and project vessel inductions include control measures and training for crew in dropped object prevention. Lost waste/ dropped objects will be recovered where safe and practicable to do so. Procedures for lifts, bulk transfers and cargo loading if an unplanned object release does occur. Project-specific Mooring Design Analysis and mooring system testing undertaken to reduce the likelihood of mooring failure or anchor drag.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Accidental Introduction of Invasive Marine Species (IMS)	<ul style="list-style-type: none"> Vessels transiting to the Operational Area may be subject to marine fouling whereby organisms attach to the vessel hull. Organisms can also be drawn into ballast tanks during onboarding of ballast water. IMS could also be present as biofouling on submersible equipment. 	<ul style="list-style-type: none"> There is potential for the transfer of IMS between the project vessels while in its current location within the Operational Area. 	<ul style="list-style-type: none"> Ballast water and biofouling will be managed according to regulatory requirements, including the Australian Ballast Water Management Requirements, and the Australian Biofouling Management Requirements, as applicable. Woodside's IMS risk assessment process will be applied to the MODU, project vessels and submersible equipment entering the Operational Area.
Indirect			
Waste Generation	<ul style="list-style-type: none"> Removal of the Minerva subsea infrastructure will result in the generation of waste products. 	<ul style="list-style-type: none"> Generation of waste products that require appropriate management. 	<ul style="list-style-type: none"> Waste generated on the MODU and project vessels, including recovered infrastructure will be managed in accordance with legislative requirements. Recovered infrastructure will be transported onshore by a licensed waste contractor for disposal including recycling and reuse opportunities. Infrastructure and resource recovery strategy that ensures waste is handled and disposed of in accordance with applicable legislation, monitors and tracks waste and sets KPIs for recycling and reuse of decommissioned infrastructure.

Feedback

If you would like to comment on the proposed activities outlined in this information sheet, or would like additional information, please contact Woodside before **14 June 2023** via:

E: Feedback@woodside.com

Toll free: 1800 442 977

You can subscribe on our website to receive Consultation Information Sheets for proposed activities: www.woodside.com/sustainability/consultation-activities.

Please note that stakeholder feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise.

Please note that your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the *Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010*.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

1.2 Summary Consultation Information Sheet



MINERVA DECOMMISSIONING

This is a summary of the activity in plain English. More detailed information can be found in Activity Update - Minerva Decommissioning Environment Plans.

Overview

Woodside is planning to remove all subsea infrastructure and equipment from the seabed for the Minerva Field, located in 50-60 m of water approximately 11 km south-southwest of Port Campbell, Victoria

A map of the location is shown below.



Background

The Minerva Gas Plant commenced production in 2005 and ceased in 2019. At that time, the Minerva wells were isolated and the production system flushed of hydrocarbons. In 2021, the flowlines were disconnected from the wells and barrier plugs installed.

Work Method

The work can be considered in three parts:

- Minerva plug and abandonment and field management**

Four wells are proposed to be permanently plugged with cement using a moored Mobile Offshore Drilling Unit (MODU) and the well infrastructure above the mudline is proposed to be removed. Other vessels may provide support for this activity. The field will be monitored and inspected, as required, until the equipment is removed. A temporary 1000 m exclusion zone will apply around the MODU and other project vessels. This work is estimated to take up to 60 days and must be completed by mid 2025.
- Minerva Field decommissioning in Commonwealth Waters**

The gas pipeline bundle and other subsea infrastructure is proposed to be removed. Hydraulic shears will be used to cut the flowline and equipment will be recovered to a Construction Support Vessel (CSV) by crane. This work is estimated to take up to 30 days and must be completed by mid 2025. Figure 1, Figure 2 and Figure 3 show some of the structures and equipment used to remove them.
- Minerva Field decommissioning in State Waters**

The gas pipeline bundle is proposed to be removed in State Waters, using hydraulic shears and supported by divers, where required. This work is proposed to be done at the same time as decommissioning in Commonwealth Waters.



Figure 1. Minerva Pipeline Bundle Arrangement

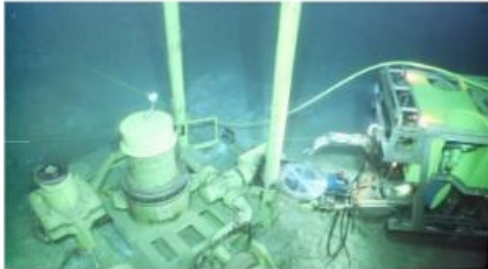


Figure 2. Typical Subsea Cutting Activity



Figure 3. Typical Subsea Equipment Recovery Activity

Environmental Impacts and Management

This work program includes Planned Activities but may also result in Unplanned Activities. Both Planned and Unplanned Activities may impact the environment. Woodside manages the work program to reduce impacts and risks to as low as reasonably practical.

Planned Activities are activities that Woodside knows will happen as part of this work program. For example, Planned Activities include other marine users being temporarily stopped from accessing the work area, and the marine vessels and drill rig used for the work may disturb the seabed, generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage), and other authorised waste.

Unplanned Activities are not planned as part of the work program, but may be the result of an accident, incident, or emergency situation. It is highly unlikely that there will be an Unplanned Activity. Unplanned Activities might include a spill of fuel or oil, a release from a well, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with marine animals, waste entering the environment and accidental introduction of invasive species from outside the region. Management measures will be in place to reduce the probability and impacts of these unplanned activities to as low as practical.

A table showing all planned and unplanned activities, potential impacts, and management measures for each is included in the Information Sheet.

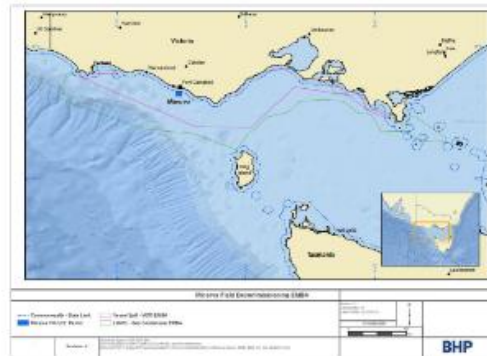
Environment that may be affected

The total area over which unplanned events could have environmental impacts is shown in the maps below. This is referred to as the environment that may be affected (EMBA). In the highly unlikely event such as a fuel spill from a vessel collision or an oil release from one of the wells while drilling, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.

There are two potential EMBA's for the Minerva decommissioning, in the event of:

- Loss of Well Containment during the plugging and abandonment of four production/exploration wells in the Minerva Field by a MODU
- Vessel Spill Marine Diesel Oil (MDO) during the recovery of subsea infrastructure in the Minerva Field using a CSV.

Figure 4 shows the two potential EMBA's.



Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with surveys like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside's work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Providing Feedback

If you have an interest in the area of the "environment that may be affected" (EMBA) by this work program and would like more information or any concerns, you can tell Woodside by calling 1800 442 977 or send an email to Feedback@woodside.com.au.

If you would prefer to speak to the government directly, they can be contacted on +61 (0)8 6188 8700 or send an email to communications@nopsema.gov.au.

Further Information

You can find the details Consultation Information Sheet for proposed activity on our website: <https://www.woodside.com/sustainability/consultation-activities>.

1.3 Newspaper Advertisements in The Australian, Herald Sun, Warrnambool Standard, Colac Herald and Cobden Times — 17 May 2023

ENVIRONMENT PLAN NOTICE

Woodside Energy (Victorian Pty Ltd (ACN 006 923 879) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

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Figure 1: Describes the Operational Area and the Environment That May Be Affected (EMBA) based on a composite of many different paths and further distance where a highly unlikely, unplanned event such as a hydrocarbon release could have an impact based on weather and ocean conditions.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the relevant EP.

Impacts associated with routine decommissioning activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessels, interaction with other marine users, decommissioning discharges (cement/chemicals/residual hydrocarbons), seabed disturbances, emissions from flaring/venting and other vessel impacts (noise, light, air emissions and marine discharges). Impacts that could occur due to an unplanned event include hydrocarbon releases (brine/gas, marine diesel or other vessel fuels), vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accidental loss of waste or other discharges.

Figure 1 illustrates indicative EMBA's to support persons or organisations understanding of whether their functions, interests or activities may be affected by the proposed activities, with detailed information found in Woodside's consultation information sheets.

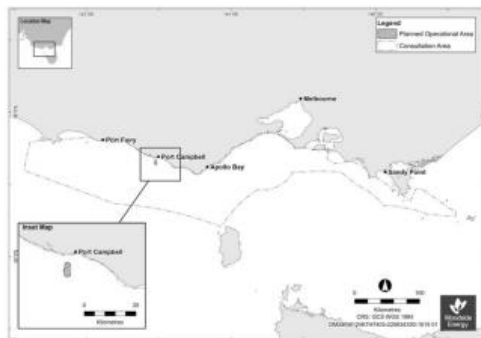


Figure 1 Minerva Field

Consultation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of EPs for the Minerva decommissioning activities. Consultation is designed to notify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activity on the environment.

Consultation will inform the development of each EP in accordance with environmental regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGSA) and support other regulatory submissions associated with the planned activities.

Detailed consultation information sheets are available at: www.woodside.com/sustainability/consultation-activities if you would like additional information about Minerva decommissioning activities. You can also subscribe via our website to receive future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact: Woodside below 14 June 2023 via:

E: Feedback@woodside.com

Toll free: 1800 442 977

8 THE AUSTRALIAN
WEDNESDAY, MAY 17, 2023
theaustralian.com.au

WORLD

Sudan's brutal war spirals into chaos

KHARTOUM One month since Sudan's conflict erupted, its capital is a desolate war zone where terrified families huddle at home as gun battles rage, while the western Darfur region has descended into deadly chaos.

Residents of Khartoum have endured weeks of desperate food shortages, power blackouts, communications outages and rising inflation. The capital of five million people, long a place of relative stability, is a shambles of fear and despair.

Chaired across the air on the airport tarmac, foreign embassies are shut and hospitals, banks, shops and schools have been ransacked by looters.

Violence also raged in El Geneina, the capital of West Darfur state, leaving hundreds killed and the health system in "total collapse", medical aid said.

Fighting has continued this week, with local explosions heard across Khartoum and thick smoke in the sky while warplanes dove anti-aircraft fire.

"The situation is becoming worse by the day," said a 37-year-old resident of southern Khartoum who did not wish to be named because of safety concerns.

"People are getting more and more scared because the two sides are becoming more and more violent."

Another witness reported "clashes with various types of weapons" in Omdurman, the capital's twin city.

Refugees escaped on April 15 between army chief Abdel Fattah el-Burhan and his former deputy, Mohamed Hamdan Dagalo, who leads the paramilitary Rapid Support Forces.

What remains of the government has retreated to Port Sudan about 1000 km away, the last for mass evacuations.

The UN says more than 200,000 people have been internally displaced by the fighting, and nearly 20 million live in fled for neighbouring countries.

There are no signs for the stability of the war-torn region.

"We've left on the street, in the sun," complained Hamdan Mohamed, who escaped the Khartoum area for Port Sudan. "We want the organisation to evacuate us from Sudan, because the country is totally devastated. There's no food, no work, nothing."

About 1000 people have been killed, mostly in and around Khartoum as well as the rump state of West Darfur, according to media.

Violence at the weekend in El Geneina killed at least 280, according to the Sudanese doctor's union.

"There was still heavy shelling on Sunday that hit my home, damaging a part of it and injuring one of my sisters," said El Geneina resident said. "Other houses around us were completely destroyed."

After a month of war, General Burhan declared he was fleeing the south of the Red Sea, analysts say, has interests in Sudan's gold mines.

General Burhan dismissed the central bank governor and the police director-general, while General Dagalo threatened an audit, according to the army chief would be "brought to justice and charged" publicly.



A man carries a child as refugees from Sudan cross into Ethiopia to escape the violence



Sudan was slowly reintegrating into the international community, before the general declared that transition with another coup in 2021.

The security breakdown has extended beyond Khartoum and Darfur to other regions. Ethnic violence has won't killed more than 50 people in West Kordofan and White Nile states.

The fighting has deepened the humanitarian crisis in Sudan, where one in three people already relied on humanitarian assistance before the war.

"Since then, aid agencies have been looted and at least 18 of their workers killed."

Diplomatic jitters have also been targeted. Jordan on Monday issued a condemnation after its Sfax embassy building "was stormed and attacked."

Across the Red Sea, in the Saudi Arabian city of Jeddah, more than 50 people have been reported injured.

By May 11, they had signed a commitment to respect humanitarian principles and allow unhindered aid.

Doctors Without Borders said food shortages in Darfur displacement camps meant "people have gone from three meals a day to just one."

Rome opens fresh probe into missing Vatican teen

ITALY, ROME

Rome prosecutors have opened a fresh investigation into the disappearance of a teenager 40 years ago and are calling for full collaboration from the Vatican.

Emanuela Orlandi, the 35-year-old daughter of a Vatican employee, was last seen leaving a music class in Rome on June 22, 1983. Decades of speculation followed over what happened to her, with suggestions that robbers, the secret services or a Vatican conspiracy were to blame, then she had been kidnapped.

The Orlandi family's lawyer Laura Spini said overnight on Monday that she had been told the fresh probe through Italian media reports and "it would certainly be welcome news."

The family has campaigned tirelessly for the truth and was its demands that led in part to the Vatican launching an inquiry into its most famous cold case in January.

Following that, Rome Public Prosecutor's Office is now also formally returning to investigate the Orlandi case. John's Corriere della Sera newspaper said.

It will be the third investigation by the Rome office, following ones from 1983-1992, and 2006-2015.

The Vatican has been accused of obstructing investigations over the decades.

The fresh Italian investigation was opened in part by former prosecutor Giancarlo Capaldi's claim that he had spoken during the last probe to two respondents at the Vatican who had promised to reveal the whereabouts of Orlandi's body, the Corriere said.

French Polynesia nuclear tests 'raised cancer risk'

PARIS

Polynesians exposed to fallout from France's nuclear tests in the South Pacific have a slightly heightened risk of developing thyroid cancer, a study suggests, using declassified military data filed in 2013.

France carried out 41 atmospheric nuclear weapon tests in French Polynesia between 1966 and 1975, exposing residents to fallout that has been associated with higher rates of thyroid cancer in the Pacific archipelago.

The study, published in the journal JAMA Network Open, used risk modeling to estimate that the nuclear tests were associated with between 6.6 per cent and 27 per cent of thyroid cancer in French Polynesians.

"This is the proportion of thyroid cancer attributable to the tests among all the cases of thyroid cancer that have or will develop in the people present at the time of the tests, in all islands combined," the study's lead author Florence Vaithianathan said.

The impact of the tests was "weak but not at all non-existent," said Dr de Vaithianathan, a radiation expert at France's INSERM medical research institute.

The study compared 195 people who were diagnosed with thyroid cancer between 1984 and 2016 in French Polynesia with a control group of 355 from the general population.

"This is the first study that uses confidential military reports declassified in 2013," Dr de Vaithianathan said.

Using the documents, meteorological data and interviews with the cancer patients, the researchers estimated the radioactive cloud produced by each nuclear test, and estimated the dose of radiation received in the thyroid of each participant.

The average radiation dose for each person was nearly five milligrays, a standard unit of radiation absorption. The scientists found "no significant association" between the radiation dose and the risk of thyroid cancer.

"The link was considered significant if the analysis only included atomic cancer requiring treatment."

France moved its nuclear tests underground in 1975, but continued conducting blasts in the Pacific until 1996.

During a visit to the capital, Papeete, in 2020, French President Emmanuel Macron acknowledged that France owes a "debt" to Polynesians for the nuclear tests.

Wednesday May 17, 2023 | Herald Sun

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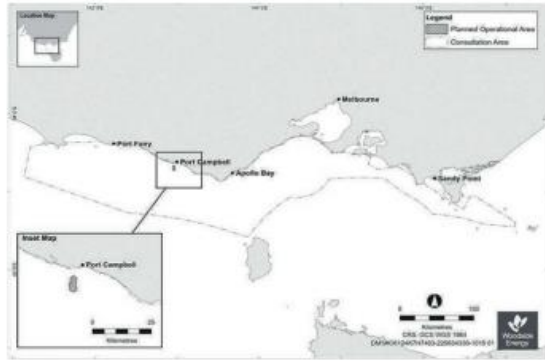


Figure 1 Minerva Field

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E: Feedback@woodside.com

Toll free: 1800 442 977

CLASSIFIEDS 49

Notices

Public Notices



PROPOSAL TO UPGRADE EXISTING OPTUS MOBILE PHONE BASE STATION WITH 5G AT THE FOLLOWING LOCATION

Leiston Park Library (The Hall), Building 853, Victoria College of Art Campus, 234 St Kilda Road, Southbank, VIC 3006 www.vcaa.com.au/3006023

The proposed upgrade to the existing facility consists of the following works, installation of an (8) new 5G panel antennas (no longer than 2.0m) on new masts, removal of an (8) existing panel antennas, installation of four (5) new panel antennas on new masts (no longer than 2.0m), stone cladding the building (Building facade), new overhead 24 pin power design, new feed access ladder design, power upgrade and reconfiguration of existing equipment on the facility and within the equipment shelter, including installation of existing Remote Radio Units on new masts and a GPS antenna.

Optus regards the proposed installation as exempt from requiring a Permit in accordance with the Telecommunications Facility - Victoria Planning Provisions (22-19-1) (2022) based on the description above.

In accordance with Section 7 of C564-2020 Mobile Phone Base Station Deployment Code, we invite you to provide feedback about the proposal. Further information and/or comments should be directed to: RPM Group, 1239 202 604, rmpgroup@broadband.com.au by 31st May, 2023. Further information may also be obtained from the website provided above.

1303/2023T

Cohuna WTP Clarifier Refurbishment

We invite tender submissions for the refurbishment of water treatment clarifiers in Cohuna. Scope includes concrete structural repairs, concrete sealing, pipework replacement, installation of new steel walkways.

Tenders Close
2pm on Thursday 22nd June 2023 at the Electronic Tender Box via the Tenders Vic website.

Tender documents can be downloaded at www.tenders.vic.gov.au by searching under 'Coliban Water'



www.coliban.com.au

PROPOSAL TO UPGRADE VODAFONE & OPTUS MOBILE PHONE BASE STATION AT EXISTING TELSTRA EXCHANGE BUILDING ROOFTOP AT 737-743 PUNY ROAD SOUTH YARRA VIC 3141 INCLUDING 5G

- The proposed 5G upgrade will consist of:
 - The installation of three (3) new Vodafone 5G antennas, each measuring no more than 2.0m in length)
 - The removal and installation of Remote Radio Units (RRUs).
 - The installation of ancillary equipment including GPS systems, antenna mounts, feeders, cabling, conduits and other associated equipment, and ancillary works, within the existing equipment shelter.

2. Vodafone regards the proposed installation as a Low Impact Facility under the Telecommunications (Low Impact Facilities) Determination 2013. (The Determination) based on the description above.

3. In accordance with Section 7 of C564-2020 Mobile Phone Base Station Deployment Code, we invite you to provide feedback about the proposal. Further information and/or comments should be directed to: Ben Lawry at Service Stream Limited, 0497 833 252, TPG.Submissions@servicestream.com.au or Level 3, Tower B, Zenith Centre 821 Pacific Highway, Chateau NSW 2067 by 5.00pm Wednesday 31 May 2023

4. If you would like to know more about this site, further information can be obtained from www.rmsa.com.au/5141004



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standard.net.au
Wednesday, May 17, 2023 THE STANDARD 17

Positions Vacant

Alansford Truck and Trailer, and, Progress Transport Services have an exciting opportunity for a Diesel Mechanic Apprentice to join our team. We have 2 Apprenticeships available - One at each workshop. Consideration will also be given to any 2nd, 3rd or 4th Year Apprentices

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- Energetic individual who shows initiative and commitment.
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- Comprehensive on the job training with industry experts
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A full-time position will be offered. All applications will be strictly confidential.

For further details contact:
E: admin@progresstransportservices.com.au

Public Notices

QUARTERLY GENERAL MEETING
For all members will be held upstairs at Flying Horse Bar & Brewery
Wednesday May 31, 2023 at 7:30pm
Please submit any agenda items in writing by Friday May 26 to manager@premierspeedway.com.au

Road Closure
Friday 19 May
7:00am – 2:00pm
Tozar Road and Moore Street
Contact ☎ 03 5562 2211 or www.warrnamboolracing.com.au.
For more information.

Message

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Estimated duration:	Approximately 2 months		
Consultation commenced	May 2023		
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 33%;">First EP submission to NOPSEMA</td> <td style="width: 33%;">Not yet submitted</td> </tr> </table>	First EP submission to NOPSEMA	Not yet submitted
First EP submission to NOPSEMA	Not yet submitted		

Minerva Plug and Abandonment and Field Management Environment Plan

Activity summary:	The permanent plugging, abandonment and removal of the four Minerva wells by placing cement plugs in the wells to prevent hydrocarbon release and ongoing field management until decommissioning is completed		
Location:	Approximately 9 km south south-west of Port Campbell, Victoria		
Commencement timing:	Anticipated around early 2024, pending approvals, vessel availability and weather constraints		
Estimated duration:	Approximately 45-60 days		
Consultation commenced	April 2022		
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 33%;">First EP submission to NOPSEMA</td> <td style="width: 33%;">June 2022</td> </tr> </table>	First EP submission to NOPSEMA	June 2022
First EP submission to NOPSEMA	June 2022		

Figure 1: Describes the Operational Areas and the Environment That May Be Affected (EMBA) based on a composite of many different paths and furthest distance where a highly unlikely, unplanned event such as a hydrocarbon release could have an impact based on weather and ocean conditions.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the relevant EP.

Impacts associated with routine decommissioning activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessels, interaction with other marine users, decommissioning discharges (cement/chemicals/residual hydrocarbons), seabed disturbance, emissions from flaring/venting and other vessel impacts (noise, light, air emissions and marine discharges). Impacts that could occur due to an unplanned event include hydrocarbon releases (krudelags, marine diesel or other vessel fuels), vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accidental loss of waste or other discharges.

Figure 1 illustrates indicative EMBA to support persons or organisations understanding of whether their functions, interests or activities may be affected by the proposed activities, with detailed information found in Woodside's consultation information sheets.

Consultation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of EPs for the Minerva decommissioning activities. Consultation is designed to notify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activity on the environment.

Consultation will inform the development of each EP in accordance with environmental regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGSA) and support other regulatory submissions associated with the planned activities.

Detailed consultation information sheets are available at: www.woodside.com/sustainability/consultation-activities if you would like additional information about Minerva decommissioning activities. You can also subscribe via our website to receive future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before **14 June 2023** via:

E: Feedback@woodside.com Toll free: 1800 442 977

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PUBLIC NOTICES

THE COLAC HERALD / KFC FOOTY TIPPING CHALLENGE – HOW TO PLAY

Part 1 –

Correctly tip the winner of the first game of the round and also the exact winning margin. The first correct entry drawn will win a KFC 21-Piece Bucket from KFC Colac.

Part 2 –

- Simply circle your AFL tips and your CDFNL and GFL tips for the forthcoming round.
- Be sure to write down all AFL tips – Incomplete forms will be ruled ineligible.
- The winner will be the first correct entry drawn with all AFL, CDFNL and GFL tips correct.
- A drawn game will not be marked as correct unless tipped as a draw.
- Enter name, address and phone number.
- You may enter as many times as you wish – Photocopied entry forms will be ruled ineligible. Facsimile entry forms will be ruled ineligible.
- Place your entry in the boxes provided at either **KFC Colac, Murray Street, Colac** or the **Colac Herald, 37-41 Bromfield Street, Colac**.
- The judges decision is final and no correspondence will be entered into.
- Employees of *The Colac Herald* and KFC Colac are ineligible to enter.
- Entries close at **4pm the day of the first game of the round.**

NEED TO SAY THANK YOU?

HAVE YOUR THANK YOU CARDS PRINTED WITH US.



MEETINGS

Colac Swimming Club Inc.
AGM
Monday, May 29 6.00pm
 at **Bluewater Centre**
 Hearn Street, Colac
ALL WELCOME

AGM
Saturday, May 20th 10am
Presentation of Club Championship winners for 22/23 seasons
followed by light luncheon
 Colac Central Bowling Club
 115 Wilson Street, Colac

POSITIONS VACANT

Medical Receptionist

Part-time
 A position is available for a motivated person to join our practice team.
 30 Hrs – 4 days per week

We are looking for someone with Strong computer and telephone skills, who is honest, reliable and empathetic. Exceptional interpersonal and communication skills together with the ability to work independently or in a team environment may make you an ideal candidate.

If you require more information, please contact us.

Apply with CV and Reference By 5pm, Monday May 22nd 2023.

To Glenda McIveen – Practice Manager
Robinson Street Medical Centre
 7 Robinson St, Camperdown Vic 3260
Email: rsmc@swarh.vic.gov.au
Phone: 03 5593 7070

DO YOUR INVOICE BOOKS NEED TO BE REORDERED OR DESIGNED ?

CALL IN AND SEE OUR TEAM



TIME FOR NEW BUSINESS CARDS?

CALL IN AND SEE OUR TEAM



ENVIRONMENT PLAN NOTICE

Woodside Energy (Victoria) Pty Ltd (ACN 006 923 879) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

Minerva Field Decommissioning Environment Plan (EP) and Minerva (State Waters) Decommissioning EP

Activity summary:	Removal of subsea infrastructure above the mudline, including 10-inch gas pipeline bundle in Commonwealth and State waters		
Location:	Approximately 9 km south south-west of Port Campbell, Victoria		
Commencement timing:	Anticipated around second half of 2024, pending approvals, vessel availability and weather constraints		
Estimated duration:	Approximately 2 months		
Consultation commenced	May 2023	First EP submission to NOPSEMA	Not yet submitted

Minerva Plug and Abandonment and Field Management Environment Plan

Activity summary:	The permanent plugging, abandonment and removal of the four Minerva wells by placing cement plugs in the wells to prevent hydrocarbon release and ongoing field management until decommissioning is completed		
Location:	Approximately 9 km south south-west of Port Campbell, Victoria		
Commencement timing:	Anticipated around early 2024, pending approvals, vessel availability and weather constraints		
Estimated duration:	Approximately 45-60 days		
Consultation commenced	April 2022	First EP submission to NOPSEMA	June 2022

Figure 1: Describes the Operational Areas and the Environment That May Be Affected (EMBA) based on a composite of many different paths and furthest distance where a highly unlikely, unplanned event such as a hydrocarbon release could have an impact based on weather and ocean conditions.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the relevant EP.

Impacts associated with routine decommissioning activities include the physical presence of a Mobile Offshore Drilling Unit (MODU) and vessels, interaction with other marine users, decommissioning discharges (cement/chemicals/residual hydrocarbons), seabed disturbance, emissions from flaring/venting and other vessel impacts (noise, light, air emissions and marine discharges). Impacts that could occur due to an unplanned event include hydrocarbon releases (crude/gas, marine diesel or other vessel fuels), vessel collisions with marine fauna, additional seabed disturbance, introduced marine species, accidental loss of waste or other discharges.

Figure 1 illustrates indicative EMBA's to support persons or organisations understanding of whether their functions, interests or activities may be affected by the proposed activities, with detailed information found in Woodside's consultation information sheets.

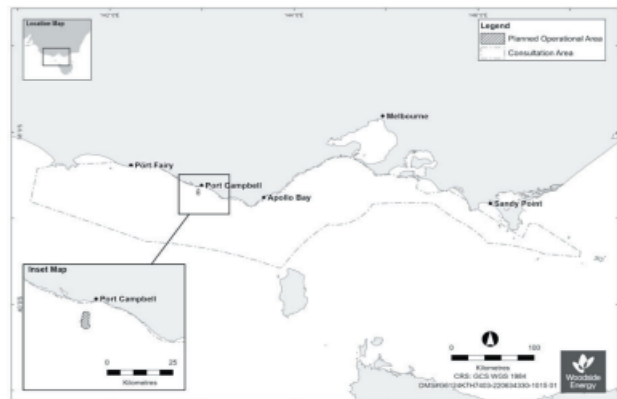


Figure 1 Minerva Field

Consultation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of EPs for the Minerva decommissioning activities. Consultation is designed to notify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activity on the environment.

Consultation will inform the development of each EP in accordance with environmental regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) and support other regulatory submissions associated with the planned activities.

Detailed consultation information sheets are available at: www.woodside.com/sustainability/consultation-activities if you would like additional information about Minerva decommissioning activities. You can also subscribe via our website to receive future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before **14 June 2023** via:

E: Feedback@woodside.com
 Toll free: 1800 442 977

Classifieds

Telephone: 5593 1888

Positions Vacant

geni
Aged & Disability Support Workers

We are looking for part-time employees based across the Corangamite Shire. Assist participants with a range of daily routine activities. Hourly rate starting at \$30.46 per hour

Apply online at:
<https://applynow.net.au/jobs/GENU3269>
 OR contact Nikki at nikki.gilbertson@genu.org.au for more information.

HARDWARE AND RURAL MERCHANDISE SALES POSITION

E & RA Parlour Home Hardware are seeking a self-motivated and well organised person to join their supportive and friendly team in Simpson - commencing June 2023.

The potential candidate must have the following attributes:

- Knowledge in hardware and rural merchandising;
- Excellence in customer service with attention to detail;
- Computer skills including using accounting and POS software;
- Training can be provided for stock ordering, receipt and invoicing procedures.

Ideally this position is full-time with Saturday morning work (on a rostered basis only), however flexible hours can be negotiated for the right candidate.

Applications in writing to parlours@bigpond.com by Monday May 29, 2023.

For enquiries phone Richard Parlour on 55943208.

Positions Vacant

tff THE TYRE FACTORY WARRNAMBOOL

QUALIFIED EXPERIENCED AUTOMOTIVE TECHNICIAN

- Full-time (with overtime available when work load permits)
- Specialising in, light vehicle, SUV & 4WD of all brands.
- Saturday mornings (on a roster fitting tyres)
- Able to work unsupervised but within a team environment
- Full car license
- Friendly/Clean appearance
- Fit and healthy

Only experienced applicants as stated to apply, all applications are to be forwarded to Geoff in person or via email, 180 Raglan Parade Warrnambool or warrnambool@tff.com.au

Positions Vacant

Robinson Street Medical Centre
MEDICAL RECEPTIONIST
Part-time

A position is available for a motivated person to join our practice team.
30 hrs - 4 days per week

We are looking for someone with strong computer and telephone skills, who is honest, reliable and empathetic.

Exceptional interpersonal and communication skills together with the ability to work independently or in a team environment may make you an ideal candidate.

If you require more information, please contact us.

Apply with CV and Reference By 5pm, 22nd May 2023.
To Glenda McIlveen - Practice Manager,
 Robinson Street Medical Centre
 7 Robinson St, Camperdown 3260
Email: rsmc@swarh.vic.gov.au
Ph: 5593 7070

WDCN Journalists
(Graded or opportunity for cadetship)

Exciting opportunities for a journalist/writer exists at Western District Newspapers P/L.

We are seeking persons with creative flair and excellent organisational skills. The ability to communicate well and work within deadlines to produce quality and accurate editorial content is essential.

You must also have excellent customer service and computer skills. Ideally you will possess a good knowledge of local issues and are interested in and have a strong desire to help our wonderful community.

The following tasks relate to this position:

- Help to co-ordinate editorial content for each edition
- General news/sports reporting
- Community news gathering
- Feature writing
- Developing key contacts throughout the community.

A "can do" attitude is also a must, as is the need to be part of a team.

Interested? Then don't hesitate, forward your application letter, resume and any other relevant documents to: editor@wdnews.com.au

Public Notices

ENVIRONMENT PLAN NOTICE

Woodside Energy (Victoria) Pty Ltd (ACN 006 923 879) is proposing to conduct decommissioning activities in Commonwealth waters, as described below:

Minerva Field Decommissioning Environment Plan (EP) and Minerva (State Waters) Decommissioning EP

Activity summary:	Removal of subsea infrastructure above the mudline, including 10-inch gas pipeline bundle in Commonwealth and State waters	
Location:	Approximately 9 km south south-west of Port Campbell, Victoria	
Commencement timing:	Anticipated around second half of 2024, pending approvals, vessel availability and weather constraints	
Estimated duration:	Approximately 2 months	
Consultation commenced	May 2023	First EP submission to NOPSEMA Not yet submitted

Minerva Plug and Abandonment and Field Management Environment Plan

Activity summary:	The permanent plugging, abandonment and removal of the four Minerva wells by placing cement plugs in the wells to prevent hydrocarbon release and ongoing field management until decommissioning is completed	
Location:	Approximately 9 km south south-west of Port Campbell, Victoria	
Commencement timing:	Anticipated around early 2024, pending approvals, vessel availability and weather constraints	
Estimated duration:	Approximately 45-60 days	
Consultation commenced	April 2022	First EP submission to NOPSEMA June 2022

Figure 1: Describes the Operational Areas and the Environment That May Be Affected (EMBA) based on a composite of many different paths and furthest distance where a highly unlikely, unplanned event such as a hydrocarbon release could have an impact based on weather and ocean conditions.

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in the relevant EP.

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Figure 1 illustrates indicative EMBA's to support persons or organisations understanding of whether their functions, interests or activities may be affected by the proposed activities, with detailed information found in Woodside's consultation information sheets.

Figure 1 Minerva Field

Consultation Participation and Feedback

Woodside is seeking to consult with relevant persons to inform the preparation of EPs for the Minerva decommissioning activities. Consultation is designed to notify and obtain input from relevant persons to assist Woodside identify measures to lessen or avoid potential adverse effects of the proposed activity on the environment.

Consultation will inform the development of each EP in accordance with environmental regulations administered by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) under the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) and support other regulatory submissions associated with the planned activities.

Detailed consultation information sheets are available at: www.woodside.com/sustainability/consultation-activities if you would like additional information about Minerva decommissioning activities. You can also subscribe via our website to receive future information on proposed activities.

If you would like to comment on the proposed activities outlined above, please contact Woodside before **14 June 2023** via:

E: Feedback@woodside.com
 Toll free: 1800 442 977

1.4 Email sent to Australian Border Force (ABF) — 31 May 2023

Dear stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	

Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPs) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after

	<p>campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<p>deburial using a control flow excavator (CFE) tool.</p> <ul style="list-style-type: none"> • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
<p>Vessels</p>	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving

	<ul style="list-style-type: none"> • MODU supported by 2 – 3 offshore support vessels 		operations be required
Distance to nearest marine park/nature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.4.1 Email sent to Australian Border Force (ABF) – 22 June 2023

Dear stakeholder

Woodside previously consulted you (see email below) on Woodside’s plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).

- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.5 Email sent to Department of Industry, Science and Resources (DISR) – 31 May 2023

Dear stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
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Minerva Field Decommissioning EP

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- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

	Support Vessel (CSV). Ongoing field management activities (equipment monitoring and inspection).		
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days

<p>Location and water depth</p>	<p>~10.45 km south south-west of Port Campbell in ~59 m water depth</p>	<p>~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth</p>	<p>~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth</p>
<p>Infrastructure</p>	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<p>equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/nature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore

Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.5.1 Email sent to Department of Industry, Science and Resources (DISR) – 22 June 2023

Dear stakeholder

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.6 Email sent to Australian Energy Producers (AEP) (formerly APPEA) – 31 May 2023

Dear stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as

part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	

Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p>

	<p>facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Assemblies and protection structures</p> <ul style="list-style-type: none"> • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
<p>Vessels</p>	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel

	<p>Drilling Unit (MODU).</p> <ul style="list-style-type: none"> • MODU supported by 2 – 3 offshore support vessels 		<ul style="list-style-type: none"> • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
<p>Distance to nearest marine park/nature reserve</p>	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.6.1 Email sent to Australian Energy Producers (AEP) (Formerly APPEA) — 22 June 2023

Dear stakeholder

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.7 Email sent to Australian Fisheries Management Authority (AFMA) — 31 May 2023

Dear AFMA

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline	Removal of the pipeline bundle within State waters.

	<p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>structures and stabilisation materials.</p>	<p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	
Exclusion zones	<p>A temporary 1,000 m exclusion zone will apply around the MODU and the associated project</p>	<p>A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities</p>	

	vessels during P&A activities.		
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.7.1 Email sent to Australian Fisheries Management Authority (AFMA) — 22 June 2023

Dear AFMA

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.8 Email sent to Australian Hydrographic Office and Australian Maritime Safety Authority (AHO/AMSA) — 31 May 2023

Dear AHO/AMSA

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p>	

	vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	2 x production wells, including xmas tree completion. 2 x exploration wells. The P&A covers the removal of well	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines 	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines

	<p>infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. 	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

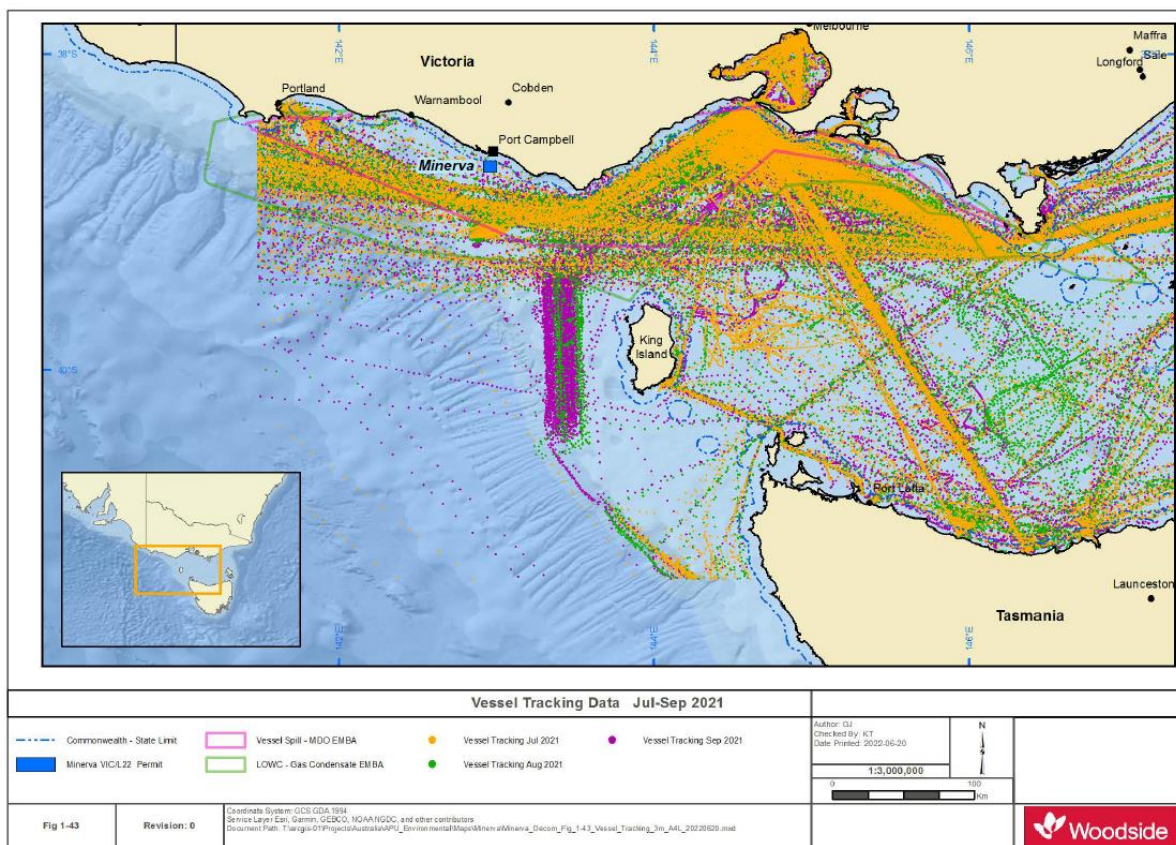
Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback



Vessel tracking map sent as attachment

1.8.1 Email sent to Australian Maritime Safety Authority (AMSA) – Marine Safety – 23 June 2023

Dear AMSA

Woodside previously consulted you (see email below) on Woodside’s plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with

an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.

- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.9 Email sent to Australian Maritime Safety Authority (AMSA) – Marine Pollution – 31 May 2023

Dear [REDACTED]

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

	Ongoing field management activities (equipment monitoring and inspection).		
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPs) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port	~5.5 km to 10.45 km south south-west of Port	~1.7 km to 5.5 km south southwest of Port

	Campbell in ~59 m water depth	Campbell in ~53 m to 59 m water depth	Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.9.1 Email sent to AMSA – Marine Pollution – 22 June 2023

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.9.2 Email sent to AMSA – Marine Pollution – 11 December 2023

Dear [REDACTED]

Further to the correspondence that AMSA has previously received (below) regarding the preparation of three Environment Plans (EPs) for the Minerva decommissioning activities, Woodside would like to offer AMSA the opportunity to review or provide comment on the activity-specific Oil Pollution First Strike Plans. Please note that these assets were previously operated by BHP Petroleum Pty Ltd. (BHP) and, as such, AMSA may have received previous consultation materials and draft plans for this activity. Following the merger of BHP and Woodside, the EPs and Oil Pollution First Strike Plans have now been revised to align to Woodside's approaches and processes.

Information is presented as follows:

- A Consultation Information Sheet providing information on the proposed activities is available [here](#). This is a combined Information Sheet addressing both the Commonwealth and State operations for Minerva decommissioning activities.
- Oil Pollution First Strike Plans for each of the three EPs are also attached. These will form part of each approval submission in accordance with (as relevant): the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth); the *Victoria Offshore Petroleum and Greenhouse Gas Storage Act 2010*; and the *Victoria Offshore Petroleum and Greenhouse Gas Storage Regulations 2021*.

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plans. The two Commonwealth EPs will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). The State waters EP will be submitted to Earth Resources Regulation (ERR) branch of the Department of Energy, Environment and Climate Action (DEECA) for acceptance in accordance with the *Victoria Offshore Petroleum and Greenhouse Gas Storage Act 2010* and the *Victoria Offshore Petroleum and Greenhouse Gas Storage Regulations 2021*.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or ERR upon submission of the Environment Plan in order for this information to remain confidential to the respective regulatory body.

Many thanks,

1.10 Email sent to Department of Agriculture, Fisheries and Forestry (DAFF) – Biosecurity and Fisheries – 31 May 2023

Dear DAFF – Biosecurity and Fisheries

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:
Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP

	Field Management EP		
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	

	around each of the wells.		
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

	Marine National Park (Minerva-1 well)		
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.10.1 Email sent to DAFF – Biosecurity and Fisheries — 23 June 2023

Dear DAFF – Biosecurity and Fisheries

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.

- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.11 Email sent to relevant Victorian shire councils — 31 May 2023

- Bass Coast Shire
- Colac Otway Shire
- Corangamite Shire Council
- City of Greater Geelong
- Mornington Peninsula Shire
- Moyne Shire
- Borough of Queenscliffe
- South Gippsland
- Surf Coast Shire
- Warrnambool City Council

Dear *(each Shire individually addressed)*

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.

- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable.

Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells). Removal of wellhead and	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

	<p>subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>		
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	
Exclusion zones	<p>A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.</p>	<p>A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities</p>	

Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.11.1 Email sent to relevant Victorian shire councils — 23 June 2023

- Bass Coast Shire
- Colac Otway Shire
- City of Greater Geelong
- Mornington Peninsula Shire
- Moyne Shire
- Borough of Queenscliffe
- Warrnambool City Council

Dear (*relevant shire*)

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.12 Email sent to tour operators and community groups — 31 May 2023

- Great Ocean Road Coast and Parks Authority
- Great Ocean Road Regional Tourism
- Twelve Apostles Tourism and Business Group

Dear *(each tour operator or community group individually addressed)*

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p>	

	approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	<p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	2 x production wells, including xmas tree completion. 2 x exploration wells.	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines

	<p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. 	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.12.1 Email sent to tour operators and community groups — 23 June 2023

- Great Ocean Road Coast and Parks Authority
- Great Ocean Road Regional Tourism
- Twelve Apostles Tourism and Business Group

Dear (*organisation name*)

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15–60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.13 Email sent to local conservation groups — 31 May 2023

- Apollo Bay Landcare
- Otway Climate Emergency Action Network (OCEAN)
- Otway Water
- Warrnambool Coastcare Landcare Network

Dear (each local conservation group individually addressed)

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025,</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p>	

	pursuant to General Direction 831.	Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered</p>

	<p>may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<p>for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.13.1 Email sent to local conservation groups — 23 June 2023

- Apollo Bay Landcare
- Otway Climate Emergency Action Network
- Otway Water
- Warrnambool Coastcare Landcare Network

Dear (each local conservation group individually addressed)

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.14 Email sent to Titleholders (Beach Energy, Cooper Energy and Conoco Phillips) — 31 May 2023

Dear Titleholders

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP

	Field Management EP		
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	

	around each of the wells.		
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

	Marine National Park (Minerva-1 well)		
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.14.1 Email sent to Titleholders (Beach, Cooper Energy and Conoco Phillips) — 23 June 2023

Dear Titleholder

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.

- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.15 Email sent to Department of Defence (DoD) – 31 May 2023

Dear Department of Defence

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). **A defence zone map is also attached**. You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>

	monitoring and inspection).		
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth

<p>Infrastructure</p>	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		<p>leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool.</p> <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

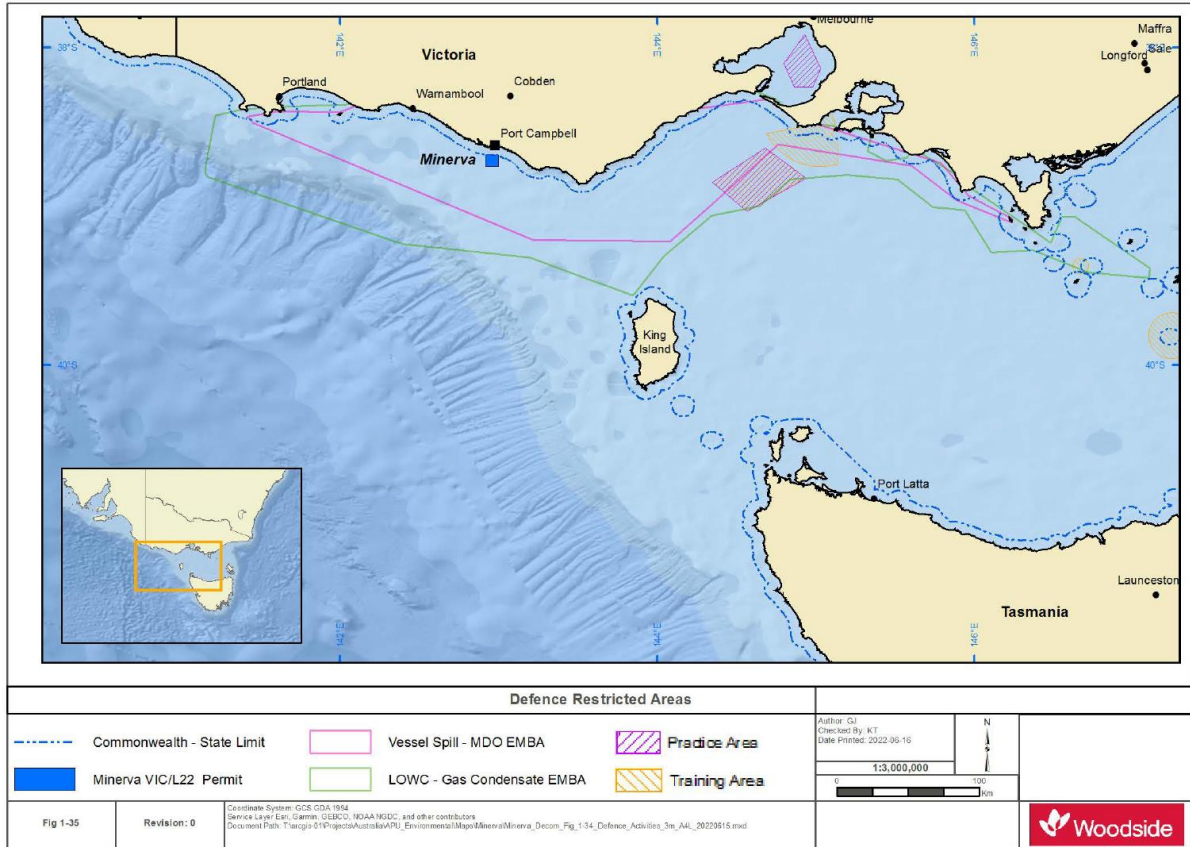
Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback



Defence zone map sent as attachment

1.15.1 Email sent to Department of Defence (DoD) — 23 June 2023

Dear Department of Defence

Woodside previously consulted you (see email below) on Woodside’s plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.16 Email sent to relevant ports — 31 May 2023

- Port of Melbourne
- Port of Hastings
- Port of Warrnambool

Dear *(individual port named)*

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.

- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells). Removal of wellhead and subsea trees, by	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

	<p>the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>		
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	
Exclusion zones	<p>A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.</p>	<p>A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities</p>	

Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.16.1 Email sent to relevant ports — 23 June 2024

- Port of Melbourne
- Port of Hastings
- Port of Warrnambool

Dear *individual port inserted*

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.17 Email sent to Department of Energy, Environment and Climate Action (DEECA), Earth Resources Regulator | Resources Victoria — 1 June 2023

Dear [REDACTED]

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p>	

	vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	<p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines

	<p>infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. 	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.17.1 Email sent to Department of Energy, Environment and Climate Action (DEECA) Earth Resources Regulator | Resources Victoria — 23 June 2023

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.18 Email sent to Department of Climate Change, Energy, the Environment and Water (DCCEEW) — 2 June 2023

Dear DCCEEW

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of

Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). **Also attached is a list of shipwrecks in Commonwealth waters within the EMBA.** You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)

Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated

	<p>activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<p>Vehicle (ROV) in the shallow water.</p>
<p>Vessels</p>	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required

<p>Distance to nearest marine park/mature reserve</p>	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well) ~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary ~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary ~5 km from the Twelve Apostles Marine Park</p>
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.18.1 Email sent to DCCEEW — 23 June 2023

Dear DCCEEW

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.19 Email sent to Victorian fishery stakeholders – 2 June 2023

- Victorian Fishing Authority (VFA)
- Apollo Bay Fisherman's Co-operative
- South Eastern Professional Fishermen's Association Inc
- Victoria Rock Lobster Association (VRLA)

Dear Fishery Stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15–60m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:
Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A 500 m temporary exclusion zone will be in place around the survey vessels to manage vessel movements. There are no restrictions to other vessels within the operational area apart from being advised to take care during the survey vessel activities and to maintain the 500 m exclusion zone around those vessels. Once the decommissioning activities are completed, the petroleum safety zones and any exclusion zones will no longer be in place.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	

Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPs) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after

	<p>campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<p>deburial using a control flow excavator (CFE) tool.</p> <ul style="list-style-type: none"> • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
<p>Vessels</p>	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving

	<ul style="list-style-type: none"> • MODU supported by 2 – 3 offshore support vessels 		operations be required
Distance to nearest marine park/mature reserve	~8.5 km from The Arches Marine Sanctuary (Minerva-1 well) ~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)	~5.44 km from The Arches Marine Sanctuary ~4.74 km from the Twelve Apostles Marine National Park	~1.69 km from The Arches Marine Sanctuary ~5 km from the Twelve Apostles Marine Park
Relevant Fisheries:	Victorian fisheries <u>Operational area and EMBA:</u> Victorian Rock Lobster Victorian Giant Crab Abalone Wrasse Snapper		

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.19.1 Email sent to Victorian fishery stakeholders — 23 June 2023

- Victorian Fishing Authority (VFA)
- Apollo Bay Fisherman’s Co-operative
- South Eastern Professional Fishermen’s Association Inc
- Victorian Rock Lobster Association (VRLA)

Dear Fishery Stakeholder

Woodside previously consulted you (see email below) on Woodside’s plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

1.20 Email that Seafood Industry Victoria (SIV) distributed to represented fisheries — 19 July 2023

- Rock Lobster Fishery
- Giant Crab Fishery
- Wrasse Fishery
- Snapper Fishery

Hi [REDACTED]

As per my previous email, thank you for your assistance sharing this information with your members/licence holders.

Best regards

[REDACTED]

Dear Fishery Stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Activities are scheduled to commence around Q2, 2024 and will be completed by 30 June 2025. The activities are scheduled to take 3-4 months to complete and execution windows will be determined once contracts are awarded. The activities will be covered under three Environment Plans:

- Plug and Abandonment of wells and field management
- Field decommissioning in Commonwealth waters
- Field decommissioning in State waters

Regulatory approvals are being sought for the proposed activities detailed in the attached [Consultation Information Sheet](#).

During decommissioning activities there are no restrictions to other vessels within the operational area apart from being advised to take care during the vessel activities and to maintain the 500 m exclusion zone around those vessels. Once the decommissioning activities are completed, all exclusion zones will be lifted.

Your feedback

Woodside consults relevant persons in the course of preparing Environment Plans to notify them of the activity and to obtain relevant feedback to inform its planning for proposed petroleum activities in the region.

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 August 2023**.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or Department of Energy, Environment and Climate Action (DEECA) for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plans in order for this information to remain confidential to NOPSEMA or DEECA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Regards

Woodside Feedback

1.21 Email sent to Commonwealth fishery stakeholders — 2 June 2023

- Commonwealth Fisheries Association (CFA)
- Tuna Australia
- Australian Southern Bluefin Tuna Industry Association (ASBTIA)
- South East Trawl Fishing Industry Association (SETFIA)
- Southern Shark Industry Alliance (SSIA)
- Australian Fisheries Management Authority (AFMA)
- Bass Strait Scallop Industry Association (BSSIA)

Dear Fishery Stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A 500 m temporary exclusion zone will be in place around the survey vessels to manage vessel movements. There are no restrictions to other vessels within the operational area apart from being advised to take care during the survey vessel activities and to maintain the 500 m exclusion zone around those vessels. Once the decommissioning activities are completed, the petroleum safety zones and any exclusion zones will no longer be in place.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as

part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV). Ongoing field management activities (equipment monitoring and inspection).	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPs) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)

Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion. 2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)	~5.44 km from The Arches Marine Sanctuary	~1.69 km from The Arches Marine Sanctuary ~5 km from the Twelve Apostles Marine Park

	~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)	~4.74 km from the Twelve Apostles Marine National Park	
Relevant Fisheries:	Commonwealth fisheries <u>Operational area:</u> Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook Southern Squid Jig Fishery <u>EMBA:</u> Bass Strait Central Zone Scallop Fishery Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook Southern Squid Jig Fishery		

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.21.1 Email sent to Commonwealth fishery stakeholders — 23 June 2023

- Commonwealth Fisheries Association (CFA)
- Australian Southern Bluefin Tuna Industry Association (ASBTIA)
- Bass Strait Scallop Industry Association (BSSIA)
- Southern Shark Industry Alliance (SSIA)

Dear Fishery Stakeholder

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.22 Email sent to Fishery stakeholders (140 licence holders) — 26 July 2023

- Bass Strait Central Zone Scallop Fishery
- Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine
- Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook
- Southern Squid Jig Fishery

Dear Fishery Stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A 500 m temporary exclusion zone will be in place around the survey vessels to manage vessel movements. There are no restrictions to other vessels within the operational area apart from being advised to take care during the survey vessel activities and to maintain the 500 m exclusion zone around those vessels. Once the decommissioning activities are completed, the petroleum safety zones and any exclusion zones will no longer be in place.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)

Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former production wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV). Ongoing field management activities (equipment monitoring and inspection).	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	

	associated project vessels during P&A activities.		
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion. 2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>
Relevant Fisheries:	<p>Commonwealth fisheries</p> <p><u>Operational area:</u></p> <p>Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine</p> <p>Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark</p>		

	Hook Southern Squid Jig Fishery <u>EMBA:</u> Bass Strait Central Zone Scallop Fishery Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook Hook Southern Squid Jig Fishery State fisheries <u>Operational area and EMBA:</u> Victorian Rock Lobster Victorian Giant Crab Abalone Wrasse Snapper
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 19 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.22.1 Email sent to Fishery stakeholders (140 licence holders) — 18 August 2023

- Bass Strait Central Zone Scallop Fishery
- Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine
- Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook
- Southern Squid Jig Fishery

Dear Fishery Stakeholder

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Regards

Woodside Feedback

1.23 Email sent to State Fishery stakeholders — 19 June 2023

- Abalone Council Victoria
- Abalone Victoria Central Zone
- Abalone Fishery (through Abalone Council Victoria)
- Victorian Scallop Fishermen's Association Inc
- VR Fish
- South Eastern Professional Fishermen's Association Inc

Dear Fishery Stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).

- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A 500 m temporary exclusion zone will be in place around the survey vessels to manage vessel movements. There are no restrictions to other vessels within the operational area apart from being advised to take care during the survey vessel activities and to maintain the 500 m exclusion zone around those vessels. Once the decommissioning activities are completed, the petroleum safety zones and any exclusion zones will no longer be in place.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)

Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	

	1,500 m radius around each of the wells.		
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

	equipment is removed.	<ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

	Marine National Park (Minerva-1 well)		
Relevant Fisheries:	State fisheries <u>Operational area and EMBA:</u> Victorian Rock Lobster Victorian Giant Crab Abalone Wrasse Snapper		

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.23.1 Email sent to Fishery stakeholders — 11 July 2023

- Abalone Council Victoria
- Abalone Victoria Central Zone
- Abalone Fishery (through Abalone Council Victoria)
- Victorian Scallop Fishermen's Association Inc
- VR Fish
- South Eastern Professional Fishermen's Association Inc

Dear Fishery Stakeholder

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Regards

Woodside Feedback

1.24 Email sent to Greenpeace Australia Pacific (GAP) — 2 June 2023

Dear [REDACTED]

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:
Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.

- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells). Removal of wellhead and	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

	<p>subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>		
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	
Exclusion zones	<p>A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.</p>	<p>A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities</p>	

Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.24.1 Email sent to Greenpeace Australia Pacific (GAP) — 26 June 2023

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Regards

Woodside Feedback

1.25 Email sent to Environment Victoria — 2 June 2023

Dear Environment Victoria

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters: **Minerva Plug and Abandonment (P&A) and Field Management EP**

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for](#)

[the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025,</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p>	

	pursuant to General Direction 831.	Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	2 x production wells, including xmas tree completion. 2 x exploration wells. The P&A covers the removal of well infrastructure below or as close as practical to the mudline including	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures 	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures

	<p>wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**. Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.25.1 Email sent to Environment Victoria — 23 June 2023

Dear Environment Victoria

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.26 Email sent to Australian Coastal Society – Victorian Chapter — 2 June 2023

Dear Environment Victoria

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline	Removal of the pipeline bundle within State waters.

	<p>productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	structures and stabilisation materials.	Note: the shore crossing will not be removed as part of this campaign
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	
Exclusion zones	<p>A temporary 1,000 m exclusion zone will apply around the MODU and the</p>	<p>A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities</p>	

	associated project vessels during P&A activities.		
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.26.1 Email sent to Australian Coastal Society – Victorian Chapter — 23 June 2023

Dear Australian Coastal Society – Victoria

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

1.27 Email sent to Marine Mammal Foundation — 2 June 2023

Dear Marine Mammal Foundation

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters: **Minerva Plug and Abandonment (P&A) and Field Management EP**

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management

measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p>	

	constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	<p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU)

	<p>or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the</p>	<ul style="list-style-type: none"> • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		CSV crane with minor cuts made, as required.	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.27.1 Email sent to Marine Mammal Foundation — 23 June 2023

Dear Marine Mammal Foundation

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Regards

Woodside Feedback

1.28 Email sent to Maritime Union of Australia (MUA) — 2 June 2023

Dear [REDACTED]

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:
Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).

- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP

<p>Summary</p>	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
<p>Commencement date</p>	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
<p>Simultaneous Operations (SIMOPS)</p>	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
<p>Petroleum Title</p>	<p>VIC-L22</p>	<p>VIC-L22, VIC-PL33</p>	<p>VIC-PL33(v)</p>
<p>Operational Area</p>	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	

Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

	Park (Minerva-1 well)		
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.28.1 Email sent to Maritime Union of Australia (MUA) — 23 June 2023

Dear [redacted] and [redacted]

Woodside previously provided consultation information (see email below) on Woodside’s plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Regards

Woodside Feedback

1.29 Email sent to Australian Conservation Foundation — 2 June 2023

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters: **Minerva Plug and Abandonment (P&A) and Field Management EP**

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
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Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management

measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.	

	constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	<p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU)

	<p>or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the</p>	<ul style="list-style-type: none"> • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		CSV crane with minor cuts made, as required.	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.29.1 Email sent to Australian Conservation Foundation (ACF) — 23 June 2023

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside’s plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Regards

Woodside Feedback

1.30 Email sent to Fisheries Research and Development Corporation — 2 June 2023

Dear Fisheries Research and Development Corporation

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).

- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP

<p>Summary</p>	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
<p>Commencement date</p>	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
<p>Simultaneous Operations (SIMOPS)</p>	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
<p>Petroleum Title</p>	<p>VIC-L22</p>	<p>VIC-L22, VIC-PL33</p>	<p>VIC-PL33(v)</p>
<p>Operational Area</p>	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	

Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

	Park (Minerva-1 well)		
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.30.1 Email sent to Fisheries Research and Development Corporation — 23 June 2023

Dear Fisheries Research and Development Corporation

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Regards

Woodside Feedback

1.31 Email sent to Blue Whale Study — 2 June 2023

Dear Blue Whale Study

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters: **Minerva Plug and Abandonment (P&A) and Field Management EP**

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined

by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>

<p>Commencement date</p>	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
<p>Simultaneous Operations (SIMOPS)</p>	<p>P&A and Facilities Removal simultaneous operations (SIMOPs) are not planned but may occur depending on vessel and equipment availability</p>		
<p>Petroleum Title</p>	<p>VIC-L22</p>	<p>VIC-L22, VIC-PL33</p>	<p>VIC-PL33(v)</p>
<p>Operational Area</p>	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	
<p>Exclusion zones</p>	<p>A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.</p>	<p>A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities</p>	
<p>Estimated duration</p>	<p>~45 - 60 days</p>	<p>~15 - 30 days</p>	<p>~15 - 30 days</p>
<p>Location and water depth</p>	<p>~10.45 km south south-west of Port Campbell in ~59 m water depth</p>	<p>~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth</p>	<p>~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth</p>
<p>Infrastructure</p>	<p>2 x production wells, including xmas tree completion.</p>	<p>Pipeline bundle encompassing:</p>	<p>Pipeline bundle encompassing:</p>

	<p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after 	<ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		<p>deburial using a control flow excavator (CFE) tool.</p> <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.31.1 Email sent to Blue Whale Study — 23 June 2023

Dear Blue Whale Study

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Regards

Woodside Feedback

1.32 Email sent to CSIRO — 2 June 2023

Dear ■■■

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in

Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m. Regulatory approvals are being sought for the following activities in Commonwealth and State waters:
Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)

Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated

	<p>activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<p>Vehicle (ROV) in the shallow water.</p>
<p>Vessels</p>	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required

Distance to nearest marine park/mature reserve	~8.5 km from The Arches Marine Sanctuary (Minerva-1 well) ~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)	~5.44 km from The Arches Marine Sanctuary ~4.74 km from the Twelve Apostles Marine National Park	~1.69 km from The Arches Marine Sanctuary ~5 km from the Twelve Apostles Marine Park
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.32.1 Email sent to CSIRO — 23 June 2023

Dear ■■■

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Regards

Woodside Feedback

1.33 Email sent to Australian Institute of Marine Science (AIMS) — 2 June 2023

Dear [REDACTED]

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former production wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

	Ongoing field management activities (equipment monitoring and inspection).		
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPs) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port	~5.5 km to 10.45 km south south-west of Port	~1.7 km to 5.5 km south southwest of Port

	Campbell in ~59 m water depth	Campbell in ~53 m to 59 m water depth	Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 1 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.33.1 Email sent to Australian Institute of Marine Science (AIMS) — 23 June 2023

Dear [REDACTED]

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **1 July 2023**.

Regards

Woodside Feedback

1.34 Email sent to Director of National Parks (DNP) — 19 June 2023

Dear Director of National Parks

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
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Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Australian Marine Parks

We note Australian Government Guidance on consultation activities and confirm that:

- The proposed activities are outside the boundaries of a proclaimed Australian Marine Park. The distances to the nearest State reserves/marine parks are outlined in the table below.
- We have assessed potential risks to Australian Marine Parks (AMPs) in the development of the proposed Environment Plan revision and believe that there are no credible risks as part of planned activities that have potential to impact the values of the Marine Parks.
- The worst-case credible spill scenario assessed in this EP is the highly unlikely event of a loss of well containment for the P&A EP and a vessel spill marine diesel oil (MDO) for the Minerva Decommissioning EP and Minerva (State Waters) Decommissioning EP, resulting in the release of reservoir hydrocarbons to the marine environment. Through review of hydrocarbon spill modelling, and with consideration of a 50 ppb dissolved and 100 ppb entrained hydrocarbon threshold, the following AMPs may be contacted in the event of a spill:
 - Apollo Marine Park - approximately 75 km from the proposed activity
 - Beagle Marine Park - approximately 350 km from the proposed activity
- A Commonwealth Government approved oil spill response plan will be in place for the duration of the activities, which will include notification to relevant agencies and organisations as to the nature and scale of the event, as soon as practicable following an occurrence. The Director of National Parks will be advised if an environmental incident occurs that may impact on the values of the Marine Park.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV). Ongoing field management activities (equipment	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

	monitoring and inspection).		
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth

<p>Infrastructure</p>	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		<p>leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool.</p> <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/nature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 19 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.34.1 Email sent to Director of National Parks — 12 July 2023

Dear Director of National Parks

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Regards

Woodside Feedback

1.35 Email sent to Otway Recreational marine users and local bodies like visitor information centres and chambers of commerce — 19 June 2023

Recreational Marine Users, Group 1:

- Apollo Bay Dive Centre and Surf
- Apollo Bay Fishing Charters
- Apollo Bay Surf and Kayak
- Dive Industry Association of Australia
- Go Surf School
- SCUBA Divers Federation of Victoria
- Apollo Bay Surf Lifesaving Club
- Apollo Bay Sailing Club
- Ocean Racing Club of Victoria
- Twelve Apostles Helicopters Tours

Others:

- Port Campbell Visitor Information Centre
- Apollo Bay Visitor Information Centre
- Warrnambool Visitor Information Centre
- Apollo Bay Chamber of Commerce

Dear (group name)

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **18 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p>	

	approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	<p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	2 x production wells, including xmas tree completion. 2 x exploration wells.	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines 	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines

	<p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. 	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/nature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 18 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.35.1 Email sent to Otway recreational marine users and local bodies like visitor information centres and chambers of commerce — 11 July 2023

Recreational Marine Users, Group 1:

- Apollo Bay Dive Centre and Surf
- Apollo Bay Fishing Charters
- Apollo Bay Surf and Kayak
- Dive Industry Association of Australia
- Go Surf School
- SCUBA Divers Federation of Victoria
- Apollo Bay Surf Lifesaving Club
- Apollo Bay Sailing Club
- Ocean Racing Club of Victoria
- Twelve Apostles Helicopters Tours

Others:

- Port Campbell Visitor Information Centre
- Apollo Bay Visitor Information Centre
- Warrnambool Visitor Information Centre
- Apollo Bay Chamber of Commerce

Dear (*group name*)

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **18 July 2023**.

Regards

Woodside Feedback

1.36 Email sent to Deakin University – School of Life and Environmental Sciences — 19 June 2023

Dear Deakin University – School of Life and Environmental Sciences

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters: **Minerva Plug and Abandonment (P&A) and Field Management EP**

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
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Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management

measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.	

	constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	<p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU)

	<p>or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the</p>	<ul style="list-style-type: none"> • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		CSV crane with minor cuts made, as required.	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/nature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 19 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.36.1 Email sent to Deakin University – School of Life and Environmental Sciences — 12 July 2023

Dear Deakin University – School of Life and Environmental Sciences

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **19 July 2023**.

Regards

Woodside Feedback

1.37 Email sent to Department of Transport and Planning (DTP) — 19 June 2023

Dear Department of Transport

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:
Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). **Also attached is a list of shipwrecks in Commonwealth waters within the EMBA.** You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP

	Field Management EP		
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	

	around each of the wells.		
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

	Marine National Park (Minerva-1 well)		
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Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.37.1 Email sent to Department of Transport and Planning (DTP) — 16 November 2023

Dear Department of Transport

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field. A follow up email to this was sent to you on 11 July 2023 however our records indicate this email was not received at your end as intended. We are therefore sending this email again as follows:

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **30 November 2023**.

Regards

1.37.2 Email sent to Department of Transport and Planning (DTP) — 11 December 2023

Dear Department of Transport and Planning,

Further to the correspondence that Department of Transport and Planning (DTP) has previously received (below) regarding the preparation of three Environment Plans (EPs) for the Minerva decommissioning activities, Woodside would like to offer DTP the opportunity to review or provide comment on the activity-specific Oil Pollution First Strike Plans. Please note that these assets were

previously operated by BHP Petroleum Pty Ltd. (BHP) and, as such, DTP may have received previous consultation materials and draft plans for this activity. Following the merger of BHP and Woodside, the EPs and Oil Pollution First Strike Plans have now been revised to align to Woodside's approaches and processes.

Information is presented as follows:

- A Consultation Information Sheet providing information on the proposed activities is available [here](#). This is a combined Information Sheet addressing both the Commonwealth and State operations for Minerva decommissioning activities.
- Oil Pollution First Strike Plans for each of the three EPs are also attached. These will form part of each approval submission in accordance with (as relevant): the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth); the *Victoria Offshore Petroleum and Greenhouse Gas Storage Act 2010*; and the *Victoria Offshore Petroleum and Greenhouse Gas Storage Regulations 2021*.

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plans. The two Commonwealth EPs will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). The State waters EP will be submitted to Earth Resources Regulation (ERR) branch of the Department of Energy, Environment and Climate Action (DEECA) for acceptance in accordance with the *Victoria Offshore Petroleum and Greenhouse Gas Storage Act 2010* and the *Victoria Offshore Petroleum and Greenhouse Gas Storage Regulations 2021*.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or ERR upon submission of the Environment Plan in order for this information to remain confidential to the respective regulatory body.

Many thanks,

1.38 Email sent to Heritage Victoria — 20 June 2023

Dear Heritage Victoria,

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with

an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.

- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **20 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters.

	<p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>		<p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	
Exclusion zones	<p>A temporary 1,000 m exclusion zone will apply around the MODU and the associated project</p>	<p>A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities</p>	

	vessels during P&A activities.		
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/nature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 by **20 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.39 Email sent to Bunurong Land Council Aboriginal Corporation — 19 May 2023

Dear [REDACTED]

My name is [REDACTED] and I am a Principal Adviser in the First Nations Relations team at Woodside Energy. It's nice to virtually meet you.

Woodside Energy is reaching out to Bunurong Land Council Aboriginal Corporation (BLCAC) to consult with you about the removal of subsea infrastructure located approximately 11 km south-southwest of Port Campbell, Victoria.

The Minerva Gas Plant ceased operation 2019 and we are now proposing to remove the gas pipeline and subsea infrastructure that connected the Minerva Gas Plant to the Minerva Gas Field. This work will also include the permanent plugging of four gas wells that were part of the Minerva Gas Field.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in an Environmental Plan.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found here.

Woodside is seeking to understand the nature of the interests that BLCAC and its members may have in the 'environment that may be affected' (EMBA) by these activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheet. In particular, we are interested in hearing:

- About how the activities outlined in the Summary Information Sheet could impact your interests and activities and/or your cultural values;
- Your concerns about the proposed activities and what do you think we should do about those concerns;
- Whether there are any other individuals, groups or organisations you think we should talk to.
- If you would like to speak with us, please let us know by Friday 16 June 2023 and please also advise of your preferred method of consultation and any support you may require.

BLCAC can also provide feedback directly to me on the details below, to Feedback@woodside.com.au or by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please feel free to forward this email and the attached documents to BLCAC members or other people who you think may be interested as required. Woodside would be pleased to speak with BLCAC members, the BLCAC Board or office holders and other interested parties as required.

We look forward to hearing from you.

Kind regards



MINERVA DECOMMISSIONING

This is a summary of the activity in plain English. More detailed information can be found in Activity Update - Minerva Decommissioning Environment Plans.

Overview

Woodside is planning to remove all subsea infrastructure and equipment from the seabed for the Minerva Field, located in 50-60 m of water approximately 11 km south-southwest of Port Campbell, Victoria

A map of the location is shown below.



Background

The Minerva Gas Plant commenced production in 2005 and ceased in 2019. At that time, the Minerva wells were isolated and the production system flushed of hydrocarbons. In 2021, the flowlines were disconnected from the wells and barrier plugs installed.

Work Method

The work can be considered in three parts:

- **Minerva plug and abandonment and field management**
Four wells are proposed to be permanently plugged with cement using a moored Mobile Offshore Drilling Unit (MODU) and the well infrastructure above the mudline is proposed to be removed. Other vessels may provide support for this activity. The field will be monitored and inspected, as required, until the equipment is removed. A temporary 1000 m exclusion zone will apply around the MODU and other project vessels. This work is estimated to take up to 60 days and must be completed by mid 2025.
- **Minerva Field decommissioning in Commonwealth Waters**
The gas pipeline bundle and other subsea infrastructure is proposed to be removed. Hydraulic shears will be used to cut the flowline and equipment will be recovered to a Construction Support Vessel (CSV) by crane. This work is estimated to take up to 30 days and must be completed by mid 2025. Figure 1, Figure 2 and Figure 3 show some of the structures and equipment used to remove them.
- **Minerva Field decommissioning in State Waters**
The gas pipeline bundle is proposed to be removed in State Waters, using hydraulic shears and supported by divers, where required. This work is proposed to be done at the same time as decommissioning in Commonwealth Waters.



Figure 1. Minerva Pipeline Bundle Arrangement



Figure 2. Typical Subsea Cutting Activity



Figure 3. Typical Subsea Equipment Recovery Activity

Environmental Impacts and Management

This work program includes Planned Activities but may also result in Unplanned Activities. Both Planned and Unplanned Activities may impact the environment. Woodside manages the work program to reduce impacts and risks to as low as reasonably practical.

Planned Activities are activities that Woodside knows will happen as part of this work program. For example, Planned Activities include other marine users being temporarily stopped from accessing the work area, and the marine vessels and drill rig used for the work may disturb the seabed, generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage), and other authorised waste.

Unplanned Activities are not planned as part of the work program, but may be the result of an accident, incident, or emergency situation. It is highly unlikely that there will be an Unplanned Activity. Unplanned Activities might include a spill of fuel or oil, a release from a well, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with marine animals, waste entering the environment and accidental introduction of invasive species from outside the region. Management measures will be in place to reduce the probability and impacts of these unplanned activities to as low as practical.

A table showing all planned and unplanned activities, potential impacts, and management measures for each is included in the Information Sheet.

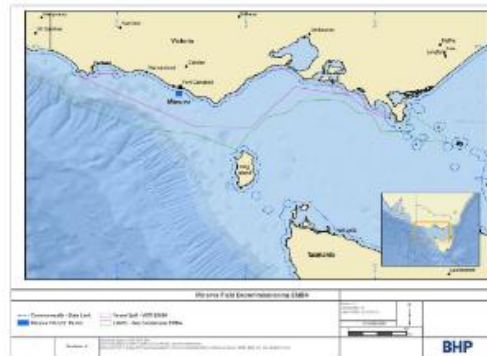
Environment that may be affected

The total area over which unplanned events could have environmental impacts is shown in the maps below. This is referred to as the environment that may be affected (EMBA). In the highly unlikely event such as a fuel spill from a vessel collision or an oil release from one of the wells while drilling, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.

There are two potential EMBA's for the Minerva decommissioning, in the event of:

- Loss of Well Containment during the plugging and abandonment of four production/exploration wells in the Minerva Field by a MODU
- Vessel Spill Marine Diesel Oil (MDO) during the recovery of subsea infrastructure in the Minerva Field using a CSV.

Figure 4 shows the two potential EMBA's.



Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with surveys like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside's work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Providing Feedback

If you have an interest in the area of the "environment that may be affected" (EMBA) by this work program and would like more information or any concerns, you can tell Woodside by calling 1800 442 977 or send an email to Feedback@woodside.com.au.

If you would prefer to speak to the government directly, they can be contacted on +61 (0)8 6188 8700 or send an email to communications@nopsema.gov.au.

Further Information

You can find the details Consultation Information Sheet for proposed activity on our website: <https://www.woodside.com/sustainability/consultation-activities>.

1.40 Email sent to Eastern Maar Aboriginal Corporation — 19 May 2023

Dear [REDACTED]

My name is [REDACTED] and I am a Principal Adviser in the First Nations Relations team at Woodside Energy. It's nice to virtually meet you.

Woodside Energy is reaching out to Eastern Maar Aboriginal Corporation (EMAC) to consult with you about the removal of subsea infrastructure located approximately 11 km south-southwest of Port Campbell, Victoria.

The Minerva Gas Plant ceased operation 2019 and we are now proposing to remove the gas pipeline and subsea infrastructure that connected the Minerva Gas Plant to the Minerva Gas Field. This work will also include the permanent plugging of four gas wells that were part of the Minerva Gas Field.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in an Environmental Plan.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found here.

Woodside is seeking to understand the nature of the interests that EMAC and its members may have in the 'environment that may be affected' (EMBA) by these activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheet. In particular, we are interested in hearing:

- About how the activities outlined in the Summary Information Sheet could impact your interests and activities and/or your cultural values;
- Your concerns about the proposed activities and what do you think we should do about those concerns;
- Whether there are any other individuals, groups or organisations you think we should talk to.
- If you would like to speak with us, please let us know by Friday 16 June 2023 and please also advise of your preferred method of consultation and any support you may require.

EMAC can also provide feedback directly to me on the details below, to Feedback@woodside.com.au or by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please feel free to forward this email and the attached documents to EMAC members or other people who you think may be interested as required. Woodside would be pleased to speak with EMAC members, the EMAC Board or office holders and other interested parties as required.

We look forward to hearing from you.

Kind regards



MINERVA DECOMMISSIONING

This is a summary of the activity in plain English. More detailed information can be found in Activity Update - Minerva Decommissioning Environment Plans.

Overview

Woodside is planning to remove all subsea infrastructure and equipment from the seabed for the Minerva Field, located in 50-60 m of water approximately 11 km south-southwest of Port Campbell, Victoria

A map of the location is shown below.



Background

The Minerva Gas Plant commenced production in 2005 and ceased in 2019. At that time, the Minerva wells were isolated and the production system flushed of hydrocarbons. In 2021, the flowlines were disconnected from the wells and barrier plugs installed.

Work Method

The work can be considered in three parts:

- Minerva plug and abandonment and field management**
 Four wells are proposed to be permanently plugged with cement using a moored Mobile Offshore Drilling Unit (MODU) and the well infrastructure above the mudline is proposed to be removed. Other vessels may provide support for this activity. The field will be monitored and inspected, as required, until the equipment is removed. A temporary 1000 m exclusion zone will apply around the MODU and other project vessels. This work is estimated to take up to 60 days and must be completed by mid 2025.
- Minerva Field decommissioning in Commonwealth Waters**
 The gas pipeline bundle and other subsea infrastructure is proposed to be removed. Hydraulic shears will be used to cut the flowline and equipment will be recovered to a Construction Support Vessel (CSV) by crane. This work is estimated to take up to 30 days and must be completed by mid 2025. Figure 1, Figure 2 and Figure 3 show some of the structures and equipment used to remove them.
- Minerva Field decommissioning in State Waters**
 The gas pipeline bundle is proposed to be removed in State Waters, using hydraulic shears and supported by divers, where required. This work is proposed to be done at the same time as decommissioning in Commonwealth Waters.



Figure 1. Minerva Pipeline Bundle Arrangement



Figure 2. Typical Subsea Cutting Activity



Figure 3. Typical Subsea Equipment Recovery Activity

Environmental Impacts and Management

This work program includes Planned Activities but may also result in Unplanned Activities. Both Planned and Unplanned Activities may impact the environment. Woodside manages the work program to reduce impacts and risks to as low as reasonably practical.

Planned Activities are activities that Woodside knows will happen as part of this work program. For example, Planned Activities include other marine users being temporarily stopped from accessing the work area, and the marine vessels and drill rig used for the work may disturb the seabed, generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage), and other authorised waste.

Unplanned Activities are not planned as part of the work program, but may be the result of an accident, incident, or emergency situation. It is highly unlikely that there will be an Unplanned Activity. Unplanned Activities might include a spill of fuel or oil, a release from a well, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with marine animals, waste entering the environment and accidental introduction of invasive species from outside the region. Management measures will be in place to reduce the probability and impacts of these unplanned activities to as low as practical.

A table showing all planned and unplanned activities, potential impacts, and management measures for each is included in the Information Sheet.

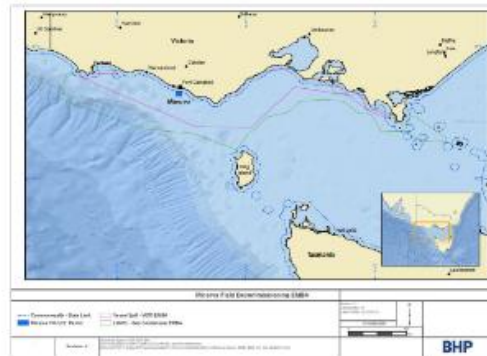
Environment that may be affected

The total area over which unplanned events could have environmental impacts is shown in the maps below. This is referred to as the environment that may be affected (EMBA). In the highly unlikely event such as a fuel spill from a vessel collision or an oil release from one of the wells while drilling, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.

There are two potential EMBA's for the Minerva decommissioning, in the event of:

- Loss of Well Containment during the plugging and abandonment of four production/exploration wells in the Minerva Field by a MODU
- Vessel Spill Marine Diesel Oil (MDO) during the recovery of subsea infrastructure in the Minerva Field using a CSV.

Figure 4 shows the two potential EMBA's.



Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with surveys like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside's work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Providing Feedback

If you have an interest in the area of the "environment that may be affected" (EMBA) by this work program and would like more information or any concerns, you can tell Woodside by calling 1800 442 977 or send an email to Feedback@woodside.com.au.

If you would prefer to speak to the government directly, they can be contacted on +61 (0)8 6188 8700 or send an email to communications@nopsema.gov.au.

Further Information

You can find the details Consultation Information Sheet for proposed activity on our website: <https://www.woodside.com/sustainability/consultation-activities>.

1.41 Email sent to Gunditj Mirring Traditional Owners Aboriginal Corporation — 19 May 2023

Dear [REDACTED]

My name is [REDACTED] and I am a Principal Adviser in the First Nations Relations team at Woodside Energy. It's nice to virtually meet you.

Woodside Energy is reaching out to the Gunditj Mirring Traditional Owner Aboriginal Corporation (Gunditj Mirring) to consult with you about the removal of subsea infrastructure located approximately 11 km south-southwest of Port Campbell, Victoria.

The Minerva Gas Plant ceased operation 2019 and we are now proposing to remove the gas pipeline and subsea infrastructure that connected the Minerva Gas Plant to the Minerva Gas Field. This work will also include the permanent plugging of four gas wells that were part of the Minerva Gas Field.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in an Environmental Plan.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found here.

Woodside is seeking to understand the nature of the interests that Gunditj Mirring and its members may have in the 'environment that may be affected' (EMBA) by these activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheet. In particular, we are interested in hearing:

- About how the activities outlined in the Summary Information Sheet could impact your interests and activities and/or your cultural values;
- Your concerns about the proposed activities and what do you think we should do about those concerns;
- Whether there are any other individuals, groups or organisations you think we should talk to.

If you would like to speak with us, please let us know by Friday 16 June 2023 and please also advise of your preferred method of consultation and any support you may require.

Gunditj Mirring can also provide feedback directly to me on the details below, to Feedback@woodside.com.au or by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please feel free to forward this email and the attached documents to Gunditj Mirring members or other people who you think may be interested as required. Woodside would be pleased to speak with Gunditj Mirring members, the Gunditj Mirring Board or office holders and other interested parties as required.

We look forward to hearing from you.

Kind regards



MINERVA DECOMMISSIONING

This is a summary of the activity in plain English. More detailed information can be found in Activity Update - Minerva Decommissioning Environment Plans.

Overview

Woodside is planning to remove all subsea infrastructure and equipment from the seabed for the Minerva Field, located in 50-60 m of water approximately 11 km south-southwest of Port Campbell, Victoria

A map of the location is shown below.



Background

The Minerva Gas Plant commenced production in 2005 and ceased in 2019. At that time, the Minerva wells were isolated and the production system flushed of hydrocarbons. In 2021, the flowlines were disconnected from the wells and barrier plugs installed.

Work Method

The work can be considered in three parts:

- Minerva plug and abandonment and field management**
 Four wells are proposed to be permanently plugged with cement using a moored Mobile Offshore Drilling Unit (MODU) and the well infrastructure above the mudline is proposed to be removed. Other vessels may provide support for this activity. The field will be monitored and inspected, as required, until the equipment is removed. A temporary 1000 m exclusion zone will apply around the MODU and other project vessels. This work is estimated to take up to 60 days and must be completed by mid 2025.
- Minerva Field decommissioning in Commonwealth Waters**
 The gas pipeline bundle and other subsea infrastructure is proposed to be removed. Hydraulic shears will be used to cut the flowline and equipment will be recovered to a Construction Support Vessel (CSV) by crane. This work is estimated to take up to 30 days and must be completed by mid 2025. Figure 1, Figure 2 and Figure 3 show some of the structures and equipment used to remove them.
- Minerva Field decommissioning in State Waters**
 The gas pipeline bundle is proposed to be removed in State Waters, using hydraulic shears and supported by divers, where required. This work is proposed to be done at the same time as decommissioning in Commonwealth Waters.



Figure 1. Minerva Pipeline Bundle Arrangement



Figure 2. Typical Subsea Cutting Activity



Figure 3. Typical Subsea Equipment Recovery Activity

Environmental Impacts and Management

This work program includes Planned Activities but may also result in Unplanned Activities. Both Planned and Unplanned Activities may impact the environment. Woodside manages the work program to reduce impacts and risks to as low as reasonably practical.

Planned Activities are activities that Woodside knows will happen as part of this work program. For example, Planned Activities include other marine users being temporarily stopped from accessing the work area, and the marine vessels and drill rig used for the work may disturb the seabed, generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage), and other authorised waste.

Unplanned Activities are not planned as part of the work program, but may be the result of an accident, incident, or emergency situation. It is highly unlikely that there will be an Unplanned Activity. Unplanned Activities might include a spill of fuel or oil, a release from a well, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with marine animals, waste entering the environment and accidental introduction of invasive species from outside the region. Management measures will be in place to reduce the probability and impacts of these unplanned activities to as low as practical.

A table showing all planned and unplanned activities, potential impacts, and management measures for each is included in the Information Sheet.

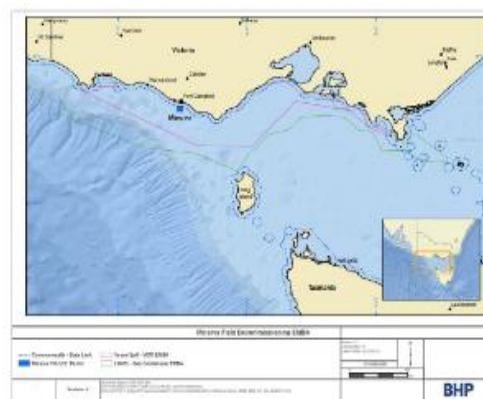
Environment that may be affected

The total area over which unplanned events could have environmental impacts is shown in the maps below. This is referred to as the environment that may be affected (EMBA). In the highly unlikely event such as a fuel spill from a vessel collision or an oil release from one of the wells while drilling, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.

There are two potential EMBA's for the Minerva decommissioning, in the event of:

- Loss of Well Containment during the plugging and abandonment of four production/exploration wells in the Minerva Field by a MODU
- Vessel Spill Marine Diesel Oil (MDO) during the recovery of subsea infrastructure in the Minerva Field using a CSV.

Figure 4 shows the two potential EMBA's.



Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with surveys like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside's work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Providing Feedback

If you have an interest in the area of the "environment that may be affected" (EMBA) by this work program and would like more information or any concerns, you can tell Woodside by calling 1800 442 977 or send an email to Feedback@woodside.com.au.

If you would prefer to speak to the government directly, they can be contacted on +61 (0)8 6188 8700 or send an email to communications@nopsema.gov.au.

Further Information

You can find the details Consultation Information Sheet for proposed activity on our website:

<https://www.woodside.com/sustainability/consultation-activities>.

1.42 Email sent to Wadawurrung Traditional Owners Aboriginal Corporation — 19 May 2023

Dear [REDACTED]

My name is [REDACTED] and I am a Principal Adviser in the First Nations Relations team at Woodside Energy. It's nice to virtually meet you.

Woodside Energy is reaching out to Wadawurrung Traditional Owners Aboriginal Corporation (Wadawurrung) to consult with you about the removal of subsea infrastructure located approximately 11 km south-southwest of Port Campbell, Victoria.

The Minerva Gas Plant ceased operation 2019 and we are now proposing to remove the gas pipeline and subsea infrastructure that connected the Minerva Gas Plant to the Minerva Gas Field. This work will also include the permanent plugging of four gas wells that were part of the Minerva Gas Field.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in an Environmental Plan.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found here.

Woodside is seeking to understand the nature of the interests that Wadawurrung and its members may have in the 'environment that may be affected' (EMBA) by these activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheet. In particular, we are interested in hearing:

- About how the activities outlined in the Summary Information Sheet could impact your interests and activities and/or your cultural values;
- Your concerns about the proposed activities and what do you think we should do about those concerns;
- Whether there are any other individuals, groups or organisations you think we should talk to.
- If you would like to speak with us, please let us know by Friday 16 June 2023 and please also advise of your preferred method of consultation and any support you may require.

Wadawurrung can also provide feedback directly to me on the details below, to Feedback@woodside.com.au or by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please feel free to forward this email and the attached documents to Wadawurrung members or other people who you think may be interested as required. Woodside would be pleased to speak with Wadawurrung members, the Wadawurrung Board or office holders and other interested parties as required.



Figure 1. Minerva Pipeline Bundle Arrangement



Figure 2. Typical Subsea Cutting Activity



Figure 3. Typical Subsea Equipment Recovery Activity

Environmental Impacts and Management

This work program includes Planned Activities but may also result in Unplanned Activities. Both Planned and Unplanned Activities may impact the environment. Woodside manages the work program to reduce impacts and risks to as low as reasonably practical.

Planned Activities are activities that Woodside knows will happen as part of this work program. For example, Planned Activities include other marine users being temporarily stopped from accessing the work area, and the marine vessels and drill rig used for the work may disturb the seabed, generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage), and other authorised waste.

Unplanned Activities are not planned as part of the work program, but may be the result of an accident, incident, or emergency situation. It is highly unlikely that there will be an Unplanned Activity. Unplanned Activities might include a spill of fuel or oil, a release from a well, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with marine animals, waste entering the environment and accidental introduction of invasive species from outside the region. Management measures will be in place to reduce the probability and impacts of these unplanned activities to as low as practical.

A table showing all planned and unplanned activities, potential impacts, and management measures for each is included in the Information Sheet.

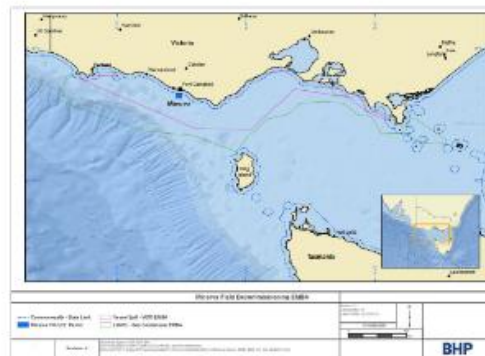
Environment that may be affected

The total area over which unplanned events could have environmental impacts is shown in the maps below. This is referred to as the environment that may be affected (EMBA). In the highly unlikely event such as a fuel spill from a vessel collision or an oil release from one of the wells while drilling, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.

There are two potential EMBA's for the Minerva decommissioning, in the event of:

- Loss of Well Containment during the plugging and abandonment of four production/exploration wells in the Minerva Field by a MODU
- Vessel Spill Marine Diesel Oil (MDO) during the recovery of subsea infrastructure in the Minerva Field using a CSV.

Figure 4 shows the two potential EMBA's.



Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with surveys like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside's work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Providing Feedback

If you have an interest in the area of the "environment that may be affected" (EMBA) by this work program and would like more information or any concerns, you can tell Woodside by calling 1800 442 977 or send an email to Feedback@woodside.com.au.

If you would prefer to speak to the government directly, they can be contacted on +61 (0)8 6188 8700 or send an email to communications@nopsema.gov.au.

Further Information

You can find the details Consultation Information Sheet for proposed activity on our website: <https://www.woodside.com/sustainability/consultation-activities>.

1.43 Email sent to Gunaikurnai Land and Waters Aboriginal Corporation — 19 May 2023

Dear [REDACTED]

My name is [REDACTED] and I am a Principal Adviser in the First Nations Relations team at Woodside Energy. It's nice to virtually meet you.

Woodside Energy is reaching out to Gunaikurnai Land and Waters Aboriginal Corporation (Gunaikurnai) to consult with you about the removal of subsea infrastructure located approximately 11 km south-southwest of Port Campbell, Victoria.

The Minerva Gas Plant ceased operation 2019 and we are now proposing to remove the gas pipeline and subsea infrastructure that connected the Minerva Gas Plant to the Minerva Gas Field. This work will also include the permanent plugging of four gas wells that were part of the Minerva Gas Field.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in an Environmental Plan.

I have attached a summary information sheet that explains the activities we plan to undertake, and a detailed consultation information sheet can be found here.

Woodside is seeking to understand the nature of the interests that Gunaikurnai and its members may have in the 'environment that may be affected' (EMBA) by these activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheet. In particular, we are interested in hearing:

- About how the activities outlined in the Summary Information Sheet could impact your interests and activities and/or your cultural values;
- Your concerns about the proposed activities and what do you think we should do about those concerns;
- Whether there are any other individuals, groups or organisations you think we should talk to.

If you would like to speak with us, please let us know by Friday 16 June 2023 and please also advise of your preferred method of consultation and any support you may require.

Gunaikurnai can also provide feedback directly to me on the details below, to Feedback@woodside.com.au or by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please feel free to forward this email and the attached documents to Gunaikurnai members or other people who you think may be interested as required. Woodside would be pleased to speak with Gunaikurnai members, the Gunaikurnai Board or office holders and other interested parties as required.

We look forward to hearing from you.

Kind regards



MINERVA DECOMMISSIONING

This is a summary of the activity in plain English. More detailed information can be found in Activity Update - Minerva Decommissioning Environment Plans.

Overview

Woodside is planning to remove all subsea infrastructure and equipment from the seabed for the Minerva Field, located in 50-60 m of water approximately 11 km south-southwest of Port Campbell, Victoria

A map of the location is shown below.



Background

The Minerva Gas Plant commenced production in 2005 and ceased in 2019. At that time, the Minerva wells were isolated and the production system flushed of hydrocarbons. In 2021, the flowlines were disconnected from the wells and barrier plugs installed.

Work Method

The work can be considered in three parts:

- Minerva plug and abandonment and field management**
 Four wells are proposed to be permanently plugged with cement using a moored Mobile Offshore Drilling Unit (MODU) and the well infrastructure above the mudline is proposed to be removed. Other vessels may provide support for this activity. The field will be monitored and inspected, as required, until the equipment is removed. A temporary 1000 m exclusion zone will apply around the MODU and other project vessels. This work is estimated to take up to 60 days and must be completed by mid 2025.
- Minerva Field decommissioning in Commonwealth Waters**
 The gas pipeline bundle and other subsea infrastructure is proposed to be removed. Hydraulic shears will be used to cut the flowline and equipment will be recovered to a Construction Support Vessel (CSV) by crane. This work is estimated to take up to 30 days and must be completed by mid 2025. Figure 1, Figure 2 and Figure 3 show some of the structures and equipment used to remove them.
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 The gas pipeline bundle is proposed to be removed in State Waters, using hydraulic shears and supported by divers, where required. This work is proposed to be done at the same time as decommissioning in Commonwealth Waters.



Figure 1. Minerva Pipeline Bundle Arrangement



Figure 2. Typical Subsea Cutting Activity



Figure 3. Typical Subsea Equipment Recovery Activity

Environmental Impacts and Management

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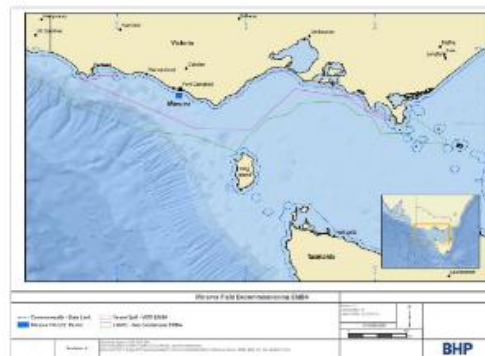
Environment that may be affected

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There are two potential EMBA's for the Minerva decommissioning, in the event of:

- Loss of Well Containment during the plugging and abandonment of four production/exploration wells in the Minerva Field by a MODU
- Vessel Spill Marine Diesel Oil (MDO) during the recovery of subsea infrastructure in the Minerva Field using a CSV.

Figure 4 shows the two potential EMBA's.



Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with surveys like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside's work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Providing Feedback

If you have an interest in the area of the "environment that may be affected" (EMBA) by this work program and would like more information or any concerns, you can tell Woodside by calling 1800 442 977 or send an email to Feedback@woodside.com.au.

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Further Information

You can find the details Consultation Information Sheet for proposed activity on our website:

<https://www.woodside.com/sustainability/consultation-activities>.

1.44 Email sent to First Nations Legal and Research Services — 22 May 2023

Dear [REDACTED]

As referred to this morning and for later discussion today, please see attached summary information sheet about Woodside Energy's proposed removal of subsea infrastructure located approximately 11 km south-southwest of Port Campbell, Victoria. A more detailed technical information sheet can be found here.

The Minerva Gas Plant ceased operation 2019 and we are now proposing to remove the gas pipeline and subsea infrastructure that connected the Minerva Gas Plant to the Minerva Gas Field. This work will also include the permanent plugging of four gas wells that were part of the Minerva Gas Field.

In preparation for this work, Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from both planned and unplanned activities. Mitigation and management measures have been developed for each of the risks identified and will be outlined in an Environmental Plan.

Woodside is seeking to understand the nature of the functions, activities and interests that First Nations Legal and Research Services (FNLRS) may have in the 'environment that may be affected' (EMBA) by these activities. The EMBA is the total area over which unplanned events could have environmental impacts. The EMBA is set out in the attached Summary Information Sheet. We are also interested to understand if there are any other individuals, groups or organisations you think we should talk to, noting that we have reached out directly to Gunditj Mirring, Waddawurrung, Eastern Maar, GLAWAC and Bunurong.

If you would like to receive detailed consultation, please let us know by Friday 16 June 2023. You can also provide feedback directly to me on the details below, to Feedback@woodside.com.au or by calling 1800 442 977, or directly to the Australian Government's National Offshore Petroleum Safety and Environmental Management Authority to communications@nopsema.gov.au or (08) 6188 8700.

Please feel free to forward this email and the attached documents to others who you think may be interested as required.

Kind regards



MINERVA DECOMMISSIONING

This is a summary of the activity in plain English. More detailed information can be found in Activity Update - Minerva Decommissioning Environment Plans.

Overview

Woodside is planning to remove all subsea infrastructure and equipment from the seabed for the Minerva Field, located in 50-60 m of water approximately 11 km south-southwest of Port Campbell, Victoria

A map of the location is shown below.



Background

The Minerva Gas Plant commenced production in 2005 and ceased in 2019. At that time, the Minerva wells were isolated and the production system flushed of hydrocarbons. In 2021, the flowlines were disconnected from the wells and barrier plugs installed.

Work Method

The work can be considered in three parts:

- Minerva plug and abandonment and field management**
 Four wells are proposed to be permanently plugged with cement using a moored Mobile Offshore Drilling Unit (MODU) and the well infrastructure above the mudline is proposed to be removed. Other vessels may provide support for this activity. The field will be monitored and inspected, as required, until the equipment is removed. A temporary 1000 m exclusion zone will apply around the MODU and other project vessels. This work is estimated to take up to 60 days and must be completed by mid 2025.
- Minerva Field decommissioning in Commonwealth Waters**
 The gas pipeline bundle and other subsea infrastructure is proposed to be removed. Hydraulic shears will be used to cut the flowline and equipment will be recovered to a Construction Support Vessel (CSV) by crane. This work is estimated to take up to 30 days and must be completed by mid 2025. Figure 1, Figure 2 and Figure 3 show some of the structures and equipment used to remove them.
- Minerva Field decommissioning in State Waters**
 The gas pipeline bundle is proposed to be removed in State Waters, using hydraulic shears and supported by divers, where required. This work is proposed to be done at the same time as decommissioning in Commonwealth Waters.



Figure 1. Minerva Pipeline Bundle Arrangement



Figure 2. Typical Subsea Cutting Activity



Figure 3. Typical Subsea Equipment Recovery Activity

Environmental Impacts and Management

This work program includes Planned Activities but may also result in Unplanned Activities. Both Planned and Unplanned Activities may impact the environment. Woodside manages the work program to reduce impacts and risks to as low as reasonably practical.

Planned Activities are activities that Woodside knows will happen as part of this work program. For example, Planned Activities include other marine users being temporarily stopped from accessing the work area, and the marine vessels and drill rig used for the work may disturb the seabed, generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage), and other authorised waste.

Unplanned Activities are not planned as part of the work program, but may be the result of an accident, incident, or emergency situation. It is highly unlikely that there will be an Unplanned Activity. Unplanned Activities might include a spill of fuel or oil, a release from a well, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with marine animals, waste entering the environment and accidental introduction of invasive species from outside the region. Management measures will be in place to reduce the probability and impacts of these unplanned activities to as low as practical.

A table showing all planned and unplanned activities, potential impacts, and management measures for each is included in the Information Sheet.

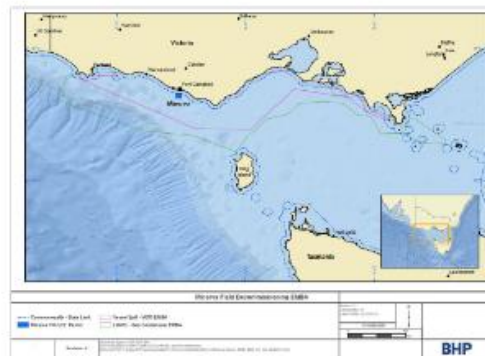
Environment that may be affected

The total area over which unplanned events could have environmental impacts is shown in the maps below. This is referred to as the environment that may be affected (EMBA). In the highly unlikely event such as a fuel spill from a vessel collision or an oil release from one of the wells while drilling, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.

There are two potential EMBAs for the Minerva decommissioning, in the event of:

- Loss of Well Containment during the plugging and abandonment of four production/exploration wells in the Minerva Field by a MODU
- Vessel Spill Marine Diesel Oil (MDO) during the recovery of subsea infrastructure in the Minerva Field using a CSV.

Figure 4 shows the two potential EMBAs.



Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with surveys like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside's work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Providing Feedback

If you have an interest in the area of the "environment that may be affected" (EMBA) by this work program and would like more information or any concerns, you can tell Woodside by calling 1800 442 977 or send an email to Feedback@woodside.com.au.

If you would prefer to speak to the government directly, they can be contacted on +61 (0)8 6188 8700 or send an email to communications@nopsema.gov.au.

Further Information

You can find the details Consultation Information Sheet for proposed activity on our website: <https://www.woodside.com/sustainability/consultation-activities>.

1.45 Letter sent to Fishery Licence Holders (140 licence holders) — 26 July 2023

- Bass Strait Central Zone Scallop Fishery
- Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine
- Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook
- Southern Squid Jig Fishery

Please direct all responses/queries to:
Woodside Feedback
T: 1800 442 977
E: Feedback@woodside.com.au

26 July 2023

1



Woodside Energy Group Ltd

ACN 004 898 962

Mia Yellagonga

11 Mount Street

Perth WA 6000

Australia

T: +61 8 9348 4000

www.woodside.com

Dear Fishery Stakeholder

MINERVA DECOMMISSIONING ENVIRONMENT PLANS

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A 500 m temporary exclusion zone will be in place around the survey vessels to manage vessel movements. There are no restrictions to other vessels within the operational area apart from being advised to take care during the survey vessel activities and to maintain the 500 m exclusion zone around those vessels. Once the decommissioning activities are completed, the petroleum safety zones and any exclusion zones will no longer be in place.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity. The EMBA is the largest spatial extent where unplanned events could potentially have an environmental impact. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our website at woodside.com. You can also subscribe to receive updates on our consultation activities on our website.

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and the Department of Environment, Energy and Climate Action (DEECA) for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **26 August 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former production wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV). Ongoing field management activities	Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.	Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

	(equipment monitoring and inspection).		
Commencement date	Earliest P&A start is anticipated to be around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign is scheduled to avoid activities being conducted in the peak blue pygmy whale foraging season. Removal is planned to be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPs) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	2 x production wells, including	Pipeline bundle encompassing:	Pipeline bundle encompassing:

	<p>xmas tree completion. 2 x exploration wells. The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV. The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each</p>	<ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		<p>group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/Nature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>
Relevant Fisheries:	<p>Commonwealth fisheries</p> <p><u>Operational area:</u></p> <p>Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine</p> <p>Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook</p> <p>Southern Squid Jig Fishery</p>		

EMBA:

Bass Strait Central Zone Scallop Fishery
Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine
Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook
Southern Squid Jig Fishery

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 by **26 August 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) and/or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA and/or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan.

Regards,

Woodside Feedback



Woodside Energy
Mia Yellagonga
Karlak, 11 Mount Street
Perth WA 6000
Australia

T: 1800 442 977
E: feedback@woodside.com.au
www.woodside.com
f t in v o

1.45.1 Reminder Email sent to Fishery Licence Holders (140 licence holders) — 18 August 2023

- Bass Strait Central Zone Scallop Fishery
- Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine
- Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook
- Southern Squid Jig Fishery

Dear Fishery Stakeholder

Woodside previously consulted you (via a letter dated 26 July 2023) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Information on the proposed activity is provided below and in the attached Consultation Information Sheet.

We would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by 26 August 2023.

Kind regards,

Woodside Feedback

1.46 Email sent to Glenelg Shire — 19 June 2023

Dear Glenelg Shire

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters: **Minerva Plug and Abandonment (P&A) and Field Management EP**

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **18 July 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p>	

	June 2025, pursuant to General Direction 831.	Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around The Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	2 x production wells, including xmas tree completion. 2 x exploration wells. The P&A covers the removal of well infrastructure below or as close as practical to the mudline including	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures 	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures

	<p>wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/nature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 18 July 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.46.1 Reminder Email sent to Glenelg Shire — 11 July 2023

Dear Glenelg Shire

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **18 July 2023**.

Regards

Woodside Feedback

1.47 Email sent to Port of Portland — 11 December 2023

Dear [REDACTED]

As part of Woodside's ongoing consultation for its current and planned activities, I would like to advise the Port of Portland that Woodside is preparing three Environment Plans (EPs) for Minerva decommissioning activities as follows:

1. Minerva Plug and Abandonment Environment Plan
 - Well plug and abandonment (P&A) of two former production wells and two exploration wells using a moored Mobile Offshore Drilling Unit (MODU).
 - Removal of well infrastructure above the mudline.
 - Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.
2. Minerva Decommissioning and Field Management Environment Plan
 - Removal of the Minerva gas pipeline bundle in Commonwealth waters.
 - Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth Waters.
3. Minerva Decommissioning and Field Management Environment Plan (State Waters)

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State Waters.

Woodside would like to offer the Port of Portland the opportunity to review or provide comment on the activity. Please note that these assets were previously operated by BHP Petroleum Pty Ltd. (BHP) and, as such, the Port of Portland may have received previous consultation materials for this activity. Following the merger of BHP and Woodside, the EPs have now been revised to align to Woodside's approaches and processes.

Information is presented as follows:

- A Consultation Information Sheet providing information on the proposed activities is available [here](#). This is a combined Information Sheet addressing both the Commonwealth and State operations for Minerva decommissioning activities.
- Oil Pollution First Strike Plans for each of the above EPs are also attached. These will form part of each approval submission in accordance with (as relevant): the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth); the *Victoria Offshore Petroleum and Greenhouse Gas Storage Act 2010*; and the *Victoria Offshore Petroleum and Greenhouse Gas Storage Regulations 2021*.

If you have any feedback on these activities, please respond to Woodside at: Feedback@woodside.com.au or 1800 442 977.

Your feedback and our response will be included in our Environment Plans. The two Commonwealth EPs will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) for acceptance in accordance with the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009* (Cth). The State waters EP will be submitted to Earth Resources Regulation (ERR) branch of the Department of Energy, Environment and Climate Action (DEECA) for acceptance in accordance with the *Victoria Offshore Petroleum and Greenhouse Gas Storage Act 2010* and the *Victoria Offshore Petroleum and Greenhouse Gas Storage Regulations 2021*.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or ERR upon submission of the Environment Plan in order for this information to remain confidential to the respective regulatory body.

Many thanks,

1.48 Email sent to Parks Victoria — 21 December 2023

Dear Parks Victoria

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A 500 m temporary exclusion zone will be in place around the survey vessels to manage vessel movements. There are no restrictions to other vessels within the operational area apart from being advised to take care during the survey vessel activities and to maintain the 500 m exclusion zone around those vessels. Once the decommissioning activities are completed, the petroleum safety zones and any exclusion zones will no longer be in place.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **31 January 2024**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
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Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p> <p>Ongoing field management activities (equipment monitoring and inspection).</p>	<p>Removal of the pipeline bundle, well tie in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement date	<p>Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPS)	<p>P&A and Facilities Removal simultaneous operations (SIMOPs) are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.</p>	<p>The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells</p>	

Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible Mobile Offshore Drilling Unit (MODU). • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)	~5.44 km from The Arches Marine Sanctuary	~1.69 km from The Arches Marine Sanctuary ~5 km from the Twelve Apostles Marine Park

	~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)	~4.74 km from the Twelve Apostles Marine National Park	
Relevant Fisheries:	<p>Commonwealth fisheries</p> <p><u>Operational area:</u> Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook Southern Squid Jig Fishery</p> <p><u>EMBA:</u> Bass Strait Central Zone Scallop Fishery Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook Southern Squid Jig Fishery</p> <p>State fisheries</p> <p><u>Operational area and EMBA:</u> Victorian Rock Lobster Victorian Giant Crab Abalone Wrasse Snapper</p>		

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 31 January 2024**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

1.49 Email sent to Port Campbell Community Group — 31 May 2023

Dear Port Campbell Community Group

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in

Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

Following recent changes to Commonwealth Environment Plan (EP) consultation requirements, Woodside is now consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs, as well as additional information or changes to information previously provided, where applicable. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Activity summary:

Minerva Decommissioning Activities	Well P&A	Facilities Removal (Commonwealth Waters)	Facilities Removal (State Waters)
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Field Decommissioning EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former	Removal of the pipeline bundle, well tie in spools and flying leads,	Removal of the pipeline bundle within State waters.

	productions wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV). Ongoing field management activities (equipment monitoring and inspection).	pipeline structures and stabilisation materials.	Note: the shore crossing will not be removed as part of this campaign
Commencement date	Earliest P&A start is around Q2 2024, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. The pipeline removal campaign will avoid activities being conducted in the peak blue pygmy whale foraging season. Removal will be undertaken in State and Commonwealth waters as a single campaign (30-60 days total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPS)	P&A and Facilities Removal simultaneous operations (SIMOPS) are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the wells.	The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route and 1,500 m around the wells	
Exclusion zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the Construction Support Vessel and the associated project vessels during pipeline removal activities	
Estimated duration	~45 - 60 days	~15 - 30 days	~15 - 30 days
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	2 x production wells, including xmas tree completion.	Pipeline bundle encompassing:	Pipeline bundle encompassing:

	<p>2 x exploration wells. The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • Two ~85 m Gas Production Spools • Four lengths of Chemical Injection Spools • Two lengths of Electric Flying Leads (EFLs) • Two lengths of Hydraulic Flying Leads (HFLs) <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after 	<ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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		<p>deburial using a control flow excavator (CFE) tool.</p> <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> · Semi-submersible Mobile Offshore Drilling Unit (MODU). · MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> · Multipurpose CSV · Supply Vessel 	<ul style="list-style-type: none"> · Multipurpose CSV · Supply Vessel · Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 29 June 2023**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.

Regards

Woodside Feedback

1.49.1 Email sent to Port Campbell Community Group — 23 June 2023

Dear Port Campbell Community Group

Woodside previously consulted you (see email below) on Woodside's plans to undertake subsea decommissioning activities for the Minerva Field.

Proposed activities will occur in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 15 – 60 m.

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management Environment Plan (EP)

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).
- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.

Minerva Field Decommissioning EP

- Removal of the Minerva 10-inch gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 8-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC/PL33(V), in Victorian State waters. The pipeline is proposed to be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from the coastline.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#).

If you have feedback specific to the proposed activities described in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **29 June 2023**.

Regards

Woodside Feedback

2. Activity Update (January 2024)

2.1 Activity Update – Information Sheet – Minerva Decommissioning Environment Plan (12 January 2024)



ACTIVITY UPDATE – MINERVA DECOMMISSIONING ENVIRONMENT PLANS

OTWAY BASIN, SOUTH EAST AUSTRALIA

Overview

Woodside Energy (Victoria) Pty Ltd (Woodside) consults relevant persons in the course of preparing an Environment Plan (EP) to notify them, obtain their input and to assist Woodside to confirm current measures or identify additional measures, if any, that could be taken to lessen or avoid potential adverse effects of the proposed activity on the environment. This is the intended outcome of consultation.

Woodside's aim is to ensure the activity is carried out in a manner that is consistent with the principles of Ecologically Sustainable Development (ESD), by which the environmental impacts and risks of the activity are reduced to As Low As Reasonably Practicable (ALARP) and of an acceptable level. We want relevant persons whose functions, interests or activities may be affected by the proposed activity to have the opportunity to provide feedback on our proposed activity, in accordance with the intended outcome of consultation.

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field (previously operated by BHP Petroleum (Victoria) Pty Ltd (BHP)), located in Commonwealth waters in Petroleum Licence VIC-L22 and Pipeline Licence VIC-PL33, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria and in water depths of approximately -50 – 60 m. The pipeline also traverses State waters in Pipeline Licence VIC-PL33(v). Woodside plans to remove all subsea infrastructure and equipment from the seabed associated with the Minerva development in Commonwealth and State waters (Figure 1).

Regulatory approvals are being sought for the following activities:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).

Minerva Decommissioning and Field Management EP

- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.
- Removal of the Minerva gas pipeline bundle (Figure 2) in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 10-inch concrete coated rigid-steel flowline, banded with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth Waters comprising of five inline pipeline structures, five tie-in spools, and associated equipment and stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC-PL33(v), in Victorian State waters. The pipeline will be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from shore.

Decommissioning of the Minerva field is planned to be undertaken following acceptance of the EPs. Equipment removal activities are planned to commence in Q3 2024 and require approximately three to five months, subject to vessel availability and weather constraints. The P&A activities are expected to commence in Q2 2025 and take approximately two to three months to complete. However, an earlier start in Q1 2025 may be required.

The P&A activities and subsea removal are required to be completed by 30 June 2025, as per the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) General Direction 831.

Following removal, Woodside proposes to dispose of infrastructure onshore in accordance with applicable requirements, assessing all options to reduce waste through reuse or recycling of recovered infrastructure.

The location of the Minerva infrastructure is summarised in Table 1 and proposed decommissioning activities summarised in Table 2.

An EP for the P&A activities has previously been submitted to NOPSEMA for assessment under the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023*. The Minerva Field Decommissioning EP will be submitted to NOPSEMA and the Minerva (State Waters) Decommissioning EP will be submitted to the Department of Energy, Environment and Climate Action (DEECA) under the *Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010*.

This Activity Update provides an overview of proposed activities under each of the three EPs. Woodside has revised the timing and duration of these proposed activities. These changes are in response to engineering work that has been completed and include:

- The timing and duration of the equipment removal and P&A activities have been updated to provide sufficient time to complete the activities.
- Woodside has identified that decommissioning work may encroach on the period between January and March 2025 depending on progress of the activities. This allows for the opportunity to undertake activities during calmer ocean conditions during this period. The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales including:
 - Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period
 - Vessel speed limitations within the operational area during January to March and at other times when whales are observed
 - Additional adaptive management measures when whales are detected, such as monitoring for whales prior to support vessels coming alongside the MODU - if applicable
 - Using only moorings to maintain the MODU position, with no use of MODU thrusters.

Feedback from relevant persons as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and DEECA for assessment.

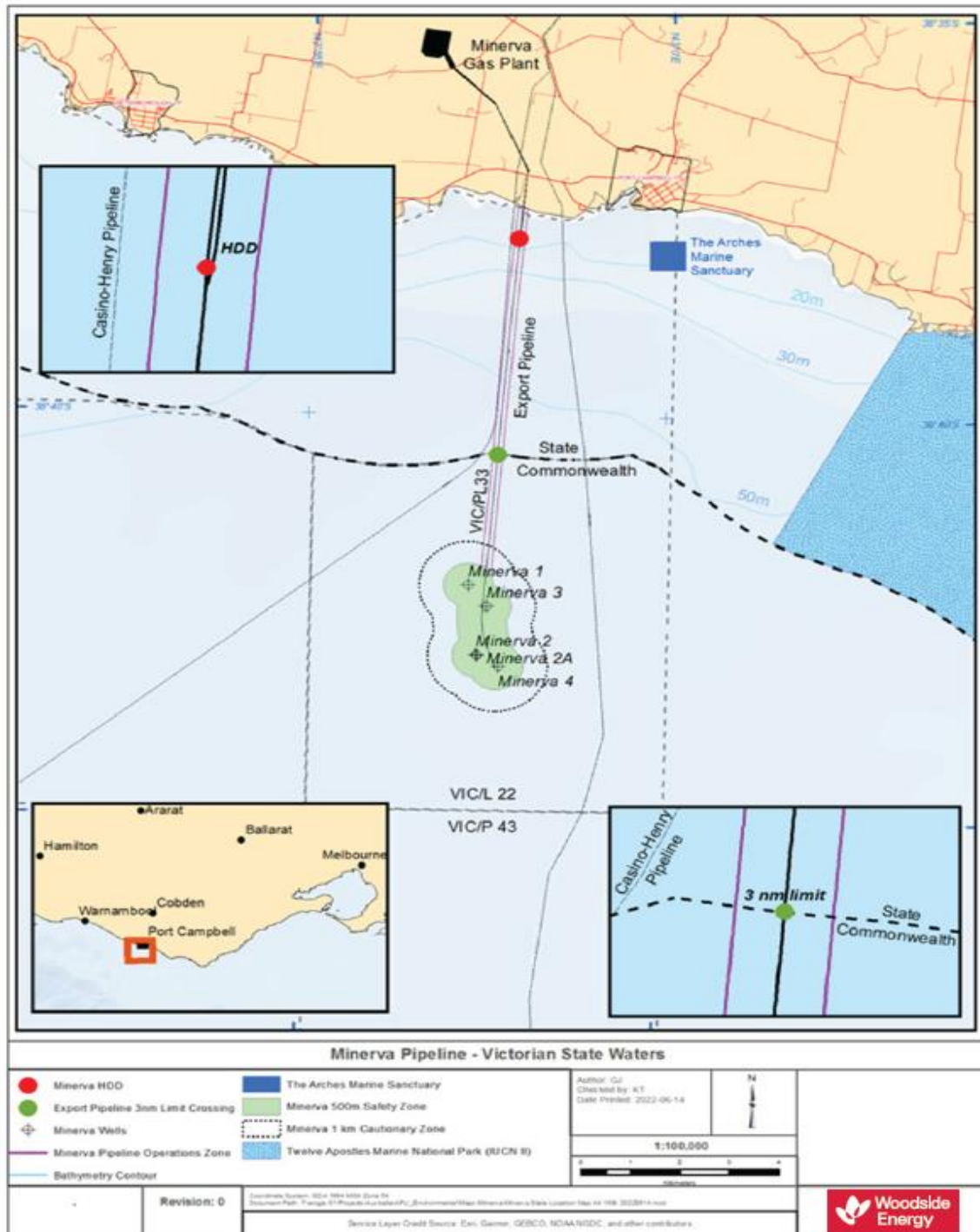


Figure 1. Minerva Location Map

Minerva Decommissioning Background

The offshore wells were drilled in late 2002 and the offshore and onshore pipeline was laid in 2003. The construction of the onshore Minerva Gas Plant was completed in December 2004, and the facilities were commissioned and commenced production in January 2005.

The Minerva field reached the end of its economic production life in September 2019. Immediately following the cessation of production, the Minerva wells were suspended and the subsea system was left in a preserved state (i.e. wells isolated and production system flushed of hydrocarbons) for final decommissioning. The onshore gas plant was sold for reuse to another Operator. A vessel-based campaign was conducted in Q1 2021 to disconnect flowlines from wells and install barrier plugs.

Communications with Mariners

Woodside will implement an Operational Area for the P&A and equipment removal activities. All planned activities will be restricted to within the Operational Area.

Commercial fishers and other marine users are permitted to use but should take care when entering the Operational Area and remain clear of the Exclusion Zone.

It is anticipated that vessels and MODU will operate 24 hours per day for the duration of the P&A activities. The duration of these activities is subject to change due to project schedule requirements, vessel availability, weather or unforeseen circumstances.

Well P&A: The Operational Area includes the area encompassing an approximate 1,500 m radius around each of the four wells within VIC-L22. A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.

Facilities Removal: The Operational Area includes the area encompassing an approximate 1,000 m corridor along the pipeline route. It is intended that a temporary 500 m exclusion zone will apply around the Construction Support Vessel (CSV) and the associated project vessels during removal activities.



Figure 2. Minerva Pipeline Bundle Arrangement



Figure 3. Typical Subsea Cutting Activity

Decommissioning Assessment

Woodside has undertaken an assessment to identify potential impacts and risks to the environment and relevant persons, considering timing, duration, location and environmental aspects of the planned activities. A number of mitigation and management measures will be implemented and are summarised in **Table 3**. Further details will be provided in the EPs.

In preparing the EPs, Woodside's intent is to minimise environmental and social impacts associated with the proposed activities. We are seeking comments and input from relevant persons to inform our decision making and for the intended outcome of consultation (see above).

Joint Venture

Woodside is the Operator of Minerva field on behalf of the Joint Venture Partners. The participants are Woodside Energy (Victoria) Pty Ltd and Cooper Energy (MF) Pty Ltd.

We welcome your feedback by **12 February 2024**.



Figure 4. Typical Subsea Equipment Recovery Activity

Table 1. Activity summary

Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Decommissioning and Field Management EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or CSV.</p>	<p>Ongoing field management activities (monitoring and inspection) prior to removal.</p> <p>Removal of the pipeline bundle, well tie-in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Ongoing pipeline management activities (monitoring and inspection) prior to removal.</p> <p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign.</p>
Commencement date	<p>P&A start is around Q2 2025. However, it may commence Q1 2025, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (three to five months in total).</p> <p>Equipment removal in Commonwealth Waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPs)	<p>P&A and Facilities Removal SIMOPs are not planned but may occur depending on vessel and equipment availability.</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	1,500 m radius around each of the wells	1,000 m buffer along the pipeline route and around subsea infrastructure.	
Exclusion Zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities.	
Estimated duration	Two to three months	Three to five months (removal activities in Commonwealth and State waters)	
Location and water depth	-10.45 km south south-west of Port Campbell in -59 m water depth	-5.5 km to 10.45 km south south-west of Port Campbell in -53 m to 59 m water depth	-1.7 km to 5.5 km south south-west of Port Campbell in -15 m to 53 m water depth

Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Decommissioning and Field Management EP	Minerva (State Waters) Decommissioning EP
Infrastructure	<p>2 x production wells, including xmas tree completion</p> <p>2 x exploration wells</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • 2 -85 m Gas Production Spools and a 1.6 km crossover spool • 2 -85 m Chemical Injection Spools • 2 lengths of Electric Flying Leads (EFLs) • 2 lengths of Hydraulic Flying Leads (HFLs) <p>Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool.</p> <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV cranes with minor cuts made, as required</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of EHU • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a Control Flow Excavator (CFE) tool. • Recovery methods may use diver assist and/or ROV in the shallow water
Vessels	<ul style="list-style-type: none"> • Semi-submersible • MODU supported offshore support vessels. 		<ul style="list-style-type: none"> • Pose CSV • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/nature reserve	<p>-8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>-6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>-5.44 km from The Arches Marine Sanctuary</p> <p>-4.74 km from the Twelve Apostles Marine National Park</p>	<p>-1.69 km from The Arches Marine Sanctuary</p> <p>-5 km from the Twelve Apostles Marine Park</p>

Table 2. Equipment locations (coordinates are GDA94)

Subsea Infrastructure	Latitude (South)	Longitude (East)
Minerva-1 well	-38° 42' 0.6.885"	142° 57' 17.278"
Minerva-2A well	-38° 42' 59.190"	142° 57' 25.742"
Minerva-3 well	-38° 42' 22.718"	142° 57' 32.997"
Minerva-4 well	-38° 43' 0.7368"	142° 57' 44.023"
Pipeline start	-38° 71' 89.530"	142° 96' 14.700"
Pipeline Commonwealth/State boundary point	-38° 40' 29.11"	142° 57' 39.42"
Pipeline end	-38° 62' 96.930"	142° 96' 48.470"

Mitigation and management measures

Woodside has undertaken an assessment to identify potential impacts and risks to the marine environment arising from the decommissioning activities considering timing, duration and location.

A number of mitigation and management measures for the P&A and decommissioning of the Minerva field are outlined in **Table 3**. Further details will be provided in the EPs.

Table 3. Summary of key risks and/ or Impacts and management measures for the Minerva Decommissioning activities. Key risks and/ or Impacts and management measure apply to activities occurring within the Operational Area.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Planned			
Physical presence and interactions with other marine users	<ul style="list-style-type: none"> The activities will be undertaken using a range of project vessels, namely a MODU and CSV, along with general support vessels. A 1,000 m exclusion zone will apply around the MODU and a 500 m exclusion zone around the CSV. Presence of vessels in the safety and exclusion zones has the potential to result in interaction with third-party marine users. 	<ul style="list-style-type: none"> Interference with commercial shipping. Interference with commercial fishing activity. Displacement of recreational fishing activity. Interaction with existing oil and gas infrastructure. 	<ul style="list-style-type: none"> 500 m gazetted petroleum safety zones maintained around Minerva-3 and Minerva-4 wells. 1500 m operational area maintained around the wells and 1000m along the pipeline corridor during activities. 1,000 m exclusion zone established around the MODU and 500 m exclusion zone around the CSV. Activity support vessel(s) to communicate with third-party vessels to assist in maintaining the exclusion zones. Consultation with relevant persons for the consultation outcomes.
Physical presence – disturbance to benthic habitat from MODU anchoring, P&A and removal activities and ROV operations.	<p>Seabed disturbance may result from:</p> <ul style="list-style-type: none"> Removal of excess marine growth from infrastructure prior to removal using high-pressure water jetting. Infrastructure deburial and short-term wet parking of infrastructure may be required. MODU mooring and transponder installation for MODU positioning. Cutting and recovery of infrastructure on the seabed. Temporary equipment laydown or ROV operations. Post decommissioning sediment sampling. 	<ul style="list-style-type: none"> P&A and subsea removal activities including infrastructure deburial, marine growth removal, cutting and recovery of infrastructure, MODU mooring installation, ROV operations and temporary laydown of equipment may result in localized, temporary physical disturbance to benthic habitat and indirect disturbance to benthic habitats from sedimentation. Seabed disturbance as a result of these activities could occur within a localized radius of the Minerva wells and subsea infrastructure locations. Near this area, it is possible that benthic communities may be reduced or altered, leading to a highly localized impact to epifauna and infauna benthic communities. 	<ul style="list-style-type: none"> Use controlled recovery techniques to limit seabed disturbance. Subsea infrastructure to be marked on navigational charts until removal. Project specific mooring design analysis for anchored MODU to reduce the likelihood of anchor drag leading to seabed disturbance. All infrastructure and temporary wet parked equipment will be removed from the seabed on completion of the P&A and removal activities.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Routine Discharges: MODU and Project Vessels	<ul style="list-style-type: none"> Sewage, greywater and putrescible waste will be discharged from MODU and project vessels. Bilge water, deck drainage, brine and cooling water may also be discharged. 	<ul style="list-style-type: none"> The main impact associated with ocean disposal of sewage and other organic wastes (i.e. putrescible waste) is eutrophication. Eutrophication occurs when the addition of nutrients, such as nitrates and phosphates, causes adverse changes to the ecosystem including short-term, localized impacts to water quality. No significant impacts are expected to water quality from planned discharges because of the minor quantities involved, the expected localized mixing zone, and the high level of dilution into the open water marine environment of the Operational Area. Similarly, although some marine fauna may transit the Operational Area, potential for impacts remains low due to the localized nature of discharges and rapid dilution. 	<ul style="list-style-type: none"> All routine marine discharges will be managed according to legislative and regulatory requirements.
Discharges: Decommissioning Activities	<ul style="list-style-type: none"> During infrastructure removal, residual fluid remaining in infrastructure will be drained to the surrounding environment. Fluid includes treated seawater with residual hydrocarbon (less than 5ppm) and other minor volumes of chemicals such as monoethylene glycol (MEG), biocide and water-based hydraulic fluid. Chemical use may be required to remove marine growth and calcium/scale buildup Routine P&A discharges including well kill and well clean up brine, water-based drilling fluids, cement and cementing fluids, residual wellbore fluids including residual hydrocarbon. Routine discharges of subsea control fluid, treated seawater and residual wellbore fluids during subsea tree preparation for P&A. Potential non-routine discharge of unused bulk product. 	<ul style="list-style-type: none"> Localised short-term impacts to water quality from the release of seawater ballast and residual chemicals and hydrocarbons. 	<ul style="list-style-type: none"> All chemicals intended or likely to be discharged into the marine environment reduced to ALARP using the Woodside chemical assessment process. Fluids contaminated with hydrocarbons will be treated to meet specified discharge limits prior to discharge or contained. If discharge specifications are not met the fluid will be returned to shore. During well kill activities, if formation water and any wellbore fluids that are not able to flared, will be processed through a water filtration treatment package prior to discharge to the environment. No bulk cement, bentonite or barite will be discharged without a documented environmental assessment.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Light Emissions	<ul style="list-style-type: none"> Project vessels and MODU will use external lighting to navigate and conduct safe operations at night. Vessel lighting will also be used to communicate the vessel's presence to other marine users (i.e. navigation/warning lights). Light emissions may be generated by flaring during well P&A if required. Flaring is only expected to occur for short durations (hours). 	<p>Light emissions may affect fauna (such as marine turtles and birds) in two main ways:</p> <ol style="list-style-type: none"> Behaviour: artificial lighting has the potential to create a constant level of light at night that can override natural levels and cycles. Orientation: if an artificial light source is brighter than a natural source, the artificial light may override natural cues, leading to disorientation. <ul style="list-style-type: none"> During the decommissioning activities, there is potential a small number of seabirds and migratory shorebirds may be attracted to lighting on the MODU and project vessels. The Operational Area overlaps ten seabird species foraging BIAs. Potential impacts are expected to be limited to localised behavioural disturbance to isolated individuals, with no significant impact to seabird foraging. The Operational Area does not overlap any critical habitat for marine turtle species. Localised behavioural impacts to individual foraging marine turtles from light emissions generated during the activity are considered negligible, with no impact predicted at a community or population level. 	<ul style="list-style-type: none"> Lighting limited to the minimum required for navigational and safety requirements, except for emergency events. Flaring restricted to a duration necessary to perform the activity for well bleed-off. Implementation of a Seabird Management Plan and relevant controls in the National Light Pollution Guidelines for Wildlife including Marine Turtles, Seabirds and Migratory Shorebirds (2020).
Noise Emissions	<ul style="list-style-type: none"> MODU and project vessels will generate noise both in the air and underwater due to the operation of thruster engines, propellers, and the use of cutting tools, or positioning equipment subsea. 	<p>Underwater noise may affect marine fauna, including marine mammals in three main ways:</p> <ol style="list-style-type: none"> By causing direct physical effects, including injury or hearing impairment. Hearing impairment may be temporary or permanent. Through disturbance leading to behavioural changes or displacement from important areas. The occurrence and intensity of disturbance is highly variable and depends on a range of factors relating to the animal and situation. By masking or interfering with other biologically important sounds (including vocal communication, echolocation, signals and sounds produced by predators or prey). <ul style="list-style-type: none"> Predicted noise levels from the MODU and project vessels may have short term behavioural impacts to Pygmy Blue Whales and Southern Right Whales transiting within or utilising a Biologically Important Area (BIA). Marine turtle presence is expected to be infrequent, and potential impacts from predicted noise levels are not considered to be ecologically significant at a population level. Fish, sharks and rays may demonstrate avoidance or attraction behaviour to the noise generated by the activity. However, potential impacts from predicted noise levels are not considered to be ecologically significant at a population level. Woodside has proposed controls that when implemented will ensure activities will not have physical and/or observable biologically significant behavioural disturbance (including breeding, foraging and resting on migration) on these species. Noise levels are expected to be localised, with possible effects limited to, at worst, short-term avoidance behaviour. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for interactions with marine fauna to prevent adverse interactions. Implementation of a Blue Whale and Southern Right Whale Adaptive Management Plan which details adaptive management measures for vessels operating on DP to reduce the risk of displacement of blue whale and southern right whales during the petroleum activities. Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period. Vessel speed limitations within the operational area during January to March and at other times when whales are observed. Additional adaptive management measures when whales are detected, such as monitoring for whales prior to support vessels coming alongside the mobile offshore drilling unit (MODU). Using only moorings to maintain the MODU position, with no use of MODU thrusters. Whale sightings to be reported to support greater environmental knowledge.

Potential Impact/Risk	Description of Source Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Atmospheric Emissions	<ul style="list-style-type: none"> Atmospheric emissions will be generated by the MODU and project vessels from internal combustion engines and incineration activities. Atmospheric emissions will be generated from venting of residual gas and contingent flaring from the MODU during P&A activities. 	<ul style="list-style-type: none"> Emissions from MODU and project vessels could result in temporary, localised reductions in air quality in the immediate vicinity of the vessels. Venting or flaring of hydrocarbon gas may result in a short-lived localised gas plume and a minor contribution to greenhouse gas emissions. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for marine air pollution. Flaring and venting of hydrocarbons is restricted to a duration necessary to perform the P&A activity.
Unplanned			
Unplanned Hydrocarbon Release - Loss of Well Containment during P&A	<ul style="list-style-type: none"> Accidental loss of wellbore fluids and hydrocarbons to the marine environment due to loss of well containment may occur, caused by failure of well barriers during the P&A activity. 	<ul style="list-style-type: none"> A loss of well containment and resulting blowout event is considered to be a highly unlikely event as it has occurred only very infrequently in the industry, and never in the Company's history. Modelling a loss of well containment was undertaken with the outcome, EMBA illustrated in Figure 5. Minerva condensate is a light, non-persistent natured hydrocarbon with a high tendency to evaporate. A release of gas condensate from a loss of well control has the potential to impact an array of receptors. Potential impacts across the whole EMBA were assessed including relevant ecological and socio-economic receptors. Given the limited volumes, low wax content and non-persistent nature of condensate, potential impacts are not expected to persist. The residual risk has been assessed to be tolerable. 	<p>Preventing loss of well containment</p> <ul style="list-style-type: none"> Wells to be permanently plugged in compliance with an accepted Well Operating Management Plan including implementation of barriers to prevent a loss of well containment. Checks completed during well P&A operations to establish minimum acceptable standard of well integrity. An approved Source Control Emergency Response Plan will be prepared prior to P&A, including feasibility and specific considerations for relief well. Subsea blow out preventer specification, installation and testing compliant with internal Woodside Standards and international requirements. <p>Spill Response arrangements</p> <ul style="list-style-type: none"> Arrangements supporting the Oil Pollution Emergency Preparation document (OPEP)/Emergency Response Manual (ERM) will be tested to ensure the OPEP can be implemented as planned. Emergency response activities would be implemented in line with the OPEP/ERM.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Unplanned Hydrocarbon Release – Vessel Collision	<ul style="list-style-type: none"> Project vessels will use marine diesel fuel. In the unlikely event of a vessel collision involving a project vessel or third-party vessels during the activity, there is potential for a release of marine diesel fuel if the collision has enough force to penetrate the vessel hull in the exact location of the fuel tank. 	<ul style="list-style-type: none"> In the highly unlikely event of a vessel collision causing a release of hydrocarbons, impacts to water quality and marine ecosystems could occur. Modelling of a surface release of marine diesel was undertaken at a representative location within the Operational Area. Marine diesel is a relatively volatile, non-persistent natured hydrocarbon with up to 41% evaporating within the first 24 hours. A release of marine diesel from a vessel collision has the potential to impact an array of receptors. Potential impacts across the whole EMBA were assessed including relevant ecological and socio-economic receptors. Potential impacts are considered moderate to significant but are unlikely to persist due to the nature of the marine diesel. The residual risk has been assessed to be tolerable. 	<p>Preventing Vessel Collision</p> <ul style="list-style-type: none"> Comply with regulatory requirements for the prevention of vessel collisions and safety and emergency arrangements. Consult with relevant persons so that other marine users are informed and aware, reducing the likelihood of a collision. Establish temporary exclusion zones around vessels which are communicated to marine users to reduce the likelihood of collision. Develop a management plan for simultaneous operations where multiple campaigns occur concurrently in the same Operational Area. <p>Spill Response Arrangements</p> <ul style="list-style-type: none"> Arrangements supporting the Oil Pollution Emergency Preparation document (OPEP)/Emergency Response Manual (ERM) will be tested to ensure the OPEP can be implemented as planned. Emergency response activities would be implemented in line with the OPEP/ERM.
Chemical and Hydrocarbon Spills (Deck Spills and Bunkering)	<ul style="list-style-type: none"> Accidental loss of chemicals or hydrocarbons to the marine environment during bunkering/ refuelling may occur caused by partial or total failure of a bulk transfer hose or fittings due to operational stress or other integrity issues. Accidental spills of chemicals or hydrocarbons from MODU or project vessel deck activities and equipment. 	<ul style="list-style-type: none"> Accidental loss of such chemicals from the MODU or vessels to the marine environment could occur as a result of failure of bulk transfer hoses or fittings during bunkering, spillage during handling, inadequate bunding and/ or storage, inadequate method of securing or tank/ pipework failure, leak from equipment or rupture or failure of ROV hydraulic hoses whilst underwater. Spills from bunkering/refuelling or deck activities could result in short term, localised impacts to water quality or marine fauna in the immediate area surrounding the spill. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for the prevention of marine pollution. Chemicals will be selected with the lowest practicable environmental impacts and risks subject to technical constraints and approved through the Woodside chemical assessment process. Liquid chemical and fuel storage areas bunded or secondarily contained when they are not being handled or temporarily moved. Maintain and locate spill kits in close proximity to hydrocarbon storage and deck areas for use to contain and recover deck spills. Appropriate bunkering equipment kept and maintained, and contractors to follow procedures and requirements for bunkering and refuelling to reduce the likelihood of a spill.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Unplanned Discharge of Solid Hazardous/ Non-Hazardous Waste/ Equipment	<ul style="list-style-type: none"> Accidental, unplanned loss of hazardous or non-hazardous solid wastes/equipment to the marine environment may occur if dropped or blown overboard. 	<ul style="list-style-type: none"> The potential impacts of hazardous or non-hazardous solid wastes and equipment accidentally discharged to the marine environment include contamination of the environment as well as secondary impacts relating to potential contact of marine fauna with wastes. The temporary or permanent loss of waste materials/ equipment into the marine environment is not likely to have a significant environmental impact, based on the location of the Operational Area, the types, size and frequency of wastes that could occur, and species present. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for the prevention of marine pollution and handling of hazardous wastes. Implement a Waste Management Plan. Solid waste/equipment dropped to the marine environment will be recovered where safe and practicable to do so. Where retrieval is not practicable and/ or safe, material items (property) lost to the marine environment will undergo an impact assessment and will be added to the inventory for the title.
Unplanned Interaction with Marina Fauna	<ul style="list-style-type: none"> Accidental collision between project vessels and protected marine fauna. 	<ul style="list-style-type: none"> Vessel movements have the potential to result in accidental collisions between the vessel (hull and propellers) and marine fauna. The risk of vessel collision with marine mammals is present year-round but is seasonally elevated for species such as pygmy blue whales during foraging periods and southern right whales when resting on migration (May - October). Given the short duration of activities within the Operational Area, and the slow speeds at which project vessels operate collisions with cetaceans are considered highly unlikely. 	<ul style="list-style-type: none"> Compliance with legislative and regulatory requirements for interactions with marine fauna to reduce the likelihood of a collision occurring.
Disturbance to Seabed from Dropped Objects and Unplanned Anchor Drag	<ul style="list-style-type: none"> Accidental, unplanned dropping of objects overboard from project vessels during recovery operations. High energy weather conditions, occurring while the MODU is on station, can lead to excessive loads on the mooring lines, resulting in failure (either anchor(s) dragging or mooring lines parting). 	<ul style="list-style-type: none"> In the unlikely event of an object being dropped or mooring failure, potential environment effects should be limited to minor physical damage to seabed and benthic communities in a localized area. 	<ul style="list-style-type: none"> MODU and project vessel inductions include control measures and training for crew in dropped object prevention. Lost waste/ dropped objects will be recovered where safe and practicable to do so. Procedures for lifts, bulk transfers and cargo loading if an unplanned object release does occur. Project-specific Mooring Design Analysis and mooring system testing undertaken to reduce the likelihood of mooring failure or anchor drag.

Potential Impact/Risk	Description of Source of Potential Impact/Risk	Description of Potential Impacts	Proposed Mitigation and/or Management Measure
Accidental Introduction of Invasive Marine Species (IMS)	<ul style="list-style-type: none"> Vessels transiting to the Operational Area may be subject to marine fouling whereby organisms attach to the vessel hull. Organisms can also be drawn into ballast tanks during onboarding of ballast water. IMS could also be present as biofouling on submersible equipment. 	<ul style="list-style-type: none"> There is potential for the transfer of IMS between the project vessels while in its currently location within the Operational Area. 	<ul style="list-style-type: none"> Ballast water and biofouling will be managed according to regulatory requirements, including the Australian Ballast Water Management Requirements, and the Australian Biofouling Management Requirements, as applicable. Woodside's IMS risk assessment process will be applied to the MODU, project vessels and submersible equipment entering the Operational Area.
Indirect			
Waste Generation	<ul style="list-style-type: none"> Removal of the Minerva subsea infrastructure will result in the generation of waste products. 	<ul style="list-style-type: none"> Generation of waste products that require appropriate management. 	<ul style="list-style-type: none"> Waste generated on the MODU and project vessels, including recovered infrastructure will be managed in accordance with legislative requirements. Recovered infrastructure will be transported onshore by a licensed waste contractor for disposal including recycling and reuse opportunities. Infrastructure and resource recovery strategy that ensures waste is handled and disposed of in accordance with applicable legislation, monitors and tracks waste and sets KPIs for recycling and reuse of decommissioned infrastructure.

Feedback

If you would like to comment on the proposed activities outlined in this information sheet, or would like additional information, please contact Woodside before **12 February 2024** via:

E: Feedback@woodside.com

Toll free: 1800 442 977

You can subscribe on our website to receive Consultation Information Sheets for proposed activities:
www.woodside.com/sustainability/consultation-activities.

Please note that stakeholder feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) and the Department of Energy, Environment and Climate Action DEECA) as required under legislation. Woodside will communicate any material changes to the proposed activity to affected stakeholders as they arise.

Please note that your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) and the Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA or DEECA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA or DEECA.



2.2 Activity Update – Summary Information Sheet – Minerva Decommissioning Environment Plan — 12 January 2024



SUMMARY INFORMATION SHEET

CONSULTATION

January 2024

MINERVA DECOMMISSIONING

This is a summary of the activity in plain English. More detailed information can be found in Activity Update - Minerva Decommissioning Environment Plans – January 2024.

Overview

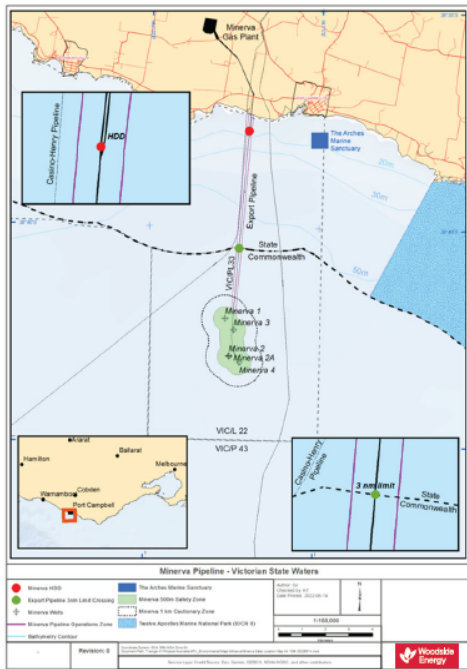
Woodside is planning to remove all subsea infrastructure and equipment from the seabed for the Minerva Field, located in 50-60 m of water approximately 11 km south-southwest of Port Campbell, Victoria.

Decommissioning is priority work for Woodside at the end of a project's life. The Minerva field produced gas for the world's energy needs for 15 years. We are fully committed to decommissioning in the area in a safe, timely, and culturally and environmentally responsible way. We are doing this work in carefully planned stages.

Background

The Minerva Gas Plant commenced production in 2005 and ceased in 2019. At that time, the Minerva wells were isolated and the production system flushed of hydrocarbons. In 2021, the flowlines were disconnected from the wells and barrier plugs installed.

A map of the location is shown below.



Work Method and Timing

The work can be considered in three parts:

- Minerva plug and abandonment and field management**
 Four wells are proposed to be permanently plugged with cement using a moored Mobile Offshore Drilling Unit (MODU) and the well infrastructure above the mudline is proposed to be removed. Other vessels may provide support for this activity. The field will be monitored and inspected, as required, until the equipment is removed. A temporary 1000 m exclusion zone will apply around the MODU and other project vessels. This work is estimated to take between two and three months and must be completed by mid-2025.
- Minerva Field decommissioning in State Waters**
 The gas pipeline bundle is proposed to be removed in State Waters, using hydraulic shears and supported by divers, where required. This work is proposed to be done at the same time as decommissioning in Commonwealth Waters. Minerva Field decommissioning in Commonwealth Waters. The gas pipeline bundle and other subsea infrastructure is proposed to be removed. Hydraulic shears will be used to cut the flowline and equipment will be recovered to a Construction Support Vessel (CSV) by crane. This work is estimated to take between three and five months (both Commonwealth and State waters) and must be completed by mid-2025. Figure 1, Figure 2 and Figure 3 show some of the structures and equipment used to remove them.

Woodside has revised the timing and duration of the proposed decommissioning activities to be able to remove equipment and complete the plugging of wells in calmer waters.

We want to avoid working during the pygmy blue whale foraging season (January to March) in 2025 but this may be required. We have put in extra protocols to limit any impact to whales. There is more information on this on page 2.



Figure 1. Minerva Pipeline Bundle Arrangement



Figure 2. Typical Subsea Cutting Activity



Figure 3. Typical Subsea Equipment Recovery Activity

Environmental Impacts and Management

This work program includes Planned Activities but may also result in Unplanned Activities. Both Planned and Unplanned Activities may impact the environment. Woodside manages the work program to reduce impacts and risks to as low as reasonably practical.

Planned Activities are activities that Woodside knows will happen as part of this work program. For example, Planned Activities include other marine users being temporarily stopped from accessing the work area, and the marine vessels and drill rig used for the work may disturb the seabed, generate underwater noise, light emissions, atmospheric emissions, and routine discharges (such as sewage, waste, and deck drainage), and other authorised waste.

Unplanned Activities are not planned as part of the work program, but may be the result of an accident, incident, or emergency situation. It is highly unlikely that there will be an Unplanned Activity. Unplanned Activities might include a spill of fuel or oil, a release from a well, a spill on the deck of a vessel (such as during refuelling), unplanned seabed disturbance, accidental collision with marine animals, waste entering the environment and accidental introduction of invasive species from outside the region. Management measures will be in place to reduce the probability and impacts of these unplanned activities to as low as practical.

A table showing all planned and unplanned activities, potential impacts, and management measures for each is included in the Information Sheet.

One planned impact is noise emissions. Underwater noise may affect marine fauna. Part of the decommissioning work may need to happen in the period between January and March 2025 depending on progress due to weather. This is a peak foraging time for pygmy blue whales in the region.

Woodside will have measures to limit possible impacts to whales during this time. These are:

- Trained marine fauna observers (MFOs) on vessels to monitor for whales. Their only task is to monitor for whales. MFOs are trained to spot whales and know whale species, like the pygmy blue whale. MFOs are also trained on whale behaviour. They will know if a whale has any change in behaviour that might prevent it from foraging.
- Speed limits on vessels when whales are spotted.
- Using only moorings to hold the MODU position, with no use of MODU thrusters that create noise.
- Other measures when whales are detected including delaying vessel work and close monitoring when vessels come alongside the mobile offshore drilling unit (MODU).

Environment that may be affected

The total area over which unplanned events could have environmental impacts is shown in the maps below. This is referred to as the environment that may be affected (EMBA). In the highly unlikely event such as a fuel spill from a vessel collision or an oil release from one of the wells while drilling, the entire EMBA will not be affected. The part of the EMBA that is affected will only be known at the time of the event.

There are two potential EMBA's for the Minerva decommissioning, in the event of:

- Loss of Well Containment during the plugging and abandonment of four production/exploration wells in the Minerva Field by a MODU
- Vessel Spill Marine Diesel Oil (MDO) during the recovery of subsea infrastructure in the Minerva Field using a CSV.

Figure 4 shows the two potential EMBA's.

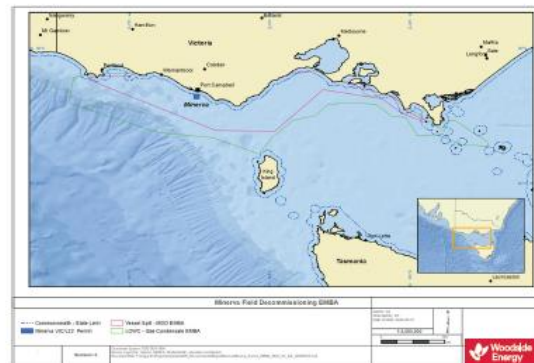


Figure 4. Environment that may be affected (EMBA) for the proposed activity.

Conclusion

Woodside produces energy that Western Australia, Australia, and the world needs. Woodside has made this energy from its oil and gas projects in Western Australia for over 35 years safely, reliably, and without any major environmental incident. Woodside is very proud of this legacy.

There are always potential risks with projects like this. Woodside has carefully planned this work program so that the risk of environmental impact is reduced to as low as reasonably practical and of an acceptable level. There are also strict government laws in place to protect the environment. Woodside complies with these laws and has systems in place to keep following these laws and rules for each project it undertakes.

If you would like information about Woodside's work to study and care for the environment, you can find it at <https://www.woodside.com/sustainability/environment>.

Providing Feedback

If you have an interest in the area of the "environment that may be affected" (EMBA) by this work program and would like more information or any concerns, you can tell Woodside by calling 1800 442 977 or send an email to Feedback@woodside.com.au.

If you would prefer to speak to the government directly, they can be contacted on +61 (0)8 6188 8700 or send an email to communications@nopsema.gov.au.

Further Information

You can find the details Consultation Information Sheet for proposed activity on our website:

<https://www.woodside.com/sustainability/consultation-activities>.

2.3 Email sent to relevant Victorian Shire Councils — 12 January 2024

- Bass Coast Shire
- Colac Otway Shire
- Corangamite Shire Council
- City of Greater Geelong
- Mornington Peninsula Shire
- Moyne Shire
- Borough of Queenscliffe
- South Gippsland Shire
- Warrnambool City Council
- Glenelg Shire

Dear (*insert relevant council name*)

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

- Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period
- Vessel speed limitations within the operational area during January to March and at other times when whales are observed
- Additional adaptive management measures when whales are detected, such as monitoring for whales prior to support vessels coming alongside the mobile offshore drilling unit (MODU) – if applicable
- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Regards

Woodside Feedback

2.3.1 Email sent to relevant Victorian Shire Councils — 25 January 2024

- Bass Coast Shire
- Colac Otway Shire
- Corangamite Shire Council
- City of Greater Geelong
- Mornington Peninsula Shire
- Moyne Shire
- Borough of Queenscliffe
- South Gippsland Shire
- Warrnambool City Council
- Glenelg Shire

Dear *(insert name)*

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

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If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.4 Email sent to Surf Coast Shire – 12 January 2024

Dear Surf Coast Shire

Thank you again for your previous correspondence from June 2023. As stated in our reply, we would like to reiterate that the Minerva activities are decommissioning only, which means the removal of all subsea infrastructure and equipment from the seabed associated with the Minerva development in Commonwealth and State waters. Minerva ceased operation in 2019.

As also stated, we are keeping you updated on all activities.

Woodside previously provided information to you (below) in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
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Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

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We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Regards

2.4.1 Email sent to Surf Coast Shire – 25 January 2024

Dear Surf Coast Shire

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.5 Email sent to fishery stakeholders — 12 January 2024

- South Eastern Professional Fishermen's Association Inc.
- Australian Southern Bluefin Tuna Industry Association (Cth)

Dear Fishery stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

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Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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Regards

2.5.1 Email sent to fishery stakeholders — 25 January 2024

- South Eastern Professional Fishermen's Association Inc.
- Australian Southern Bluefin Tuna Industry Association (Cth)

Dear Fishery Stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.6 Email sent to relevant fishery stakeholders — 12 January 2024

- Australian Southern Bluefin Industry Association (ASBTIA)

Dear Fishery Stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

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Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

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Feedback

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2.6.1 Email sent to relevant fishery stakeholders — 25 January 2024

- Australian Southern Bluefin Industry Association (ASBTIA)

Dear fishery stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.7 Email sent to Victorian fishery stakeholders — 12 January 2024

- South Eastern Professional Fishermen's Association Inc
- Victorian Fishing Authority (VFA)
- Apollo Bay Fisherman's Co-operative
- Abalone Council Victoria
- Abalone Victoria Central Zone
- Abalone Fishery (through Abalone Council Victoria)
- VR Fish
- Victorian Scallop Fishermen's Association Inc

Dear Fishery Stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Dear Fishery Stakeholder

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Regards

Woodside Feedback

2.8 Email sent to Commonwealth fishery stakeholders — 12 January 2024

- Commonwealth Fisheries Association (CFA)
- Australian Southern Bluefin Tuna Industry Association (ASBTIA)
- Bass Strait Scallop Industry Association (BSSIA)
- South East Trawl Fishing Industry Association (SETFIA)
- Southern Shark Industry Alliance (SSIA)

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2.8.1 Email sent to Commonwealth fishery stakeholders — 25 January 2024

- Commonwealth Fisheries Association (CFA)
- Australian Southern Bluefin Tuna Industry Association (ASBTIA)
- Bass Strait Scallop Industry Association (BSSIA)
- South East Trawl Fishing Industry Association (SETFIA)
- Southern Shark Industry Alliance (SSIA)

Dear Fishery Stakeholder

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Regards

Woodside Feedback

2.9 Email sent to Fishery Licence Holders (140 licence holders) — 12 January 2024

- Bass Strait Central Zone Scallop Fishery
- Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine
- Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook
- Southern Squid Jig Fishery

Dear Fishery Stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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- Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period
- Vessel speed limitations within the operational area during January to March and at other times when whales are observed
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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

2.9.1 Email sent to relevant fishery stakeholders (140 licence holders) — 25 January 2024

- Bass Strait Central Zone Scallop Fishery
- Southern and Eastern Scalefish and Shark Fishery – CTS and Danish Seine
- Southern and Eastern Scalefish and Shark Fishery – Shark Gillnet and Shark Hook
- Southern Squid Jig Fishery

Dear *(insert name)*

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.10 Email sent to relevant State fishery stakeholders — 12 January 2024

- Warrnambool Professional Fishermen's Association
- Victoria Rock Lobster Association (VRLA)
- Eastern Victorian Rock Lobster Industry Association
- Southern Rock Lobster Limited

Dear Fishery Stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 50-60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).

Minerva Decommissioning and Field Management EP

- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.
- Removal of the Minerva gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 10-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters -- comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC-PL33(v), in Victorian State waters. The pipeline will be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from shore.

Woodside is consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and Department of Energy, Environment and Climate Action (DEECA) for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by 12 February 2024.

Activity summary:

Minerva Decommissioning Activities			
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Decommissioning and Field Management EP	Minerva (State Waters) Decommissioning EP
Summary	Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells). Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).	Ongoing field management activities (monitoring and inspection) prior to removal. Removal of the pipeline bundle, well tie-in spools and flying leads, pipeline structures and stabilisation materials.	Ongoing pipeline management activities (monitoring and inspection) prior to removal. Removal of the pipeline bundle within State waters. Note: the shore crossing will not be removed as part of this campaign

Commencement Date	P&A start is around Q2 2025. However, it may commence Q1 2025, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.	Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints. Removal will be undertaken in State and Commonwealth waters as a single campaign (three to five months in total). Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.	
Simultaneous Operations (SIMOPs)	P&A and Facilities Removal SIMOPs are not planned but may occur depending on vessel and equipment availability		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	1,500 m radius around each of the wells.	1,000 m buffer along the pipeline route and around subsea infrastructure.	
Exclusion Zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities.	
Estimated duration	Two to three months	Three to five months (removal activities in Commonwealth and State waters)	
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	2 x production wells, including xmas tree completion. 2 x exploration wells.	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines 	Pipeline bundle encompassing: <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines

	<p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<ul style="list-style-type: none"> • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • 2 ~85 m Gas Production Spools and a 1.6 km crossover spool • 2 ~85 m Chemical Injection Spools • 2 lengths of Electric Flying Leads (EFLs) • 2 lengths of Hydraulic Flying Leads (HFLs) <p>Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool.</p> <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	<ul style="list-style-type: none"> • 1 EHU • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a CFE tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.
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Vessels	<ul style="list-style-type: none"> • Semi-submersible MODU. • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback-

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 12 February 2024.**

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) and the *Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010*.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

2.10.1 Email sent to relevant State fishery stakeholders — 25 January 2024

- Warrnambool Professional Fishermen’s Association
- Victoria Rock Lobster Association (VRLA)
- Eastern Victorian Rock Lobster Industry Association
- Southern Rock Lobster Limited

Dear Fishery Stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

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Regards

Woodside Feedback

2.11 Email sent to Australian Border Force (ABF) — 12 January 2024

Dear ABF

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

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Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

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Regards

Woodside Feedback

2.12 Email sent to Department of Industry, Science and Resources (DISR)— 12 January 2024

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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2.12.1 Email sent to Department of Industry, Science and Resources (DISR) — 25 January 2024

Dear DISR

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.13 Email sent to DAFF – Biosecurity and Fisheries — 12 January 2024

Dear DAFF – Biosecurity and Fisheries

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.14 Email sent to Environment Victoria — 12 January 2024

Dear Environment Victoria

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

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Feedback

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2.14.1 Email sent to Environment Victoria — 25 January 2024

Dear Environment Victoria

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
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If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

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Regards

Woodside Feedback

2.15 Email sent to Marine Mammal Foundation — 12 January 2024

Dear Marine Mammal Foundation

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

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Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

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Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

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2.15.1 Email sent to Marine Mammal Foundation — 25 January 2024

Dear Marine Mammal Foundation

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.16 Email sent to Tuna Australia — 12 January 2024

Dear [REDACTED]

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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- Minerva Plug and Abandonment (P&A) and Field Management
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Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

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Regards

2.17 Email sent to Australian Coastal Society – Victorian Chapter — 12 January 2024

Dear Australian Coastal Society – Victoria

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

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Feedback

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2.17.1 Email sent to Australian Coastal Society – Victoria Chapter — 25 January 2024

Dear Australian Coastal Society

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.18 Email that Seafood Industry Victoria (SIV) distributed to represented fisheries — 9 February 2024

- Rock Lobster Fishery
- Giant Crab Fishery
- Wrasse Fishery
- Snapper Fishery

Dear

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Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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Woodside Energy Feedback

2.19 Email sent to the Maritime Union Australia (MUA) — 12 January 2024

Dear

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Woodside Feedback

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Regards

Woodside Feedback

2.20 Email sent to Fisheries Research and Development Corporation (FRDC) — 12 January 2024

Dear Fisheries Research and Development Corporation

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Woodside Feedback

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Regards

2.21 Email sent to CSIRO – 12 January 2024

Dear ■■■

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.21.1 Email sent to CSIRO – 25 January 2024

Dear Stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.22 Email sent to Australian Conservation Foundation (ACF) – 12 January 2024

Dear

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Woodside Energy Feedback

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Woodside Feedback

2.23 Email sent to Blue Whale Study – 12 January 2024

Dear Blue Whale Study

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- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

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Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

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Woodside Energy Feedback

2.23.1 Email sent to Blue Whale Study — 25 January 2024

Dear Blue Whale Study

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.24 Email sent to Greenpeace Australia Pacific (GAP) – 12 January 2024

Dear [REDACTED]

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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Woodside Energy Feedback

2.24.1 Email sent to Greenpeace Australia Pacific (GAP) – 25 January 2024

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Regards

Woodside Feedback

2.25 Email sent to Australian Institute of Marine Science (AIMS) — 12 January 2024

Dear [REDACTED]

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Woodside Energy Feedback

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Regards

Woodside Feedback

2.26 Email sent to Otway recreational marine users and local bodies like visitor information centres and chambers of commerce — 12 January 2024

Recreational Marine Users, Group 1:

- Apollo Bay Dive Centre and Surf
- Apollo Bay Fishing Charters
- Apollo Bay Surf and Kayak
- Dive Industry Association of Australia
- Go Surf School
- SCUBA Divers Federation of Victoria
- Apollo Bay Surf Lifesaving Club
- Apollo Bay Sailing Club
- Ocean Racing Club of Victoria
- Twelve Apostles Helicopters Tours

Others:

- Port Campbell Visitor Information Centre
- Apollo Bay Visitor Information Centre
- Warrnambool Visitor Information Centre
- Apollo Bay Chamber of Commerce

Dear *(name inserted here)*

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Woodside Energy Feedback

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Others:

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Dear *(insert name)*

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Regards

Woodside Feedback

2.27 Email sent to Director of National Parks (DNP) — 12 January 2024

Dear Director of National Parks

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Woodside Feedback

2.28 Email sent to Deakin University - School of Life and Environmental Sciences— 12 January 2024

Dear Deakin University - School of Life and Environmental Sciences

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Regards

Woodside Feedback

2.29 Email sent to Department of Transport and Planning (DTP) — 12 January 2024

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Woodside Energy Feedback

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Woodside Feedback

2.30 Email sent to Parks Victoria — 12 January 2024

Dear Parks Victoria

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority

(NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

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2.30.1 Email sent to Parks Victoria — 25 January 2024

Good morning,

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.31 Email sent to Australian Fisheries Management Authority (AFMA) — 12 January 2024

Dear AFMA

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

- Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period
- Vessel speed limitations within the operational area during January to March and at other times when whales are observed
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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

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While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

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Woodside Energy Feedback

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Regards

Woodside Feedback

2.32 Email sent to Heritage Victoria — 12 January 2024

Dear Heritage Victoria

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

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Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

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Feedback

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Woodside Energy Feedback

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Regards

Woodside Feedback

2.33 Email sent to relevant Victorian Fisheries Authority (VFA) — 12 January 2024

- Victorian Fishing Authority (VFA)
- Apollo Bay Fishermen's Co-Operative

Dear Fishery Stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
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- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions. The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **10 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

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Woodside Energy Feedback

2.33.1 Email sent to relevant Victorian Fisheries Authority (VFA) — 25 January 2024

- Victorian Fishing Authority (VFA)
- Apollo Bay Fishermen's Co-Operative

Dear Fishery Stakeholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.34 Email sent to Department of Climate Change, Energy, the Environment and Water (DCCEEW) — 12 January 2024

Dear DCCEEW

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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Woodside Energy Feedback

2.34.1 Email sent to Department of Climate Change, Energy, the Environment and Water (DCCEEW) — 25 January 2024

Dear DCCEEW

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.35 Email sent to Department of Energy, Environment and Climate Action (DEECA, Earth Resources Regulator |Resources Victoria) — 12 January 2024

Dear DEECA

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
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Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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Woodside Energy Feedback

2.35.1 Email sent to DEECA, Earth Resources Regulator | Resources Victoria — 25 January 2024

Dear [REDACTED] (DEECA)

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Regards

Woodside Feedback

**2.36 Email sent to Titleholders (Beach Energy, Cooper Energy and Conoco Phillips) —
12 January 2024**

Dear Titleholder

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.37 Email sent to relevant ports — 12 January 2024

- Port of Melbourne
- Port of Hastings
- Port of Warrnambool

Dear Port of *(insert)*

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.38 Email sent to Department of Defence (DoD) — 12 January 2024

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

- Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period
- Vessel speed limitations within the operational area during January to March and at other times when whales are observed
- Additional adaptive management measures when whales are detected, such as monitoring for whales prior to support vessels coming alongside the mobile offshore drilling unit (MODU) - if applicable
- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Woodside Energy Feedback

2.38.1 Email sent to Department of Defence (DoD) — 25 January 2024

Dear Department of Defence

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.39 Email sent to Australian Energy Producers (AEP) (formerly APPEA) — 12 January 2024

Dear AEP

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

- Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period
- Vessel speed limitations within the operational area during January to March and at other times when whales are observed
- Additional adaptive management measures when whales are detected, such as monitoring for whales prior to support vessels coming alongside the mobile offshore drilling unit (MODU) - if applicable
- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Woodside Energy Feedback

2.39.1 Email sent to AEP (formerly APPEA) — 25 January 2024

Dear AEP

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.40 Email sent to AHO/AMSA (Marine Safety) — 12 January 2024

Dear [REDACTED]

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory

approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

- Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period
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- Additional adaptive management measures when whales are detected, such as monitoring for whales prior to support vessels coming alongside the mobile offshore drilling unit (MODU) - if applicable
- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Woodside Energy Feedback

2.40.1 Email sent to AHO/AMSA — 25 January 2024

Dear AMSA/AHO

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management

- Minerva (State Waters) Decommissioning

If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.41 Email sent to tour operators and community groups — 12 January 2024

- Great Ocean Road Coast and Parks Authority
- Great Ocean Road Regional Tourism
- Twelve Apostles Tourism and Business Group

Dear (each tour operator or community group individually addressed)

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Woodside Energy Feedback

2.41.1 Email sent to tour operators and community groups — 25 January 2024

- Great Ocean Road Coast and Parks Authority
- Great Ocean Road Regional Tourism
- Twelve Apostles Tourism and Business Group

Dear *(insert name)*

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
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If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.42 Email sent to Port of Portland — 12 January 2024

Dear [REDACTED]

Thank you again for advising Woodside of the Port of Portland's responsibility for pollution response. We committed to provide you with any further updates in relation to our Minerva decommissioning activities.

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field (below), which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

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The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Woodside Energy Feedback

2.42.1 Email sent to Port of Portland — 25 January 2024

Dear [REDACTED]

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.43 Email sent to Otway recreational marine users — 12 January 2024

Recreational Marine Users, Group 2:

- Academy of Scuba
- Allfresh Seafood
- Anglesea Motor Yacht Club
- Boating Industry Association of Victoria
- Diving Industry Victoria
- Beach Patrol 3280
- Paddle Victoria
- Point Leo Boat Club
- Port Fairy Yacht Club
- Rye Yacht Club
- Victoria Game Fishing Club
- Warrnambool Yacht Club
- Western Abalone Divers Association
- Port Campbell Surf Lifesaving Club

Dear Stakeholder

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 50-60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).

Minerva Decommissioning and Field Management EP

- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.
- Removal of the Minerva gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 10-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters -- comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC-PL33(v), in Victorian State waters. The pipeline will be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from shore.

Woodside is consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and Department of Energy, Environment and Climate Action (DEECA) for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by 12 February 2024.

Activity summary:

Minerva Decommissioning Activities			
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Decommissioning and Field Management EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former production wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p>	<p>Ongoing field management activities (monitoring and inspection) prior to removal.</p> <p>Removal of the pipeline bundle, well tie-in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Ongoing pipeline management activities (monitoring and inspection) prior to removal.</p> <p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement Date	<p>P&A start is around Q2 2025. However, it may commence Q1 2025, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (three to five months in total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPs)	<p>P&A and Facilities Removal SIMOPs are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>1,500 m radius around each of the wells.</p>	<p>1,000 m buffer along the pipeline route and around subsea infrastructure.</p>	
Exclusion Zones	<p>A temporary 1,000 m exclusion zone will apply around</p>	<p>A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities.</p>	

	the MODU and the associated project vessels during P&A activities.		
Estimated duration	Two to three months	Three to five months (removal activities in Commonwealth and State waters)	
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • 2 ~85 m Gas Production Spools and a 1.6 km crossover spool • 2 ~85 m Chemical Injection Spools 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 EHU • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a CFE tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<ul style="list-style-type: none"> • 2 lengths of Electric Flying Leads (EFLs) • 2 lengths of Hydraulic Flying Leads (HFLs) <p>Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool.</p> <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible MODU. • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback-

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 **by 12 February 2024.**

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) and the *Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010*.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

2.43.1 Email sent to Otway recreational marine users — 25 January 2024

Recreational Marine Users, Group 2:

- Academy of Scuba
- Allfresh Seafood
- Anglesea Motor Yacht Club
- Boating Industry Association of Victoria
- Diving Industry Victoria
- Beach Patrol 3280
- Paddle Victoria
- Point Leo Boat Club
- Port Fairy Yacht Club
- Rye Yacht Club
- Victoria Game Fishing Club
- Warrnambool Yacht Club
- Western Abalone Divers Association
- Port Campbell Surf Lifesaving Club

Dear *(insert business name)*

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.44 Email sent to Friends of the Earth (FOE) – 15 January 2024

Dear [REDACTED]

Woodside previously provided information to you via my colleague Stephen Munday in relation to the decommissioning of the Minerva gas field. The consultation information sheet previously sent is available [here](#).

Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions. The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

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- Using only moorings to maintain the MODU position, with no use of MODU thrusters.

We will continue to assess additional mitigation measures as required and are committed to reducing impacts to whales to a level that is as low as reasonably practicable and acceptable.

While Woodside has identified that works may be required during the January to March period, our intention is to avoid works during this period where practicable. Woodside will continue to implement our standard controls to manage impacts to whales, such as complying with relevant requirements and communicating whale sightings to government agencies.

The revised Consultation Information Sheet to reflect these updates is attached.

Feedback

If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Your feedback and our response will be included in our EPs for the proposed activities, which will be submitted to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation. Your feedback may also be used to support other regulatory processes associated with the planned activities (which may or may not be confidential).

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

NOPSEMA has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

Best regards

2.45 Email sent to Local Conservation Groups — 12 January

- Otway Water
- Warrnambool Coastcare Landcare Network
- Apollo Bay Landcare
- Otway Climate Emergency Action Network (OCEAN)

Dear *(insert name)*

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

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If you have feedback specific to this updated information, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

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Woodside Energy Feedback

2.45.1 Email sent to Local Conservation Groups — 25 January

- Otway Climate Emergency Action Network (OCEAN)
- Otway Water
- Warrnambool Coastcare Landcare Network
- Apollo Bay Landcare

Dear *(insert name)*

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
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If you have feedback specific to this updated information, we would welcome your feedback at Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the EPs, in order for this information to remain confidential to NOPSEMA.

Regards

Woodside Feedback

2.46 Email sent to Department of Premier and Cabinet (DPC), First Peoples State Relations — 15 January 2024

Hi [REDACTED],

In advance of our discussion on Wednesday, please see below and attached our consultation information for the Minerva decommissioning Environment Plans.

Woodside is planning to undertake subsea decommissioning activities for the Minerva Field located in

Commonwealth and State waters, approximately 11 km south-southwest (SSW) of the township of Port Campbell, Victoria in water depths ranging from approximately 50-60 m.

Regulatory approvals are being sought for the following activities in Commonwealth and State waters:

Minerva Plug and Abandonment (P&A) and Field Management EP

- Well P&A of two former production wells and two exploration wells in Commonwealth waters by placing cement plugs in the wells to permanently prevent hydrocarbon release using a moored Mobile Offshore Drilling Unit (MODU).
- Removal of well infrastructure above the mudline (wellheads and subsea xmas trees).

Minerva Decommissioning and Field Management EP

- Ongoing field management activities (inspection and monitoring) for the Minerva subsea and well infrastructure until final decommissioning.
- Removal of the Minerva gas pipeline bundle in Commonwealth waters. The pipeline comprises of approximately 4.9 km of 10-inch concrete coated rigid-steel flowline, bundled with an electro-hydraulic umbilical and two 2-inch steel chemical injection lines and stabilisation materials.
- Removal of Minerva subsea infrastructure within VIC-L22 in Commonwealth waters -- comprising of five inline pipeline structures, two tie-in spools and associated stabilisation material.

Minerva (State Waters) Decommissioning EP

- Removal of the Minerva pipeline bundle and stabilisation materials in VIC-PL33(v), in Victorian State waters. The pipeline will be recovered up to the horizontal directional drill (HDD) location, approximately 800 m from shore.

Woodside is consulting relevant persons whom are located within the environment that may be affected (EMBA) by a proposed petroleum activity.

The EMBA is the largest spatial extent where unplanned events could potentially have an environmental consequence. For these EPs, the broadest extent of the EMBA has been determined by the highly unlikely event of a hydrocarbon release to the environment as result of a vessel collision or a loss of well containment during P&A activities.

A Consultation Information Sheet is attached, which provides additional background on the proposed activities, including summaries of potential key impacts and risks, and associated management measures. This is also available on our [website](#). You can also subscribe to receive updates on our consultation activities by subscribing [here](#).

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) has published a brochure entitled [Consultation on offshore petroleum environment plans – Information for the Community](#) to help community members understand consultation requirements for Commonwealth EPs and how to participate in consultation.

The following provides an overview of proposed activities under each of the three EPs. Feedback as part of current consultation activities will be included in revisions to the EPs, which will be submitted to NOPSEMA and Department of Energy, Environment and Climate Action (DEECA) for assessment.

If you have feedback specific to the proposed activities described under the activity summary below or in the Consultation Information Sheet, we would welcome this at Feedback@woodside.com.au or 1800 442 977 by 12 February 2024.

Activity summary:

Minerva Decommissioning Activities			
Environment Plan	Minerva Plug and Abandonment and Field Management EP	Minerva Decommissioning and Field Management EP	Minerva (State Waters) Decommissioning EP
Summary	<p>Permanent P&A of 4 wells (2 former productions wells, 2 exploration wells).</p> <p>Removal of wellhead and subsea trees, by the MODU or Construction Support Vessel (CSV).</p>	<p>Ongoing field management activities (monitoring and inspection) prior to removal.</p> <p>Removal of the pipeline bundle, well tie-in spools and flying leads, pipeline structures and stabilisation materials.</p>	<p>Ongoing pipeline management activities (monitoring and inspection) prior to removal.</p> <p>Removal of the pipeline bundle within State waters.</p> <p>Note: the shore crossing will not be removed as part of this campaign</p>
Commencement Date	<p>P&A start is around Q2 2025. However, it may commence Q1 2025, subject to approvals, MODU vessel availability and weather constraints. P&A must be completed by no later than 30 June 2025, pursuant to General Direction 831.</p>	<p>Planned removal activities are anticipated to commence from Q3 2024, subject to environmental approvals, vessel availability and weather constraints.</p> <p>Removal will be undertaken in State and Commonwealth waters as a single campaign (three to five months in total).</p> <p>Equipment removal in Commonwealth waters must be completed no later than 30 June 2025, pursuant to General Direction 831.</p>	
Simultaneous Operations (SIMOPs)	<p>P&A and Facilities Removal SIMOPs are not planned but may occur depending on vessel and equipment availability</p>		
Petroleum Title	VIC-L22	VIC-L22, VIC-PL33	VIC-PL33(v)
Operational Area	<p>1,500 m radius around each of the wells.</p>	<p>1,000 m buffer along the pipeline route and around subsea infrastructure.</p>	

Exclusion Zones	A temporary 1,000 m exclusion zone will apply around the MODU and the associated project vessels during P&A activities.	A temporary 500 m exclusion zone will apply around the CSV and the associated project vessels during removal activities.	
Estimated duration	Two to three months	Three to five months (removal activities in Commonwealth and State waters)	
Location and water depth	~10.45 km south south-west of Port Campbell in ~59 m water depth	~5.5 km to 10.45 km south south-west of Port Campbell in ~53 m to 59 m water depth	~1.7 km to 5.5 km south southwest of Port Campbell in ~15 m to 53 m water depth
Infrastructure	<p>2 x production wells, including xmas tree completion.</p> <p>2 x exploration wells.</p> <p>The P&A covers the removal of well infrastructure below or as close as practical to the mudline including wellheads and xmas trees that may be conducted on the MODU or otherwise be covered during the facilities removal campaign by the CSV.</p> <p>The EP includes ongoing field maintenance activities, such as inspection, as required until equipment is removed.</p>	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 4.95 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 length of Electro-Hydro Umbilical (EHU) • 821 Piggyback clamps • Stabilisation structures <p>Inline field equipment comprising:</p> <ul style="list-style-type: none"> • 2 Umbilical Termination Assemblies and protection structures • 2 Subsea Safety Isolation Valve Assemblies and protection structures • 1 Pipeline End Module Assembly and protection structure <p>Equipment from wells to the pipeline bundle:</p> <ul style="list-style-type: none"> • 2 ~85 m Gas Production Spools and 	<p>Pipeline bundle encompassing:</p> <ul style="list-style-type: none"> • 5.0 km of 10-inch steel pipeline • 2 lengths of Chemical Injection Lines • 1 EHU • 832 Piggyback clamps • Stabilisation structures <p>The recovery method options being considered for each group of equipment are as follows:</p> <ul style="list-style-type: none"> • Pipeline bundle will be cut with hydraulic shears and recovered after deburial using a CFE tool. • Recovery methods may use diver assist and/or Remotely Operated Vehicle (ROV) in the shallow water.

		<p>a 1.6 km crossover spool</p> <ul style="list-style-type: none"> • 2 ~85 m Chemical Injection Spools • 2 lengths of Electric Flying Leads (EFLs) • 2 lengths of Hydraulic Flying Leads (HFLs) <p>Pipeline bundle, rigid spools and flying leads will be cut with hydraulic shears and recovered after deburial using a control flow excavator (CFE) tool.</p> <p>Flowline and stabilisation structures will be recovered by reverse install method by the CSV crane with minor cuts made, as required.</p>	
Vessels	<ul style="list-style-type: none"> • Semi-submersible MODU. • MODU supported by 2 – 3 offshore support vessels 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel 	<ul style="list-style-type: none"> • Multipurpose CSV • Supply Vessel • Small Size Dive Air Vessel for operations near the shoreline, should diving operations be required
Distance to nearest marine park/mature reserve	<p>~8.5 km from The Arches Marine Sanctuary (Minerva-1 well)</p> <p>~6.2 km from the Twelve Apostles Marine National Park (Minerva-1 well)</p>	<p>~5.44 km from The Arches Marine Sanctuary</p> <p>~4.74 km from the Twelve Apostles Marine National Park</p>	<p>~1.69 km from The Arches Marine Sanctuary</p> <p>~5 km from the Twelve Apostles Marine Park</p>

Feedback-

If you have feedback specific to the proposed activities described under the proposed EPs, we would welcome your feedback at: Feedback@woodside.com.au or 1800 442 977 by **12 February 2024**.

Please note that feedback will be communicated to the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) or the Department of Energy, Environment and Climate Action (DEECA) as required under legislation.

Your feedback and our response will be included in the Environment Plans for the proposed activities, which will be submitted to NOPSEMA or DEECA for acceptance in accordance with the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Cth) and the *Victorian Offshore Petroleum and Greenhouse Gas Storage Act 2010*.

Please let us know if your feedback for this activity is sensitive and we will make this known to NOPSEMA upon submission of the Environment Plan in order for this information to remain confidential to NOPSEMA.

2.47 Email sent to Australian Maritime Safety Authority (AMSA)-Marine Pollution — 12 January 2024

Dear [REDACTED]

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

- Minerva Plug and Abandonment (P&A) and Field Management
- Minerva Decommissioning and Field Management
- Minerva (State Waters) Decommissioning

Due to weather constraints in the region, Woodside anticipates the Minerva decommissioning activities may require additional time.

Equipment removal activities in Commonwealth and Victorian waters are expected to commence in the third quarter of 2024 and require approximately three to five months; we previously advised a start in early 2024.

A rig has been contracted for the well plugging activities, which are currently anticipated to commence in the second quarter of 2025. It is anticipated the rig activities will take two to three months. Activity timing and duration is subject to weather conditions, vessel and rig availability, and regulatory approvals which may result in an earlier start. Commencing in the period between January and March 2025 allows for the opportunity to undertake activities during calmer ocean conditions.

The January to March period is a peak foraging period for pygmy blue whales in the region, and Woodside had previously indicated work during this period was not required. Woodside will adopt several additional mitigation measures to limit potential impacts to whales given that works may now overlap the peak in pygmy blue whale foraging in the region, including:

- Dedicated trained marine fauna observers on vessels during January to March to monitor for whale presence, with trained vessel crew observing for marine fauna outside this period
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Woodside Energy Feedback

2.47.1 Email sent to AMSA-Marine Pollution — 25 January 2024

Dear AMSA – Marine Pollution

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field. Planning work to decommission the field is progressing and, as part of our Environment Plan consultation, below is updated information on our planned activities.

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Regards

Woodside Feedback

2.48 Email sent to Port Campbell Community Group – 12 January 2024

Dear Port Campbell Community Group

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

This update relates to the following Environment Plans:

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Feedback

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Woodside Energy Feedback

2.49 Email sent to Australian Marine Conservation Society (AMCS) — 12 January 2024

Dear *(name inserted here)*

Woodside previously provided information to you in relation to the decommissioning of the Minerva gas field, which is available [here](#). Planning work to decommission the field is progressing, and as part of our Environment Plan consultation, below is updated information on our planned activities.

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Woodside Energy Feedback

2.49.1 Australian Marine Conservation Society (AMCS) — 25 January 2024

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Regards

Woodside Feedback

Appendix G Cultural Heritage Search Results

Heritage Sites within EMBA (Source: Victorian Heritage Database <https://vhd.heritagecouncil.vic.gov.au/>)

Hermes ID	VHI Number	VHR Number	Site Name
6593	H7121-0011	NA	Cape Bridgewater Road
4950	NA	H1773	Cape Nelson Lightstation
12694	H7221-0300	NA	Quarantine Complex & Quarry
12242	H7221-0301	NA	USAF B57
12208	H7221-0289	NA	Twin Engine - Lady Percy Island
6717	H7321-0005	NA	Rabbiters Rockshelter
6719	H7321-0007	NA	Griffith Island Hut
2711	NA	H1659	Griffiths Island
149549	H7321-0096	NA	Port Fairy Whim Foundations
2386	NA	H1504	Battery Hill
162055	H7321-0098	NA	Government Tramway, Bridge and Jetty
155115	H7321-0060	NA	Coastal Government Jetty Site
149742	H7321-0088	NA	Middle Island Lightstation Complex
1619	NA	H2124	Warrnambool Breakwater
149739	H7321-0091	NA	Lady Bay Tramway and Tramway Jetty Site
14228	NA	H2261	Great Ocean Road
1914	NA	H1222	Cape Otway Lightstation
120452	H7620-0014	NA	Wye River Jetty
12711	NA	H2032	Bells Beach Surfing Recreation Reserve
1693	NA	H1517	Point Lonsdale Maritime and Defence Precinct
8635	H7821-0031	NA	The White Lighthouse (and associated features)
200972	NA	H2367	Shortlands Bluff
8607	H7821-0002	NA	Queenscliff Fort
2596	NA	H1515	Steamer Pier & Lifeboat Shed
14113	H7821-0094	NA	Queenscliff Bight Fishermen's Moorings
8628	H7821-0024	NA	Popes Eye Fort
12390	H7821-0073	NA	Chinaman's Hat - Caisson M
3256	NA	H2030	Point Nepean
12209	H7721-0076	NA	RAAF - B25
12206	H7721-0075	NA	RAAF - Mitchell
10260	H7921-0031	NA	Flinders Cave 1
208208	NA	H2413	Flinders Telegraph Cable Complex and Pier
4942	NA	H1842	Wilson's Promontory Lightstation