Esso Australia Resources Pty Ltd (“Esso”)

COBIA PIPELINE REPAIR PROJECT
ENVIRONMENT PLAN SUMMARY

EAPL-CBAPRP-PLN-040

REVISION HISTORY

Rev	Revision / Status	Date	Prepared
1	Revised incorporating NOPSEMA comments	17 December 2018	JA
0	Issued for NOPSEMA Review	10 December 2018	JA

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Abbreviations

AFFF	Aqueous Film-Forming Foam Concentrates
AFMA	Australian Fisheries Management Authority
AHT	Anchor Handling Tug
AIS	Automatic Identification System
ALARP	As Low As Reasonably Practicable
AMOSC	Australian Marine Oil Spill Centre
AMP	Australian Marine Park (formerly Commonwealth Marine Reserve)
AMSA	Australian Maritime Safety Authority
ANZECC	Australian and New Zealand Environment and Conservation Council
APASA	RPS Asia Pacific Applied Science Association
APPEA	Australian Petroleum Production and Exploration Association
AQIS	Australian Quarantine Inspection Service (now Department of Agriculture and Water Resources; DAWR)
ASOG	Activity Specific Operating Guidelines
ATBA	Area To Be Avoided
BBMT	Barry Beach Marine Terminal
BHPB	BHP Billiton Petroleum (Bass Strait) Pty Ltd
BIA	Biologically Important Area
BOM	Bureau of Meteorology
BSCZSF	Bass Strait Central Zone Scallop Fishery
CBA	Cobia
CBA PRP	Cobia Pipeline Repair Project
CHARM	Chemical Hazard and Risk Management Model
CMR	Commonwealth Marine Reserve
CSR	Client Site Representative
CVIT	Commonwealth Victoria Inshore Trawl
DAWR	Department of Agriculture and Water Resources (previously AQIS; also Ag. Dept.)
DEDJTR	Department of Economic Development, Jobs, Transport and Resources Victoria
DELWP	Department of Environment, Land, Water and Planning Victoria
DO	Diesel Oil
DoEE	Department of the Environment and Energy
DoIIS	Department of Industry, Innovation and Science
DP	Dynamically Positioned
DSV	Dive Support Vessel
EAPL	Esso Australia Pty Ltd
EARPL	Esso Australia Resources Pty Ltd
EEZ	Exclusive Economic Zone
EMBA	Environment that May Be Affected (also see ZPI)
ENVID	Environmental Hazard Identification workshops
EP	Environment Plan
EPA	Environment Protection Authority
EPBC	Environment Protection and Biodiversity Conservation
ERA	Environmental Risk Assessment
ERM	Emergency Response Manual
ESD	Ecologically Sustainable Development
ESG	Emergency Support Group
EWMM	Esso Work Management Manual
FIMS	Facility Integrity Management System
GBJVOA	Gippsland Basin Joint Venture Operational Agreement
GEMS	Diamond Offshore GEMS Procedures (Global Excellence Management System)
GHG	Greenhouse Gases
gt	gross tonne

HAZID	Hazard Identification workshops
HLA	Halibut
HMCS	OSPAR Harmonised Mandatory Control Scheme (HMCS)
HOCNF	OSPAR Harmonised Offshore Chemical Notification Format (OCNS)
HIRA	Hazard Identification & Risk Assessment
HP	High Pressure
ICS	Incident Control System
IMO	International Maritime Organisation
IMT	Incident Management Team
JV	Joint Venture
KEF	Key Ecological Feature
KPI	Key Performance Indicators
LEFCOL	Lakes Entrance Fishing Co-operative Limited
LEL	Lower Exposure Limit
LMRP	Lower Marine Riser Package
LO	Lubricating Oil
LPG	Liquid Petroleum Gas
MARPOL 73/78	International Convention for the Prevention of Pollution from Ships
MDO	Marine Diesel Oil
MDRT	Measured Depth from Rotary Table
MEPC	(IMO) Marine Environment Protection Committee
MES	Monitoring, Evaluation and Surveillance
MLWL	Mean Low Water Level
MT	Metric Ton
MoC	Management of Change
SDS	Safety Data Sheet (previously Material Safety Data Sheet, MSDS)
MSL	Mean Sea Level
NEBA	Net Environmental Benefit Analysis (see OPEP)
NEPM	National Environment Pollution Measures
NM	Nautical Mile
NOPSEMA	National Offshore Petroleum Safety and Environmental Management Authority
NSW	New South Wales
OCNS	Offshore Chemical Notification Scheme (CEFAS 2017)
OI	Operations Integrity
OGUK	Oil and Gas UK (previously UKOOA)
OIMS	Operations Integrity Management System
OIW	Oil-In-Water
OSMP	Operational and Scientific Monitoring Program
OSPAR	OSPAR Commission - manages Harmonised Mandatory Control Scheme (HMCS)
OSRA	Oil Spill Resource Atlas
OSRL	Oil Spill Response Limited
OSV	Offshore Support Vessel
OPEP	Oil Pollution Emergency Plan
OPGGS Act	Offshore Petroleum and Greenhouse Gas Storage Act 2006
OPGGS(E) Regs	Offshore Petroleum and Greenhouse Gas Storage Environment Regulations 2009
ORCA	Oilspill Resources Company of Australia
OSR	Oil Spill Response
OSTM	Oil Spill Trajectory Modelling
PEC	Predicted Environmental Concentration
PFAS	Per- and poly-Fluoroalkyl Substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PHA	Preliminary Hazard Analysis

PIC	Person In Charge
PNEC	Predicted No Effect Concentrations
PRP	Pipeline Repair Project
PSZ	Petroleum Safety Zone
RA	Risk Assessment
RAMSAR	Convention on Wetlands of International Importance
RC	Required Competencies
RO	Reverse Osmosis
ROV	Remotely Operated Vehicle
RRT	Regional Response Team
SESSF	Southern and Eastern Scale-fish and Shark Fishery
SETF	South Eastern Trawl Fishery
SFRT	Subsea First Relief Toolkit
SIV	Seafood Industry Victoria
SMART	Special Monitoring of Applied Response Technologies
SMPEP	Shipboard Marine Pollution Emergency Plan (carried by vessels of 150 GT and above, certified to carry noxious liquid substances in bulk)
SOPEP	Shipboard Oil Pollution Emergency Plan (carried by vessels over 400 GT)
SSHE	Safety, Security, Health, Environment
SSoW	Safe system of work
SS7	Subsea 7
TD	Total Depth
TRA	Task Risk Assessment
TSS	Traffic Separation Scheme
WCDS	Worst Credible Discharge Scenario
WMP	Waste Management Plan
ZPI	Zone of Potential Impact

1 Introduction

1.1 Overview

This Environment Plan (EP) Summary has been prepared in accordance with the requirements of the Commonwealth Offshore Petroleum and Greenhouse Gas Storage Act 2006 and the Offshore Petroleum and Greenhouse Gas Storage (Environment) (OPGGS(E)) Regulations 2009, per the amended Act and Regulations as at 01 January 2015. The EP development has been guided by N04750-GN1344 Environment Plan Content Requirements (NOPSEMA 2016).

The scope of the EP is to manage the environmental risks and impacts associated with all activities relating to the Cobia Pipeline Repair Project (CBA PRP) to be undertaken by a Dive Support Vessel (DSV), the Subsea 7 'Seven Eagle'. Activities included in the scope of the EP include cutting the existing Cobia to Halibut (CBA300) oil export pipeline at either end and connection and tie-in of a new flexible pipeline (CBA150) between the Cobia (CBA) and Halibut (HLA) platforms. The EP also addresses leaving the redundant CBA300 section in-situ until future decommissioning plans are developed. Note that the new CBA150 pipeline and redundant CBA300 section are both included within the pipeline licence variation that was gazetted on 19th October 2018 (Ref. Government Notices Gazette C2018G00828 19/10/2018).

The CBA PRP operational area is located approximately 65km off the Victorian coastline within Production Licence VIC/L05 and consists of the 500 m Safety Exclusion Zone around the CBA and HLA platforms, the route of the CBA150 and CBA300 pipeline (VIC/PL15) and DSV and project support vessels when conducting petroleum activities.

The EP was accepted by NOPSEMA on the 29th November 2018.

1.2 Titleholder

Production Licence VIC/L05 and Pipeline Licence VIC/PL15 are held by Esso Australia Resources Pty Ltd (EARPL) and BHP Billiton Petroleum (Bass Strait) Pty Ltd (BHPB) as 50:50 co-venturers in the Gippsland Basin Joint Venture.

Esso is a titleholder of the Production Licence over the Halibut and Cobia fields and associated VIC/PL15 Pipeline Licence, as defined in the OPGGS (E) Regulations 2009, details as below:

Esso Australia Resources Pty Ltd (ACN 091 829 819)
Level 9, 664 Collins Street
Docklands VIC 3008
Telephone: +61 3 9261 0000

The environmental contact for this activity is:

Carolyn Thomas
Esso Australia Pty Ltd for and on behalf of Esso Australia Resources Pty Ltd
Risk, Environment and Regulatory Supervisor
Telephone: (03) 9261 0260
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EARPL receives services, including personnel, from its wholly owned subsidiary, Esso Australia Pty Ltd (EAPL).

2 Description of the Activity

2.1 Location

The CBA300 pipeline is a 300mm diameter, 5.5 km long oil export line running from the CBA platform to the HLA platform (Figure 2-1). The pipeline is located approximately 65km off the Gippsland coast, in between approximately 73m and 78m of water depth.

Following a small leak in 2013, a pressure-containing clamp was installed on the pipeline approximately 80m from CBA. Following a subsequent minor leak, detected in December 2014, CBA platform and the CBA300 pipeline were shut in. The pipeline was filled with inhibited seawater, isolated and is currently out-of-service (OOS).

The coordinates for CBA and HLA platforms, and pipeline details are provided in Table 2-1.

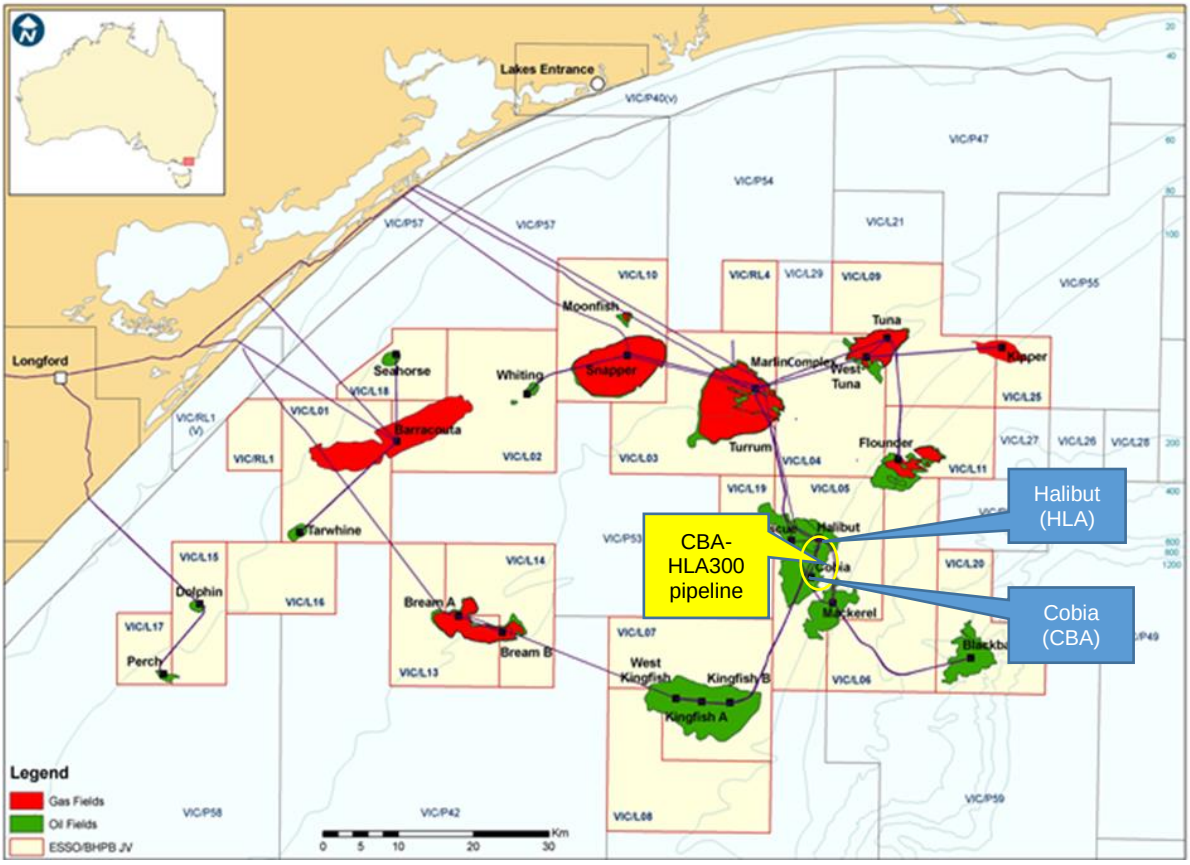


Figure 2-1 The CBA PRP pipeline location in VIC/L05, Gippsland Basin

Table 2-1 Location of CBA PRP Facilities

Production Licence No.	Facility Name	Code	Easting Latitude	Northing Longitude	Depth (m)
VIC/L05	Cobia platform	CBA	614 233 mE 38° 26' 58"	5 743 509 mN 148° 18' 32"	78
VIC/L05	Halibut platform	HLA	615 278 mE 38° 24' 15"	5 748 506 mN 148° 19' 13"	73
Pipeline Licence No.	**Facility Name**	**Approx Length (km)**	**DN (mm)**	**Approximate Ops flowrates**	**Product**
VIC/PL15	CBA-HLA oil pipeline	5.5	300/150	1200 m^3/day 5000 m^3/day	Crude oil Including water

2.2 Timing

The actual pipeline repair activities within the operational area are scheduled over an estimated two week period, commencing late 2018, however this will be dependent on weather and operational aspects at the time.

This EP will remain in force to cover the management of the 'wet stored' redundant CBA300 section and presence of the CBA150 pipeline until the five-yearly revision of the Central Fields EP has been accepted.

2.3 CBA PRP Activity Overview

The CBA PRP activity is broken down into the following main tasks:

1. Survey & pre-lay seabed preparation
2. Preparation of existing infrastructure
3. Pipeline crossing set-up
4. Pipe lay and installation of dropped object protection
5. Connection to platforms
6. Stabilisation
7. Hydrotest
8. Final survey

These are explained further in the following sections:

2.3.1 Survey & Pre-Lay Seabed Preparation

One of the first tasks will be to survey the flexible pipeline route to ensure it is free of obstructions and locate the existing / redundant CBA300 pipeline and the (buried) HLA100 secondary line at the planned flexible crossing location. The survey will be conducted from the Seven Eagle and may involve ROV operations.

2.3.2 Prepare Existing Infrastructure

2.3.2.1 Platform topside activities

Minor preparation works will take place at CBA and HLA in advance of the arrival of the DSV and these will be conducted under the existing Central Fields EP.

2.3.2.2 DSV activities at CBA end

CBA PRP activities at CBA will involve a mixture of ROV and saturation diving operations, conducted off the Seven Eagle, including

- Inspect for and removal of any debris caught or hanging from jacket members that could pose a safety risk to divers. Inspect and move any debris that lies along the lay path and pull in path of the flexible pipeline.
- Cut the CBA300 platform riser at a level above the lower riser bend weld to suit the flexible and on the horizontal spool before the CBA300 tow sled. Minor quantities of the contents of the pipeline will be released during this stage.
- If necessary, remove the top half of the existing clamp on the horizontal section of the CBA300 spool within the CBA jacket lower horizontal bracing level and remove the cut section of CBA300 spool.
- Install a mechanical pipe plug on the horizontal section of the CBA300 spool within the CBA jacket lower horizontal bracing level to seal the cut end of the remaining section of the now redundant CBA300 pipeline.
- Blast clean the outside of the CBA300 riser pipe to bare metal and inspect the riser end.
- Install DN300 flanged end connector on the end of the riser.

- Inspect and test the installed connector to verify it has been correctly and securely installed on the riser.
- Install the short DN300 to DN150 reducer transition spool to the CBA DN300 flanged end connector.

2.3.2.3 DSV activities HLA end

Similar to the CBA end, PRP activities at HLA will involve a mixture of ROV and saturation diving operations, conducted off the Seven Eagle, including

- Cut and remove a section from the HLA platform riser and spool just above the lower riser bend weld and near the HLA end tow sled. Minor quantities of the contents of the pipeline will be released during this stage.
- Install a mechanical pipe plug on the horizontal section of the CBA300 spool to seal the cut end of the remaining section of the redundant CBA300 pipeline near the HLA tow sled.
- Blast clean the outside of the HLA riser pipe to bare metal and inspect the riser end.
- Install DN300 flanged end connector on the end of the riser.
- Inspect and test the installed connector to verify it has been correctly and securely installed on the riser.
- Install the short DN300 to DN150 reducer transition spool to the flanged end connector.

2.3.3 Pipeline Crossing Set-up

The flexible pipeline repair will cross two existing pipelines near HLA, these are the redundant CBA300 pipeline and the HLA100 fuel gas secondary line.

2.3.4 Pipe Lay

The Seven Eagle will lay the flexible pipeline between HLA and CBA platforms on the west side of the existing CBA300 and HLA100 pipelines, except within the HLA 500m petroleum safety zone. The ends will be laid down to enable the ends to be pulled-in and allow connection to the risers. Any pipeline over-length will be installed within the CBA 500m petroleum safety zone. The ends of the flexible pipeline will be installed as close to the tie-in points as practicable to minimise the pull in activities. The plan is to install the ends within 25m of the platform while maintaining a safe separation between the DSV and the platforms.

The flexible will be transported and installed full of dyed demineralised water treated with an oxygen scavenger.

Dropped object protection will also be installed on the pipeline on-board the DSV prior to installation near both platforms. Dropped object protection will be provided within 60m of the HLA end of the flexible pipeline and 45m of the CBA end. The dropped object protection will be ‘Uraduct’ or similar, strapped around the flexible pipeline.

ROVs will be used to support the pipe lay and to check the touchdown and location of the flexible.

2.3.5 Connection to Platforms

Divers and ROVs will be used to pull-in and connect the new flexible pipeline, to the transition spools and flanged end connectors at CBA and HLA. Hydraulic tools, rigging, winches and air bags will be used by the divers to assist in the installation of the new facilities.

During the tie-in, the end flanges will have to be removed from the flexible and minor quantities of the dyed, treated demineralised water will be released.

2.3.6 Flexible Pipeline Stabilisation

The project will install nine concrete stabilisation mattresses on the new flexible pipeline (at the crossing over the redundant CBA300 and HLA100 pipelines near HLA and at both platform approaches) to

provide design life stability and to ensure any flexible pipeline movement in the vicinity of the crossing does not lead to damage to the flexible pipeline. The mattresses will be lowered from the vessel and manoeuvred into location with the ROV and / or divers.

2.3.7 Testing

The flexible pipeline will have been hydrotested to above the leak test pressure during testing following its manufacture in Denmark.

Once installed offshore, a leak test will be conducted on the completed pipeline system from topsides to topsides and a visual inspection of all flange connections with divers or ROV completed. In the event of a test failure, visual inspection will be conducted by ROV and or divers to locate and repair any leaks, once complete this will lead to a retest.

2.3.8 Final Survey

An as-built ROV video survey of the completed flexible pipeline from HLA riser end connector flange to CBA riser end connector flange will be undertaken upon completion of the installation to confirm location. The DSV shall recover all CBA PRP temporary equipment and materials.

The redundant CBA300 pipeline between HLA and CBA will be plugged and left in-situ following the completion of the CBA PRP. Decommissioning requirements for this pipeline will be assessed and developed in conjunction with other Bass Strait facilities.

The CBA PRP is depicted in schematic form in Figure 2-2.

2.4 Dive Support Vessel (DSV)

The Seven Eagle (IMO Number 9015905, Registration Monrovia, Liberia) is a DP II construction / flexlay and diving vessel, designed to undertake field development and construction activities. The Seven Eagle is of fully welded steel hull construction, with double hull below the freeboard deck, as shown in Figure 2-3, and has Class II Dynamic Positioning (DP).

The vessel has four main engines of 2430kW and four generators able to provide 11230kW of power to the vessel. There are six thrusters, 3 x azimuth and 3 x tunnel, with three thrusters each located aft and forward.

The flexible lay system comprises a vertical lay tower on the starboard side of the ship. Flexible pipe can be carried in the below deck carousel and on reels on dolly-bases on deck. Note that Figure 3-4 shows flexible pipe in spools on the aft deck, for the CBA PRP the pipe will be stored on a carousel within the hull.

The two main deck cranes are provided to handle loads to seabed in addition to general deck service. Subsea modules and tooling systems may be handled over the stern arrangement.

The ship has saturation/air diving capability and facilities for handling workclass ROVs.

Accommodation facilities are provided for 112 persons. All accommodation is located forward, with the helideck located on top of the accommodation block. Note that due to the short offshore campaign, there are no planned personnel movements via helicopter.

Vessel specifications are included within Table 2-2.

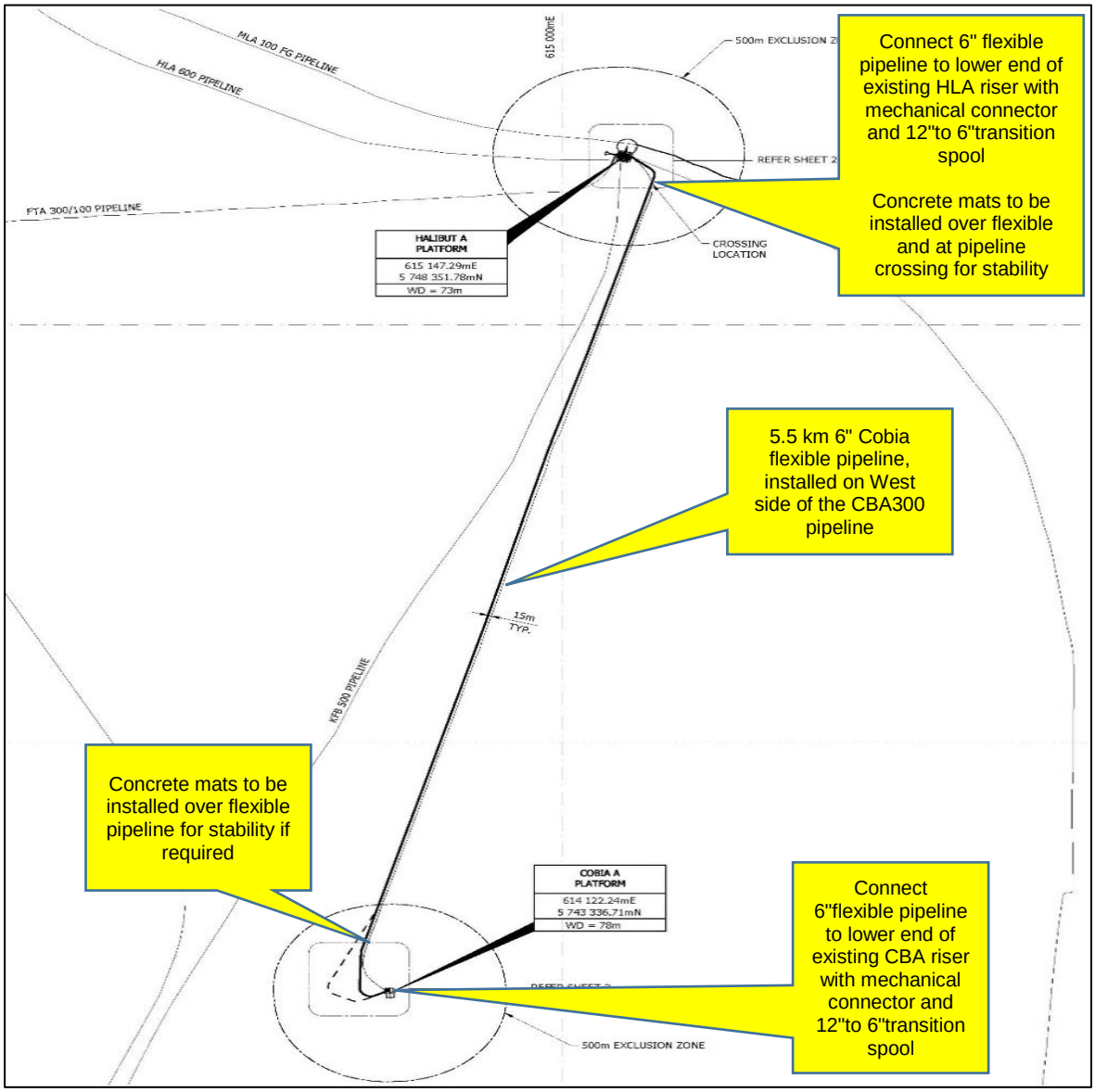


Figure 2-2 Overview of Cobia Pipeline Repair Project Scope

Table 2-2 Seven Eagle DSV Key Facility Dimensions

Dimension	Value	Dimension	Value
Gross tonnage (GT)	9,556 te	Fuel capacity (m3)	1,644
Net tonnage (NT)	2,866 te	DP System (6 x LIPS Thrusters)	Kongsberg Simrad SDP21
Overall length of unit (m)	138	Dive Systems (saturation)	2 x bells 16 men
Overall breadth of unit (m)	20	Helideck D-value	22.2m
Operating draft of unit (m)	6.5	ROV Systems	2x SCV300
Clear deck area (m^2): Forward Aft	 975 398	Classification	+1A1 DSV III SF DYNPOS-AUTR EO
Maximum POB	112	Year built	1997

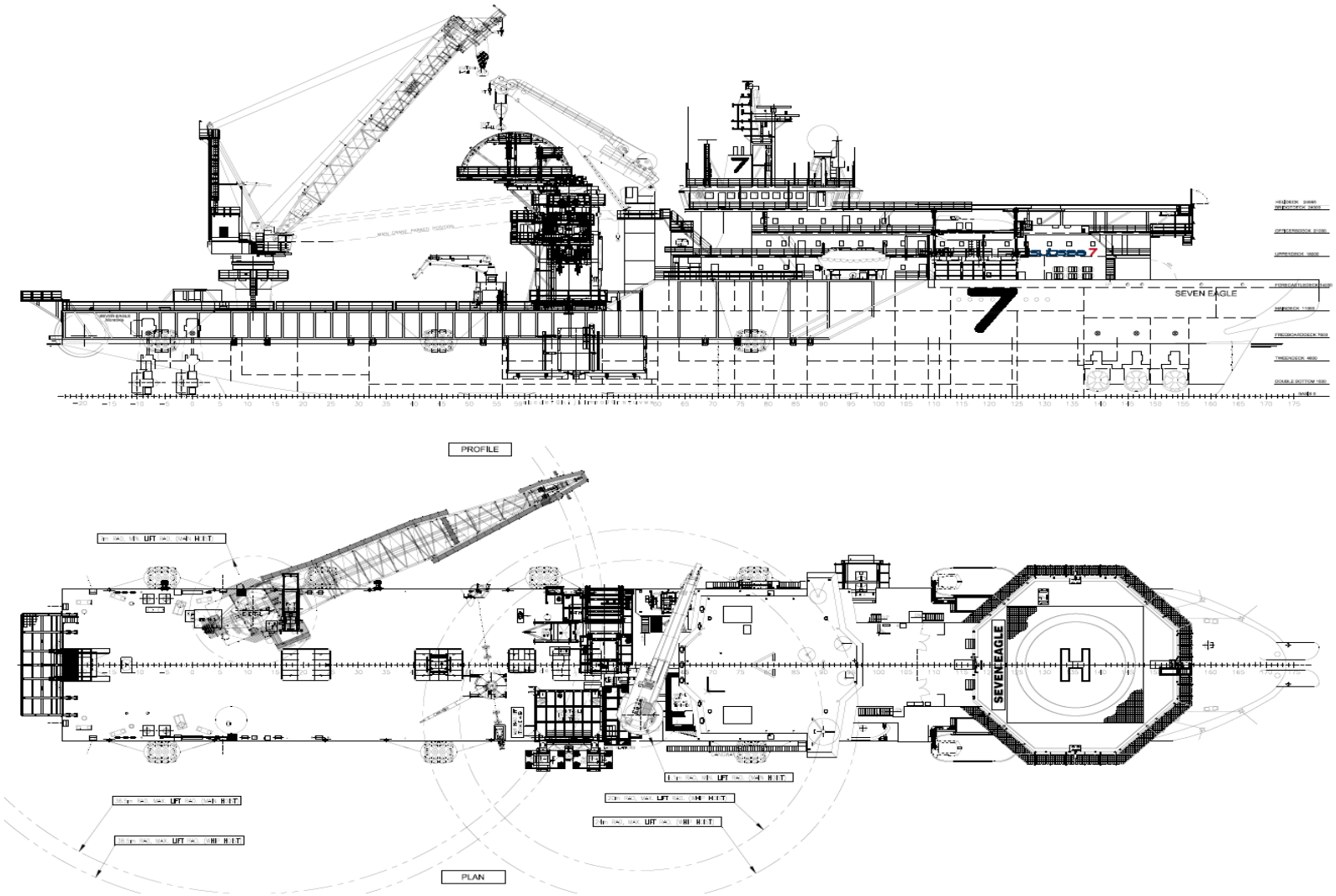


Figure 2-3 General Arrangement – Seven Eagle DSV

2.4.1 Power Generation and Propulsion

The ship is equipped with a diesel - electric propulsion system, consisting of four diesel generators of 3220 KVA each, three electrically driven azimuth thrusters aft of 2000 kW each as main propulsion units and three electrically driven tunnel thrusters forward. The forward (bow) thrusters are each of 1500 kW.

Four 2430 kW Wartsila Vasa 6R32E four stroke medium speed engines (720 rpm) give a total of 9760 KW. The engines burn Marine Diesel Oil (MDO) and are cooled with firewater from the plate-type central cooling system. Each engine is coupled with a 3220 KVA Alsthom/Cegelec generator which supplies 3 -phase, 6.000V, 60 Hz electricity. The engines and alternators are located in two separate engine rooms port and starboard.

The vessel is also equipped with one Caterpillar emergency generating plant consisting of a four stroke diesel engine (450 KW, 1.800 rpm) coupled to a generator (3–phase, 440V, 60 Hz).

2.4.2 Dynamic Positioning

The ship is fitted with a Kongsberg SIMRAD SDP21 DP system; this is a redundant dynamic positioning system designed for all DP applications with a full range of functionality. The system is designed to satisfy notations equivalent to Dynamic Positioning Class 2 (IMO). The DP system controls the three bow- and three aft azimuth thrusters (see Figure 2-3 above).

The Seven Eagle DP system has been subject to a Failure Mode and Effect Analysis (FMEA); this analysis was revised in February 2018. The FMEA confirms the redundancy requirements according to IMO 1994 DP Guidelines.

2.4.3 Marine Diesel Oil (MDO) and Lubricating Oil (LO)

The vessel has 16 diesel oil tanks, in addition to a number of smaller overflow and day tanks. Tanks 10S, 10P and 31 are service tanks, and tanks 11S and 11P are settling tanks. Total tank capacity is 1,644 m^3, plus 23 m^3 of lubrication oil (LO) (the largest of which storage tank LO1S, is 16.09 m^3).

The largest diesel tanks areTK09P (184.26 m^3) and TK09S (150.62 m^3), which are positioned in the keel, and TK15P and TK15S (173.33 m^3 each), which are wing tanks, positioned towards the rear of the vessels and covering three decks (Tween, Freeboard and Main decks). There are no diesel tanks towards the forward section (bow) of the ship. Fuel consumption (MDO) is approximately 20 m^3/day while on DP and 35 m^3 /day while in transit. There will be no fuel bunkering during the CBA PRP.

Table 2-3 General Information on Storage Capacities

Material	Capacity
Water ballast	2448 (from brochure) m^3
Diesel oil	1,644 m^3
Helifuel	No helicopter refuelling facilities are available on-board
Lubrication oil	23 m^3
Potable water	570 m^3
Sewage	34 m^3

Figure 2-4 Multi-Purpose DSV Seven Eagle

2.4.4 Potable Water Generation

Potable water can be generated on board via a reverse osmosis plant, manufactured by Norwater and is type NWC4-80. The desalination unit can treat 80m^3 per day at 25°C. Water is chlorinated by an inline Hadex dosing unit and the drinking potable water is stored in 3 tanks on the Tween deck, with a total capacity of approximately 570m^3.

Distilled water production for the engine and lower temperature cooling system is from a fresh water generator, manufactured by Serck and is type RXT12. The distillation unit can produce a maximum of 10m^3 per day.

2.4.5 Drain, Effluent and Waste Systems

The drainage, effluent systems and associated environmental pollution control systems on the DSV include:

- Domestic waste collection, segregation and disposal
- Domestic grey water and sewage drainage and sewage treatment plant
- Galley waste disposal including macerator
- Sludge and sold waste incinerator
- Bilge water pumps and oily water separator
- Equipment bunding

- Rain and deck wash down drainage
- Scuppers for fuel at oil loading stations.

2.4.5.1 Deck Drainage and Bilge

Drainage of non-hazardous water from the decks passes through a scupper system directly to the sea by way of piping chutes or dumps.

The bilge system has three bilge pumps to eject excess bilge from the Chiller 8 room, auxiliary engine room and main engine room. Bilge discharge is directed to the oily water separator (OWS) prior to discharge overboard.

Equipment with the potential to leak hazardous materials have coamings fitted to contain any potentially polluting liquids and these are either drained to drain tanks or emptied manually into storage containers for disposal onshore.

2.4.5.2 Sewage Treatment

The Seven Eagle is equipped with a marine sewage treatment plant (Certified to MARPOL IMO Resolution MEPC.2 (VI)) which treats both black and grey water. The sewage plant consists of one self-contained unit for treatment of sewage and grey water. The system uses the aerobic principle of sewage digestion, coupled with treatment of final effluent via a chlorination dosing system.

The system has maximum hydraulic loading limits of 22.5m^3 per day and maximum organic loading of 11.25 kg per day for biochemical oxygen demand. Processed chlorinated sewage can be contained in the sewage holding tank, double bottom tank 19; this tank has a capacity of 34m^3. Grey water can be processed by the sewage units or may be discharged overboard in compliance with MARPOL (AMSA 2017c).

The black and grey water is collected from toilets, sinks, showers, urinals and associated sanitary waste systems. Regular sample testing of the discharge water is carried out to confirm correct operation.

2.4.5.3 Incinerator

The TeamTeac OGS200C incinerator is a double action device suitable for burning solid waste and sludge. The maximum incinerator capacity is 400 l of solid waste per charge. The incinerator produces up to 30 l of sewage sludge after burning.

2.4.5.4 Segregation and Storage of Waste

The different types of waste onboard are, where possible, segregated and placed in containers for onshore disposal by contracted waste disposal / recycling companies.

Garbage that remains onboard is packaged for disposal and a full record is kept using a garbage management log. Every package or item that leaves the facility must be fully documented. Biodegradable food scraps are macerated and discharged directly into the sea from the food macerator (in accordance with MARPOL Annex V). .

2.4.6 Diving System

The Seven Eagle is equipped with a saturation diving system. The 16-man integrated saturation diving system is rated to a water depth of 230m with two 3-man diving bells (1 x aft, 1 x forward) deployed via two moonpools. Saturation diver evacuation and rescue can be accomplished by means of self-propelled hyperbaric lifeboats fitted on the starboard side of the vessel.

Diving facilities on the vessel also allow for air diving operations from the starboard side when on DP.

2.4.7 Remotely Operated Vehicles (ROV)

The Seven Eagle is equipped with two work class ROVs. Additionally, each ROV is provided with a

- Tether Management System (TMS);
- Power Distribution Unit (PDU); and
- A-frame and winch for launch and recovery.

The ROVs are hydraulically powered. The maintenance area for the ROVs is within the hull of the vessel and is bunded and drained.

2.5 Hyperbaric Rescue Vessel

The only vessel that is currently planned to support the activities is an offshore support vessel, which will take the role of the Hyperbaric Rescue Vessel (HRV).

The HRV will be a locally sourced small offshore support vessel (Bhagwan Dryden). The HRV will need to be within 2hrs of the DSV from the time that the divers are put into saturation until they are demobilised. The HRV will be stationed at a stand-off location outside the CBA or HLA 500m PSZs. Even in the event of an emergency requiring HRV support the two vessels will maintain a separation of greater than 10 metres and this would only occur for a short duration (2 hours).

Given the duration of the campaign no supply vessels are expected to be required and all bunkering, crew transfers and waste transfers will take place prior to and after the campaign.

2.6 Helicopter Support

Given the planned duration of the CBA PRP, there is no expected requirement for helicopter support. If required it will be conducted from a suitable helicopter base. In the unlikely event that emergency medical evacuation may be required this is likely to be provided by Air Ambulance Victoria.

No helicopter refuelling facilities are available on board the Seven Eagle.

3 Description of the Environment

3.1 Zone of Potential Impact

The Operational ZPI (as shown in Figure 3-1) is based on the maximum credible hydrocarbon spill event that might occur during petroleum activities and the maximum extent of hydrocarbon exposures above impact thresholds resulting from a MDO spill. The ZPI is based on stochastic modelling results (APASA 2018b) and does not represent the zone of exposure from a single event but shows the furthest extent from the release location of the trajectories of all 100 modelled scenarios. The images Figure 3-1and Figure 3-2 below from the oil spill simulation do not represent a realistic scenario. They show 100 simulations under different weather conditions and without any response action taken.

The Operational ZPI extends along the eastern Victoria coastline and around Cape Howe extending northwards into waters off the southern NSW coast. No shore line exposure was predicted above the impact thresholds, except at the ANZECC reference value for entrained hydrocarbons.

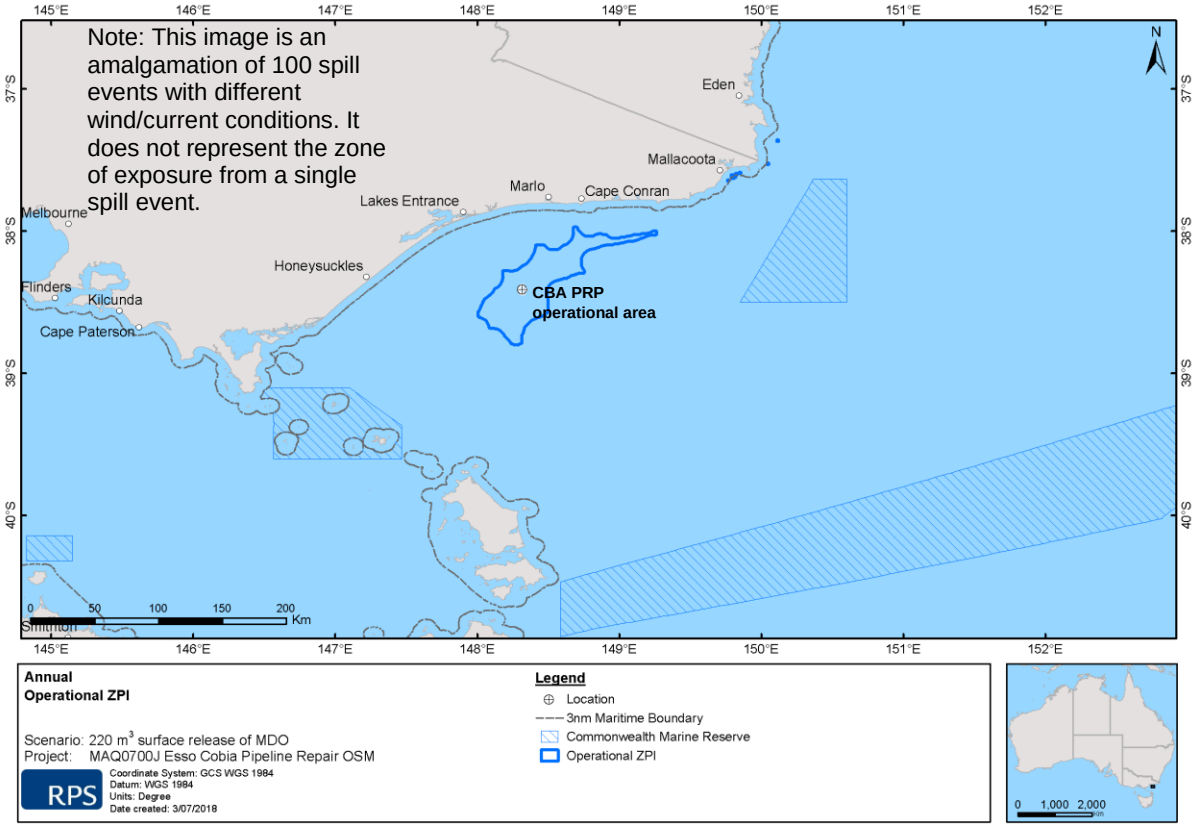


Figure 3-1 Operational ZPI (APASA 2018)

The project has also used ANZECC reference criteria for entrained hydrocarbons as a basis to define the geographical extent of any wider potential ecological impact (Figure 3-2). This zone has been named the "Environmental Monitoring ZPI".

At this highly conservative threshold it is unlikely that entrained hydrocarbons will be measurable in the water column with standard laboratory methodology, and impacts on even the most sensitive biota and ecosystems would most likely not be detectible with conventional scientific methods. Oil spill response outside the Operational ZPI would be restricted to monitoring, evaluation and surveillance (MES), as the Operational ZPI does not include shoreline contact. Other tools for oil spill response are not feasible or practicable at these very low concentrations.

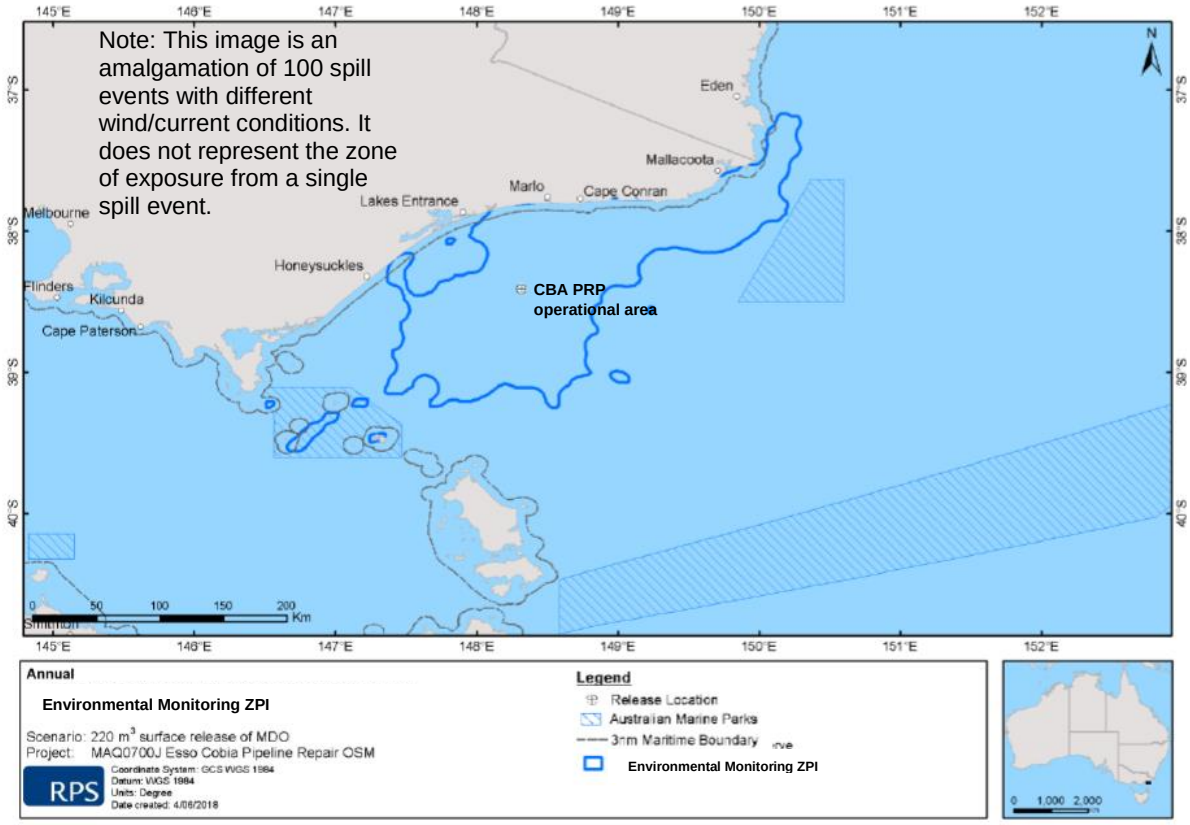


Figure 3-2 **Environmental Monitoring ZPI: geographic extent of potential impacts from entrained hydrocarbons at ANZECC reference level 672 ppb.hrs (7 ppb, 96 hrs) (APASA 2018)**

3.2 Physical environment

Bass Strait is the region of the continental shelf that separates mainland Australia from Tasmania. The strait, including the CBA PRP operational area, is located in a relatively shallow area of the continental shelf.

Bass Strait has a reputation for high winds and strong tidal currents (Jones 1980).

Average monthly rainfall along the Gippsland coast (Yarram Airport) ranges from 38 mm in January (highest 112 mm) to 60 mm in June (highest 174 mm). Offshore (on Deal Island in central Bass Strait) monthly rainfall ranges from 41 mm in January (highest 162 mm) to 78 mm in June (highest 247 mm) and shows a similar pattern to the coastal region with slightly higher winter rainfall (BOM 2017).

Currents in the Gippsland Basin are tide and wind driven. Tidal movements predominantly have a northeast–southwest orientation. Tidal flows come from the east and west during a rising (flood) tide, and flow out to the east and west during a falling (ebb) tide. Tidal streams are dominated by the lunar tidal constituent, which has a period of 12.4 hours. The main tidal components vary in phase by about three to four hours from east to west. Most of this phase change occurs between Lakes Entrance and Wilsons Promontory. Timing of the high tide, for example, can vary by up to three hours across this region. Tides in the area from Lakes Entrance to Gabo Island are, however, relatively weak in comparison to other areas of Bass Strait (GEMS 2005).

Temperatures in the subsurface waters of the operational area range from about 13°C in August/September to 16°C in February/March. Surface temperatures can exceed 20°C at times in late summer due to the warmer waters of the East Australia Current entering the strait. Water temperatures in the operational area are expected to follow this pattern (Jones 1980).

The area around the CBA PRP operational area is a high energy environment exposed to frequent storms and significant wave heights. High wave conditions are generally associated with strong west to southwest winds caused by the eastward passage of low pressure systems across Bass Strait. Storms may occur several times a month resulting in wave heights of three to four metres or more. In severe cases, southwest storms can result in significant wave heights of greater than six metres (Jones 1980).

The CBA PRP operational area lies in an approximate water depth of 70m.

3.3 Values and Sensitivities

3.3.1 Protected Matters within Operational ZPI

The following table provides details of the values present within the Operational ZPI for those receptors identified by Regulation 13(3) of the OPGGS(E) Regulations 2009. Note, no Australian Marine Parks, internationally (Ramsar) or nationally important wetlands, World, National or Commonwealth heritage places occur within the Operational ZPI. Descriptions of the features or species and species habitat is provided further in this Chapter (see references within the Table).

Table 3-1 Summary of conservation values and sensitivities within the Operational ZPI

Receptor Type	Value and Sensitivities	Features present within the Operational ZPI
Commonwealth Marine Area (Section 3.5.3)	Key Ecological Features	• Big Horseshoe Canyon • Upwelling East of Eden
Fish, sharks and rays (Section 3.6.1)	Threatened and/or migratory species	• Two threatened fish species or species habitat present (Australian grayling, Black rockcod) • Three threatened (Grey nurse shark, Great white shark, Whale shark) and four migratory (Great white shark, Shortfin mako shark, Porbeagle shark, Whale shark) shark species or species habitat present
Marine Reptiles (Section 0)	Threatened and/or migratory species	• Four threatened and migratory marine turtle species or species habitat present (Loggerhead turtle, Green turtle, Leatherback turtle, Hawksbill turtle)
Seabirds and Shorebirds (Section 3.6.3)	Threatened and/or migratory species	• Numerous threatened (26) and migratory (24) species or species habitat present (including various albatross, petrel, plover, sandpiper and shearwater species)
Marine Mammals (Section 3.6.4)	Threatened and/or migratory species	• Five threatened whale species or species habitat present (Sei whale, Blue whale, Fin whale, Southern right whale, Humpback whale); and ten migratory whale species or species habitat present • One migratory dolphin species or species habitat present (Dusky dolphin)

Table 3-2 provides details of the additional values present within the Environmental Monitoring ZPI for those receptors identified by Regulation 13(3) of the OPGGS(E) Regulations 2009. Descriptions of the features or species and species habitat is provided further in this Chapter (see references within the Table).

Table 3-2 Summary of additional conservation values and sensitivities within the Environmental Monitoring ZPI

Receptor Type	Value and Sensitivities	Features present within the Environmental Monitoring ZPI
Wetland (Section 3.5.5)	Wetland of international importance	• Gippsland Lakes Ramsar site
Commonwealth Parks & Reserves (Section 3.5.3)	Australian Marine Parks (formerly Commonwealth Marine Reserves)	• Beagle Marine Park • East Gippsland Marine Park
Aquatic Vegetation (Section 3.6.6)	Threatened ecological community	• Giant Kelp Marine Forests of South East Australia
Cultural Heritage (Section 3.11)	Commonwealth heritage place	• Gabo Island Lighthouse
Protected Areas (Section 3.5.4)	State parks and reserves	• Cape Howe • Croajingolong National Park • Rame Head • Sandpatch • East Gippsland Coastal Streams • Cape Conran Coastal Park • Devils Tower (Curtis Group) • East Moncouer Island • West Moncouer Island • Hogan Group • North East Isle (Kent Group)
Fish, sharks and rays (Section 3.6.1)	Threatened and/or migratory species	• No additional fish, shark or ray species
Marine Reptiles (Section 3.6.2)	Threatened and/or migratory species	• No additional species
Seabirds and Shorebirds (Section 3.6.3)	Threatened and/or migratory species	• Twelve additional threatened and 13 additional migratory species or species habitat present (including several snipe and godwit species, the Australasian bittern and the Orange bellied parrot)
Marine Mammals (Section 3.6.4)	Threatened and/or migratory species	• No additional species

3.3.2 Commonwealth Parks and Reserves

Six marine regions have been identified in Commonwealth waters around Australia. The operational area, Operational ZPI and Environmental Monitoring ZPI lie within the South-east Marine Region.

The key conservation values of the South-east Marine Region are:

- Features with high biodiversity and productivity, such as the east Tasmania subtropical convergence zone, Bass Cascade, Upwelling east of Eden, Seamounts south and east of Tasmania and Bonney coast upwelling.
- Breeding and resting areas for Southern right whale.
- Migration areas for Blue, Fin, Sei, Southern right and Humpback whales.

- Foraging areas for Australian sea-lion, White shark, Harrison's dogfish, Killer and Sei whales, Australasian gannet, Fairy prion, Black-faced cormorant, Little penguin, Crested tern, and several species of seal, penguin, albatross, petrel, shearwater and gulls.
- Wrecks of *MV City of Rayville*, *SS Cambridge* and ketch *Eliza Davies*.
- 10 provincial bioregions and 17 seafloor types are represented in the network (DoEE, 2017a)

3.3.2.1 Australian Marine Parks

Within each region is a series of Australian Marine Parks; and the reserves are managed for the primary purpose of conserving the biodiversity found in them, while also allowing for sustainable use of natural resources. The Environmental Monitoring ZPI intersects the Beagle Marine Park and East Gippsland Marine Park

East Gippsland Marine Park

The East Gippsland Marine Park (IUCN category VI – Multiple Use Zone) covers 4,137 square kilometres and is located approximately 200 km east north-east of the operational area. The reserve contains representative samples of an extensive network of canyons, continental slope and escarpment in depths from 600 metres to deeper than 4,000 metres.

The East Gippsland Marine Park includes both warm and temperate waters and free-floating aquatic plants or microscopic plants (i.e., phytoplankton) communities. The reserve supports a diverse phytoplankton community and other sea life. The area may also include foraging area for Wandering albatross (DoEE 2017n).

Beagle Marine Park

The Beagle Marine Park (IUCN category VI – Multiple Use Zone) is located approximately 150 km south-west of the operational area with its north-western edge abutting Victorian waters to the south-east of Wilsons Promontory. The reserve covers an area of 2,928 square kilometres.

The Beagle Marine Park is a shallow reserve that surrounds a collection of Bass Strait islands (Figure 3-3). The deep rocky reefs support a rich array of life, and the area provides homes and feeding grounds for seabirds, Little penguins and Australian fur seals. The reserve encloses the Kent Group Marine Reserve and the Hogan and Curtis Island groups which are important breeding areas for the Fairy prion, Shy albatross, Silver gull, Short tailed shearwater, Black faced cormorant, Australian gannet, Common diving petrel and Little penguins (DoEE, 2017u).

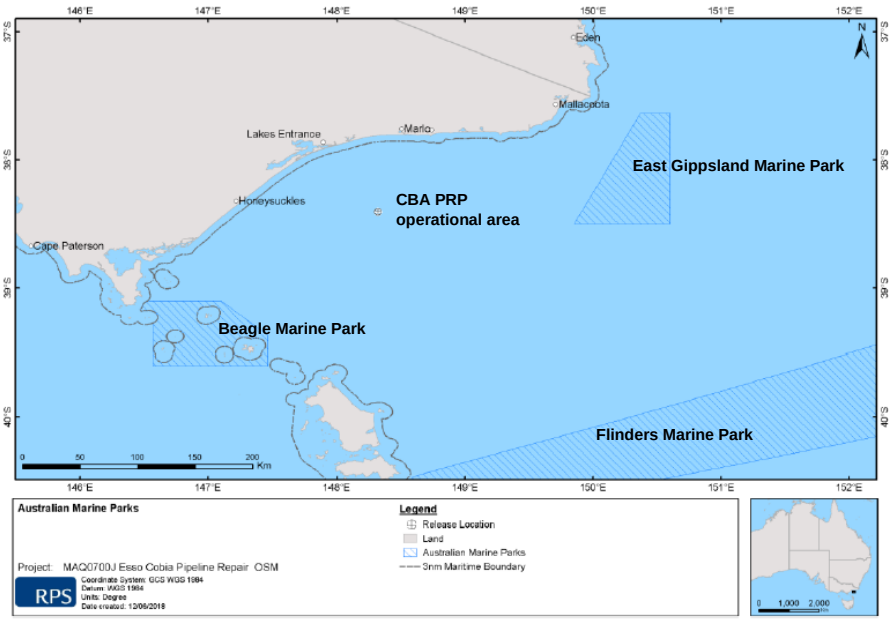


Figure 3-3 Australian Marine Parks

3.3.2.2 Key Ecological Features

Key Ecological Features (KEF) are elements of the Commonwealth marine environment that are considered to be of regional importance for either a region's biodiversity or its ecosystem function and integrity. Two KEFs, identified in the Conservation Values Atlas (DoEE 2015c), intersect with the Operational ZPI and Environmental Monitoring ZPI (Figure 3-4).

Big Horseshoe Canyon

The steep, rocky slopes of the Big Horseshoe Canyon provide hard substrate habitat for attached large megafauna. Sponges and other habitat forming species provide structural refuges for benthic fishes, including the commercially important pink ling.

The Big Horseshoe Canyon is the largest south eastern canyon sampled for benthic biodiversity (Williams *et al*. 2009). It has a total area of 319 km^2 in 1500-m depth that supports a rich, abundant, filter-feeding benthic megafauna, including large sponges in dense beds of large individuals at 120 m and at 300–400 m, dense stands of the stalked crinoid *Metacrinus cyaneus* in 200–300 m, and many species of octocoral (especially gold corals) at depths >700 m (Kloser *et al*., 2001). The conservation value of this feature is highlighted by this being the type locality for *M. cyaneus* and it is only known location off south eastern Australia.

Big Horseshoe Canyon lies south of the coast of eastern Victoria. This feature is the eastern most arm of the Bass Canyon system so the spatial boundary of this KEF, as defined in the Conservation Values Atlas, was identified using the Geoscience Australia geomorphic features dataset (DoEE 2015a).

Upwelling East of Eden

The Upwelling East of Eden is designated a KEF for the high productivity and aggregations of marine life. Dynamic eddies of the East Australian Current cause episodic productivity events when they interact with the continental shelf and headlands. Phytoplankton blooms, resulting from mixing and nutrient enrichment, are the basis of productive food chains including zooplankton, copepods, krill and small pelagic fish (DoEE 2015a).

The upwelling supports high primary productivity that supports higher trophic levels, including top order predators, marine mammals and seabirds. The area supports foraging Blue and Humpback whales, known to arrive when significant krill aggregations form. The area is also important for other cetaceans, seals, sharks and seabirds.

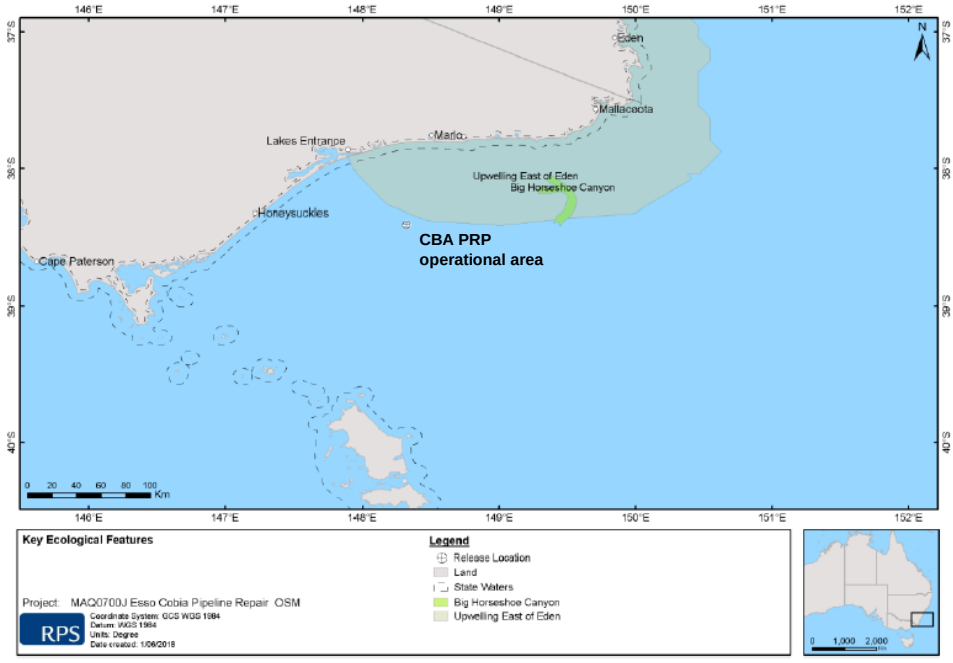


Figure 3-4 Key Ecological Features

3.3.3 State Parks and Reserves

State parks and reserves which include marine protected areas and terrestrial protected areas are declared under each individual state's legislation and are managed by state authorities. A number of state marine protected areas intersect the Environmental Monitoring ZPI. A number of other state marine and terrestrial protected areas, as described below, are located inshore of the Operational and Environmental Monitoring ZPIs see Figure 3-5.

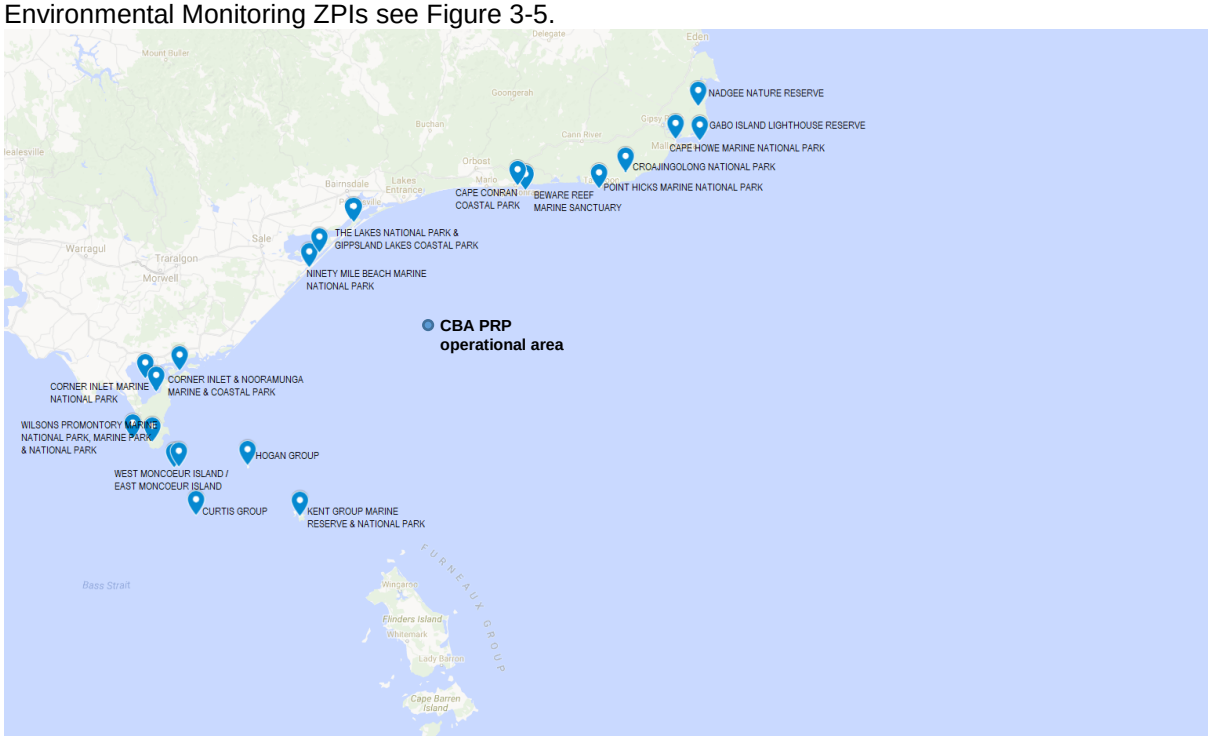


Figure 3-5 State parks and reserves

3.3.3.1 Croajingolong National Park & Nadgee Nature Reserve

The Croajingolong National Park follows the far-eastern coastline of Victoria for 100 km and together with the adjoining Nadgee Nature Reserve in New South Wales is classified as a UNESCO World Biosphere Reserve. Over 1000 species of native plants have been recorded in the park including 90 species of orchids. The park also contains areas of cool temperate and warm temperate rainforest, eucalypt forest and coastal heathland.

Of the 52 mammal species recorded in the park, arboreal mammals, such as possums, gliders and bats are common. Seals, whales and dolphins occur in coastal waters adjacent to the park. The islands and ocean beaches attract migratory seabirds and waders, the wetlands are habitat for a diversity of waterfowl and the coastal woodlands are favoured habitat for birds of prey. Significant populations of reptiles and amphibians also occur within the park.

The park's secluded coastal camping locations make it popular for beach walks, bird watching, boating and fishing (ParksVic 2017h).

The Skerries, offshore from Wingan Inlet, is home to a major seal breeding colony with an estimated population of 11,500 representing approximately 12% of the national population.

Dry open forest areas occur widely throughout Nadgee Nature Reserve with patches of rainforest occurring in creek catchments and low shrubby heaths being encountered at Mt Nadgee and along the coast. Nadgee Nature Reserve also contains examples of both fresh and salt water wetlands.

The near-coastal areas are significant breeding and foraging habitat for the Eastern bristlebird and seabirds such as the Short-tailed shearwater, Crested tern and Gannet. Most of the park's beaches support a breeding pair of Hooded plovers. Sea caves support important invertebrate 'guano' communities.

The reserve is largely undisturbed by recreational development and contains the only coastal Wilderness Area in NSW (NPWS 2017a).

3.3.3.2 Cape Howe Marine National Park

The Cape Howe Marine National Park is situated in the far east of Victoria alongside the border with New South Wales. The habitats found in the park include kelp forests, granite and sandstone reefs, sandy beaches and soft sediments. The marine life of the area is particularly diverse because species of both warm and cool areas can reside here. Whales pass by Cape Howe on their migration from Antarctica and are sometimes followed by a pod of orcas. Little penguins also forage at the rook on Gabo Island. (ParksVic 2017l).

3.3.3.3 Gabo Island Lighthouse Reserve

Gabo Island is considered to be of State zoological significance due to the presence of one of the largest breeding colonies of Little penguins in the world. Short-tailed shearwaters also breed on Gabo Island.

Common species of whale sighted from the island include Southern right whales, Humpback whales and Killer whales. Whales pass Gabo Island on their annual migration south to feed in Antarctic waters from late winter to early spring and then again during autumn on their northern migration to calve in tropical areas. Pods of dolphins are also regularly sighted from Gabo Island. Species include Common dolphins and Bottlenose dolphins. Australian and New Zealand Fur Seals are also often seen on the rocks surrounding the island.

The lighthouse was constructed from 1858 to 1862 and is the only operating lighthouse in Victoria (ParksVic, 2017p).

3.3.3.4 Point Hicks Marine National Park

The Point Hicks Marine National Park is located alongside Croajingolong National Park, East Gippsland. Many creatures found here are not found further west because the water is too cold, for example the large black sea urchin. The National Park is approximately 4,000 ha in area, with fauna including intertidal and shallow subtidal invertebrates, diverse sessile invertebrates living on subtidal reefs, kelps and small algae, and a high diversity of reef fish. In addition to the subtidal reef, the marine environment around Point Hicks includes intertidal rock operational areas and offshore sands (ParksVic 2017a). Point Hicks Marine National Park is also a popular location for recreational divers. Remains of two shipwrecks can be encountered in the National Park (see Section 4.11.2).

3.3.3.5 Beware Reef Marine Sanctuary

The Beware Reef Marine Sanctuary is a State marine protected area, IUCN Category II, located approximately 5 km southeast of Cape Conran and to the north-east of the operational area, comprises a granite outcrop covering an area of 220 ha and extending for a distance of approximately 500 m from the edge of the exposed reef. It rises from a depth of approximately 30 m and is exposed at low tide, providing a resting area for Australian fur seals. The reef is covered by outcrops of Bull kelp (*Durvillaea* sp.) and supports a range of marine life, including seahorses and leafy seadragons (ParksVic 2017b). Beware Reef is a popular location for recreational divers and the remains of numerous shipwrecks can be encountered in the sanctuary (see Section 4.11.2).

3.3.3.6 Cape Conran Coastal Park

The Cape Conran Coastal Park extends from Sydenham Inlet in the east to Point Ricardo near Marlo. The park includes ocean beaches and is a popular park for water activities - swimming, diving, boating, fishing and rock pooling.

Many birds feed on the nectar rich plants of the heathlands and banksia woodlands including the threatened Ground parrot (*Pezoporus wallicus wallicus*). Lizards and large lace monitors are common around Cape Conran (ParksVic 2017i).

3.3.3.7 Ninety Mile Beach Marine National Park

Located 30 km south of Sale and adjacent to Gippsland Lakes Coastal Park, the Ninety Mile Beach Marine National Park covers 5 km of coastline. The huge subtidal sandy expanses characteristic of the area exhibit particularly high species diversity including tube building worms, small molluscs and many

tiny crustaceans. Many pelagic fish species feed on the benthos, and young Great white sharks have also been observed feeding in the area (ParksVic 2017c).

3.3.3.8 The Lakes National Park and Gippsland Lakes Coastal Park

The Gippsland Lakes are a group of large coastal lagoons in eastern Victoria, separated from the sea by sand dunes and fringed on the seaward side by Ninety Mile Beach. The main lakes - Wellington, Victoria and King cover an area of 340 km^2 and have a shoreline of 320 km. The lakes are fed by a number of river systems. The largest of the rivers are the Latrobe River and the Avon River (flowing into Lake Wellington), and the Mitchell River, Nicholson River and Tambo River (flowing into Lake King). The system is linked to the sea by an artificial entrance near the eastern end, opened in 1889, where the town of Lakes Entrance is now situated (ParksVic 2017j,k).

The Lakes National Park covers 2390 ha bounded by Lake Victoria, Lake Reeve and the township of Loch Sport. Gippsland Lakes Coastal Park is a narrow coastal reserve covering 17,600 ha along approximately 90km of Ninety Mile Beach from Seaspray to Lakes Entrance. The Lakes National Park contains large areas of diverse and relatively undisturbed flora and fauna communities representative of the inner barrier of the Gippsland Lakes system. Gippsland Lakes Coastal Park takes in extensive coastal dune systems, woodlands and heathlands, as well as water bodies such as Lake Reeve and Bunga Arm (ParksVic 2017k).

The Gippsland Lakes system is listed under the Convention on Wetlands of International Importance (Ramsar). The Gippsland Lakes provide important feeding, resting and breeding habitat for approximately 80 waterbird species (ParksVic 2003, 2017j,k), and the lakes, and associated swamps and morasses, regularly support approximately 40,000 to 50,000 waterbirds.

Clydebank Morass, Macleod Morass and Jones Bay (within Lake King) support many species of migratory waders. Lake Wellington, Lake Victoria and Lake King support migratory seabirds, including the little tern and fairy tern, as well as a range of other waterfowl. Lake Reeve provides significant habitat for a large number of migratory waders, and is listed as one of the five most important areas for shorebirds in Victoria (ParksVic, 2003). Bunga Arm supports breeding populations of threatened species e.g. Little tern, Fairy tern, Hooded plover and White-bellied sea-eagle (ParksVic 2003, 2017k).

3.3.3.9 Corner Inlet and Nooramunga Marine and Coastal Park

The Corner Inlet and Nooramunga Marine and Coastal Parks are protected from Bass Strait by sand barrier islands and Wilsons Promontory. Corner Inlet and Nooramunga consist of shallow marine waters, intertidal mudflats and a series of sand islands. Corner Inlet and Nooramunga Marine and Coastal Parks contain a diverse range of habitats including large stands of white mangrove and saltmarsh areas. Seaward of the mangroves are extensive areas of intertidal mud and sand flats which provide food for thousands of migratory wading birds each year.

Thirty two species of migratory waders have been recorded, including the largest concentrations of Bar tailed godwit and Great knot in south eastern Australia. In summer, the ocean beaches and sand spits are also used as nesting sites by shorebirds like the Pied oyster catcher, Crested tern, Caspian tern, Fairy tern, Hooded plover and the endangered Little tern. Fringing the saltmarshes and mangroves on the mainland and islands are stands of swamp paperbark and coast tea-tree, and further inland woodlands of coast banksia and manna gum. These are home for a variety of animals including the New Holland mouse, swamp *antechinus*, Orange-bellied parrot, Ground parrot and White-bellied sea eagle. The parks are recognised as wetlands of international importance under the Ramsar convention (ParksVic 2017d and 2017e).

3.3.3.10 Corner Inlet Marine National Park

Corner Inlet Marine National Park is located north and east of Wilson's Promontory adjacent to the southern shores of Corner Inlet. The National Park protects large areas of seagrass including the only extensive *Posidonia australis* meadow in southern Australia. Amongst the seagrass live over 300 marine invertebrates including crabs, seastars, sea snails, squid and many fish including pipefish, stingarees, flathead, whiting and flounder. The seagrass and surrounding marshes are particularly important for international migratory birds such as the Eastern curlew (ParksVic 2017e). The area has been listed as part of the Corner Inlet Ramsar Site.

3.3.3.11 Wilsons Promontory Marine National Park, Wilsons Promontory Marine Park and Wilsons Promontory National Park

Wilsons Promontory Marine National Park is Victoria's largest Marine Protected Area (MPA) at 15,550 ha and is located around the southern tip of Wilsons Promontory. There is a diversity of marine life including octopus, sharks and rays. It is a popular location for recreational divers particularly around the sponge gardens. The offshore islands support many colonies of fur seals and oceanic birds such as Little penguins, Fairy prions, Silver gulls and Pacific gulls (ParksVic 2017g).

Wilsons Promontory National Park is a popular tourist destination due to its coastal scenery and diverse natural environments. Tourist activities include walking, camping, sightseeing, viewing wildlife, fishing, boating, diving, sea kayaking and surfing.

The park is important for its range of plants and animals, including many threatened species including the New Holland mouse, Ground parrot and White-bellied sea eagle. Coastal features include expansive intertidal mudflats, sandy beaches and sheltered coves interrupted by prominent headlands and granite cliffs in the south, backed by coastal dunes and swamps.

The avifauna recorded for Wilsons Promontory includes around half of all Victorian bird species. Significant species of migratory wading birds feed on the tidal mudflats of Corner Inlet within and adjoining the park. The offshore islands have breeding and roosting sites for sea birds, including a large number of Short-tailed shearwaters (ParksVic 2017g).

3.3.3.12 Kent Group National Park and Kent Group Marine Reserve

The six islands and islets of the Kent Group comprise Tasmania's northernmost National Park. Surrounding the largest of the islands, the Kent Group Marine Reserve covers 29,000 ha of marine habitat including deep and shallow reefs as well as extensive sponge beds (TPWS 2017a). The waters around the Kent Group include the southernmost strongholds of several fish species including the violet roughy, mosaic leatherjacket and Wilson's weedfish, and the southern limit of distribution of Maori wrasse, one spot puller and Bank's shovelnose. The Marine Protected Area (MPA) is made up of a sanctuary zone which is a 'no take' zone, and a habitat protection zone which allows for lower impact fishing (e.g. abalone and rock lobster fishing, hand line fishing).

The North East Isle is a 32.62 ha unpopulated granite island with a peak elevation of 125 m above sea level. Recorded breeding seabird and wader species include Little penguin, Short-tailed shearwater, Fairy prior, Common diving petrel, Pacific gull and Sooty oystercatcher (Brothers *et al*., 2001).

3.3.3.13 Curtis Island Nature Reserve and Devils Island Nature Reserve

Curtis Island, part of the Curtis Group, is a granite island with an area of 150 ha lying in northern Bass Strait between the Furneaux Group and Wilsons Promontory. It is a nature reserve and supports up to 390,000 breeding pairs of Short-tailed shearwaters. Other recorded breeding seabird and wader species include Little penguin, Fairy prion, Pacific gull and Sooty oystercatcher.

Other islands in the Curtis Group are Cone Islet, Sugarloaf Rock and Devils Tower. Devils Tower comprises two small granite islands with a combined area of 4.77 ha. It is a nature reserve and recorded breeding seabird species include Short-tailed shearwater, Fairy prion and Common diving-petrel. The island is also used as a regular haul-out site for Australian fur seals (Brothers *et al*., 2001)

3.3.3.14 Hogan Group

Hogan Island, the largest island in the Hogan Group, is a 232 ha granite island located in northern Bass Strait between the Furneaux Group and Wilsons Promontory. Recorded breeding seabird and wader species include Little penguin, Short-tailed shearwater, Pacific gull, Silver gull and Sooty oystercatcher (Brothers *et al*., 2001)

3.3.3.1 West Moncoeur Island and East Moncoeur Island

West Moncoeur Island and East Moncoeur Island are part of Tasmania's Rodondo Group lying in northern Bass Strait south of Wilsons Promontory. The islands are granite islands ringed by steep cliffs. Recorded breeding seabird and wader species include Little penguin, Short-tailed shearwater,

Fairy prion, Common diving petrel, Pacific gull and Sooty oystercatcher. Both islands are considered important breeding sites for seabirds (Brothers *et at*., 2001). West Moncoeur Island holds an important breeding colony of Australian fur seals and is a nature reserve (DPIPWE, 2000).

3.3.4 Wetlands

3.3.4.1 Wetlands of International Importance

Under the Ramsar Convention, wetland types have been defined to identify the main wetland habitats represented at each site. The classification system uses three categories (with a number of wetland types within each): (i) Marine/Coastal Wetlands; (ii) Inland Wetlands; and (iii) Human-made Wetlands. Two marine/coastal Wetlands of International Importance are located immediately inshore of the Operational and Environmental Monitoring ZPIs (Figure 3-6).

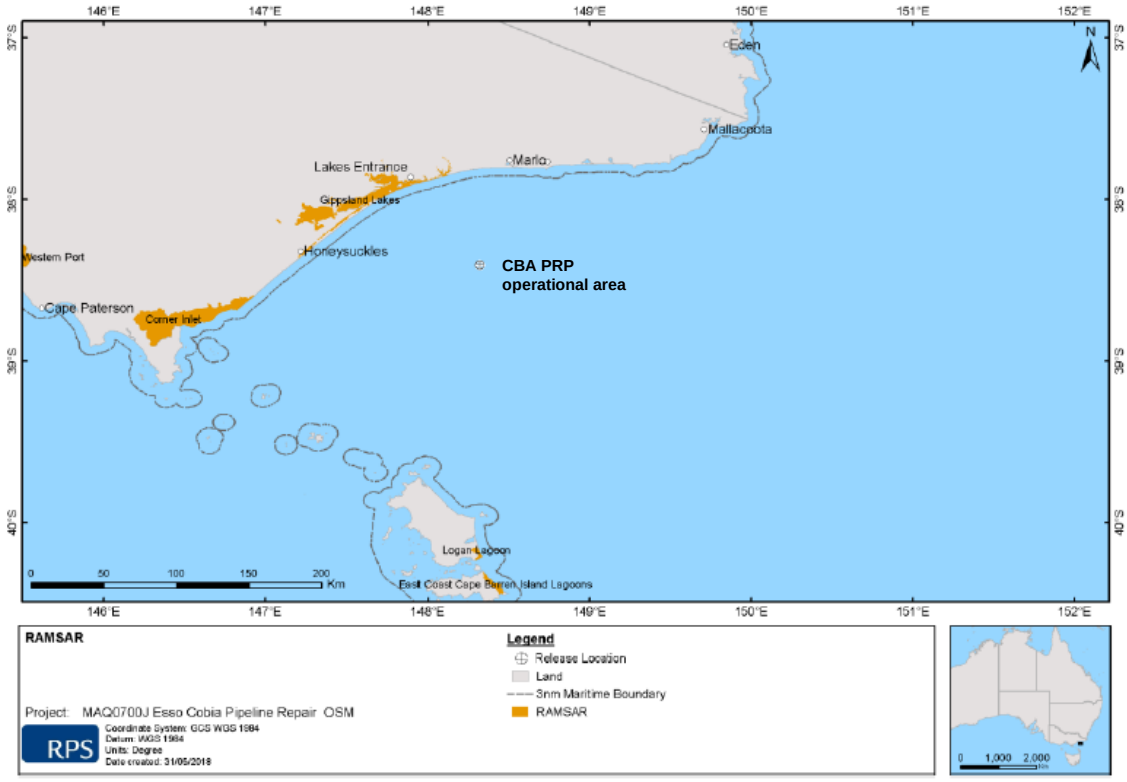


Figure 3-6 Ramsar wetlands

3.3.4.2 Gippsland Lakes Ramsar Site

The Gippsland Lakes Ramsar Site is located in Victoria, south of the Eastern Highlands and to the east of the La Trobe Valley. Covering a vast area, the lakes are a series of large, shallow, coastal lagoons approximately 70 km in length and 10 km wide, separated from the sea by sand dunes. The surface area of the lakes is approximately 364 km^2 and the three main water bodies are Lakes Wellington, Victoria and King.

The Gippsland Lakes Ramsar Site meets six of the Ramsar criteria (DoEE 2017s):

- Criterion 1: Contains a representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region.
- Criterion 2: Supports vulnerable, endangered or critically endangered species or threatened ecological communities.
- Criterion 4: Supports plant and/or animal species at a critical stage in their life cycles or provides refuge during adverse conditions.

- Criterion 5: Regularly supports 20,000 or more waterbirds.
- Criterion 6: Regularly supports 1% of the individuals in a population of one species or subspecies of waterbird.
- Criterion 8: Is an important source of food for fish, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere.

The Gippsland Lakes is a particularly good representative example of a natural or near-natural wetland, characteristic of the biogeographical region. It forms one of the largest coastal lagoon systems in the Drainage Division and contains a distinctive landscape of wetlands and flat coastal plains. The site supports a broad range of wetland types in close proximity to each other, including periodically inundated palustrine marshes, permanently inundated palustrine marshes, shallow lacustrine (lake) features, deep lacustrine features, lagoons with narrow inlets, and broad embayments.

The site supports several nationally threatened wetland fauna species at various stages of their life-cycle including two nationally threatened frog species (green and golden bell frogs and growling grass frogs), the vulnerable Australian painted snipe, a vulnerable fish species (the Australian grayling) and three nationally vulnerable and endangered wetland-associated flora species (dwarf kerrawang, swamp everlasting and metallic sun-orchid).

The site supports habitat and conditions that are important for critical life cycle stages of a variety of wetland-dependent fauna species. The permanence of the main lakes and the relatively regular flooding of the adjacent wetlands mean that this wetland is an important drought refuge for many water birds and other aquatic species, including as permanent refuges and breeding sites for two threatened frog species.

The Gippsland Lakes have been identified as being of outstanding importance for waterbirds, regularly supporting more than 20,000 waterfowl. Waterbird species which are considered to have met the one per cent population threshold are: Red-necked stint, Black swan, Sharp-tailed sandpiper, Chestnut teal, Musk duck, Fairy tern and Little tern.

Gippsland Lakes provides important habitats, feeding areas, dispersal and migratory pathways, and spawning sites for numerous fish species of direct and indirect fisheries significance. These fish have important fisheries resource values both within and external to the site.

Currently, parts of the Lakes system are heavily used for commercial and recreational fisheries and boating activities, while the immediate hinterland has been developed for agricultural use, and limited residential and tourism purposes (DoEE, 2017s).

The Lakes are protected as a Ramsar site by the Lakes National Park and the Gippsland Lakes Coastal Park (see Section 4.5.4.8).

In the context of the CBA PRP scope, and predicted geographical extent of the Environmental Monitoring ZPI, critical components as described by the ecological character description (ECD) of the Gippsland Lakes Ramsar Site (DSEWPAC 2010) that may be affected by a major spill event include Marine sub-tidal aquatic beds (C1), Coastal brackish or saline lagoons (C2), Waterbird breeding (P2), Threatened species (S1) and Fisheries resource values (S2).

3.3.4.3 Corner Inlet Ramsar Site

The Corner Inlet Ramsar Site is located on the south-east coast of Victoria. It is bounded to the west and north by the South Gippsland coastline, in the south-east by a series of barrier islands and sandy spits lying end to end and separated by narrow entrances, and to the south by the hills of Wilsons Promontory.

The Corner Inlet Ramsar Site also meets six of the Ramsar criteria (DoEE 2017r): 1, 2, 4, 5, 6 and 8 (as described above).

Corner Inlet is a very good example of a wetland enclosed by barrier islands in Victoria and contains the most extensive intertidal mudflats in Victoria. The area contains the only extensive bed of the Broad-leafed seagrass in Victoria. The islands of Corner Inlet, although not rich in plant diversity, are of high biogeographical significance as a result of their geological history and connectivity to the mainland

during ice ages. The islands also contain significant areas of saltmarsh and mangroves, both of which are communities of very limited distribution. These communities filter pollutants, stabilize sediments and protect the shoreline from erosion.

Corner Inlet provides breeding habitat for a variety of waterbirds, including several species listed as threatened at the State level and/or occurring in significant numbers and habitat for significant aggregations of waterbirds during post-breeding, and as a refuge during adverse environmental conditions. Corner Inlet regularly supports well over 20,000 waterbirds including species such as the Eastern curlew, Curlew sandpiper, Bar-tailed godwit, and Double-banded plover.

The Corner Inlet Ramsar Site has regularly supported more than one per cent of the population of the Pied oystercatcher, Sooty oystercatcher, Pacific gull, Fairy tern, Red knot, Red necked stint and Chestnut teal.

Corner Inlet supports the nationally critically endangered Orange bellied parrot as well as several other vulnerable and endangered species, including the growling grass frog and Australian grayling. The Southern right whale, Leathery turtle, Swift parrot and Shy albatross have all also been recorded at the site.

Corner Inlet provides important habitats, feeding areas, dispersal and migratory pathways, and spawning sites for numerous fish species. Some of these include King George whiting, Australian salmon, greenback flounder, southern garfish, leatherjackets (several species), short-finned eel and gummy shark.

Corner Inlet was used traditionally by Indigenous people and many archaeological sites including scarred trees, burial sites, artefact scatters, shell middens and camps have been found. Currently, the Ramsar site is used for biological conservation, ports with servicing facilities for off-shore oil and natural gas exploration, commercial fishing, recreational fishing, and other recreational activities. Diving is popular around the numerous shipwreck sites in Corner Inlet and around the barrier islands (DoEE, 2017r).

The site is protected as a Ramsar site by the Nooramunga and Corner Inlet Marine and Coastal Parks (see Section 3.3.3.9), and by part of it lying within the Corner Inlet Marine National Park (Section 4.5.4.10).

In the context of the CBA PRP scope, and predicted extent of Environmental Monitoring ZPI, critical components described by the ecological character description (ECD) of the Corner Inlet Ramsar Site (DSEWPAC 2010) that may be affected by a major spill event include Seagrass, mangroves, saltmarshes and intertidal and subtidal waters (C1), Waterbird breeding (P1), Threatened species (S1) and Fish abundance (S2).

3.3.4.4 Wetlands of National Importance

A classification system based on that used by the Ramsar Convention, but modified to suit the Australia, has been used to classify Wetlands of National Importance. The classification system uses three categories (with a number of wetland types within each): (i) Marine and Coastal Zone wetlands; (ii) Inland wetlands; and (iii) Human-made wetlands. Wetlands of National Importance located along the Gippsland Coast adjacent to the Environmental Monitoring ZPI include Ewing's Marsh, Lake Bunga, Mallacoota Inlet Wetlands, Sydenham Inlet Wetlands and Tamboon Inlet Wetlands.

3.4 Biological Environment

3.4.1 Fish, sharks and rays

3.4.1.1 Fish

Fish species listed under the EPBC Act that may occur in the CBA PRP operational area, Operational ZPI and Environmental Monitoring ZPI are given in Table 3-3. Two fish species potentially occurring within the Operational ZPI and Environmental Monitoring ZPI were listed as 'vulnerable' under the EPBC Act; the Australian grayling (*Prototroctes maraena*) and the Black rockcod (*Epinephelus daemelii*) (DoEE 2017a). The Australian Grayling is a small to medium-sized, slender, silvery fish with

soft-rayed fins. It is endemic to south-eastern Australia, including Victoria, Tasmania and New South Wales, and is a migratory species that inhabits estuarine waters and coastal seas as larvae/juveniles, but spend most of their lives in freshwater, inhabiting rivers and streams as adults (DSE, 2008). The Black cod's range includes warm temperate and subtropical waters of the southwestern Pacific, including south-eastern Australia and the North Island, Kermadec Islands and Poor Knights Islands of New Zealand. Black cod generally inhabit near-shore rocky and offshore coral reefs at depths down to 50 m. In coastal waters juveniles are often found in estuary systems with adults moving into rock caves, rock gutters and on rock reefs (DoE, 2012).

No EPBC Act listed threatened species were found to occur within the operational area (DoEE 2018a,b,c).

Pipefishes, seahorses and seadragons, as listed under the EPBC Act, require a permit to remove them from the area. Generally, the pipefishes, seahorses and seadragons are associated with vegetation in sheltered to moderately exposed reef areas at a range of depths from 0 to 50 m, depending on the species (Edgar 1997), but usually at depths of between 5 and 25 m. Given that these species normally inhabit shallow reefs and kelp beds, they are not commonly found within the CBA PRP operational area itself but occur around adjacent shorelines in the Environmental Monitoring ZPI (Kuiter 2000). Three additional species of pipefish and seadragon are listed as may occur within the Environmental Monitoring ZPI.

A review of data collected in 1998 and 1999 by Neira (2005) suggested that the presence of Bass Strait offshore production facilities (and subsea infrastructure) within and near the Gippsland Basin Exclusion Zone provides additional habitat for early life stages of a large suite of teleost fish families. However, it is likely that both species composition and abundance around the CBA PRP ZPI are closely linked to the ichthyofauna inhabiting hard/soft megahabitats off the Gippsland coastline and, to a lesser extent, those at the south-east corner of mainland Australia (e.g. Howe/Gabo complex).

3.4.1.2 Sharks and Rays

Shark and ray species listed under the EPBC Act that may occur in the CBA PRP operational area, Operational ZPI and Environmental Monitoring ZPI are given in Table 3-4. Three shark species potentially occurring within the ZPI were listed as 'threatened' under the EPBC Act; the Grey Nurse Shark (east coast population) (*Chacharias taurus*), the Great White Shark (*Carcharodon carchari*) and the Whale Shark (*Rhincodon typus*) (DoEE 2018b). The Great White Shark was also identified as known to occur within the CBA PRP operational area (DoEE 2018a,b,c).

The **Grey nurse shark** (east coast population) (*Chacharias taurus*) is commonly found in coastal waters off southern Queensland and along the entire NSW coast (Environment Australia, 2002). The species is rarely found travelling in the northern section of the Commonwealth south-east marine bioregion (DoEE 2015) and is uncommon in Victorian, South Australian and Tasmanian waters. Not much is known about the migratory habits of Grey Nurse Sharks in Australian waters, however evidence suggests migrational movement is up and down the east coast. The sharks are found mainly in warmer waters, in water depths of 15 to 40 m but also down to 230 m on the continental shelf and generally occur either alone or in small to medium sized groups (Environment Australia 2002). The Grey Nurse Shark is likely to occur within the Environmental ZPI (DoE 2018a,b,c), which marginally overlaps the BIA for migration.

The **Great white shark** (*Carcharodon carcharias*) is normally found in nearshore waters around the areas of rocky reefs and seal colonies. Studies of great white sharks indicate that they are largely transitory. Observations of adult sharks are more frequent around seal and sea lion colonies, at onshore locations including Wilson's Promontory and the Skerries. There is a tendency for juveniles to occur in different areas to adults and these are most likely pupping grounds. In Victoria the areas off Portland and Ninety Mile Beach are seasonally important to juveniles and are frequented between the months of December and June (Holliday 2003). The breeding BIA is located adjacent to the Gippsland coastline, west of Lakes Entrance. Given their transitory nature and the proximity of known congregation areas (and foraging BIA) it is likely that Great white sharks may transit the CBA PRP operational area on occasion.

Table 3-3 EPBC Act listed fish potentially occurring in the CBA PRP operational area, Operational ZPI and Environmental Monitoring ZPI

Common Name	Scientific Name	Status	Likelihood of Occurrence		
			Environmental Monitoring ZPI	Operational ZPI	Operational Area
Australian grayling	*Prototroctes maraena*	V	LO	MO	-
Australian long-snout pipefish	*Vanacampus poecilolaemus*	L	MO	MO	MO
Australian spiny pipehorse	*Solegnathus spinosissimus*	L	MO	MO	MO
Big-belly seahorse	*Hippocampus abdominalis*	L	MO	MO	MO
Black rockcod	*Epinephelus daemelii*	V	MO	MO	-
Briggs' crested pipefish	*Histiogamphelus briggsii*	L	MO	MO	MO
Brushtail pipefish	*Leptoichthys fistularius*	L	MO	MO	MO
Bullneck seahorse	*Hippocampus minotaur*	L	MO	MO	MO
Deep-bodied pipefish	*Kaupus costatus*	L	MO	MO	MO
Double-ended pipehorse	*Syngnathoides biaculeatus*	L	MO	MO	MO
Hairy pipefish	*Urocampus carinirostris*	L	MO	MO	MO
Halfbanded pipefish	*Mitotichthys semistriatus*	L	MO	MO	MO
Javelin pipefish	*Lissocampus runa*	L	MO	MO	MO
Knife-snout pipefish	*Hypselognathus rostratus*	L	MO	MO	MO
Leafy seadragon	*Phycodrus eques*	L	MO	-	-
Mother-of-pearl pipefish	*Vanacampus margaritifer*	L	MO	MO	MO
Port Phillip pipefish	*Vanacampus phillipi*	L	MO	MO	MO
Pugnose pipefish	*Pugnaso curtirostris*	L	MO	-	-
Red pipefish	*Notiocampus ruber*	L	MO	MO	MO
Rhino pipefish	*Histiogamphelus cristatus*	L	MO	MO	MO
Ringback pipefish	*Stipecampus cristatus*	L	MO	MO	MO
Robust spiny pipehorse	*Solegnathus robustus*	L	MO	MO	MO
Sawtooth pipefish	*Maroubra perserrata*	L	MO	MO	MO
Short-head seahorse	*Hippocampus breviceps*	L	MO	MO	MO
Smooth pipefish	*Lissocampus caudalis*	L	MO	-	-
Spotted pipefish	*Stigmatopora argus*	L	MO	MO	MO
Trawl pipefish	*Kimblaeus bassensis*	L	MO	MO	MO

Tucker's pipefish	*Mitotichthys tuckeri*	L	MO	MO	MO
Upside-down pipefish	*Heraldia nocturnda*	L	MO	MO	MO
Weedy seadragon	*Phyllopteryx taeniolatus*	L	MO	MO	MO
White's seahorse	*Hippocampus whitei*	L	MO	MO	MO
Widebody pipefish	*Stigmatopora nigra*	L	MO	MO	MO

Status Key:
L–Listed marine species
V-Vulnerable (threatened)

Likelihood of Occurrence Key:
KO–Species or species habitat known to occur within area
LO–Species or species habitat likely to occur within area
MO–Species or species habitat may occur within area

Whale sharks (*Rhincodon typus*) are generally found in warmer oceanic waters (where temperatures range from 21 to 25°C) and mainly occur in waters off the Northern Territory, Queensland and northern Western Australia. However, there have been a few isolated reports of immature male whale sharks in New South Wales and Victoria (Last & Stevens 1994). Whale sharks are not likely to occur in the CBA PRP operational area.

Two other species of shark, Shortfin Mako (*Isurus oxyrinchus*) and Porbeagle or Mackerel Shark (*Lamna nasus*), are listed as migratory marine species under the EPBC Act, likely to occur in the operational area, Operational ZPI and Environmental Monitoring ZPI.

Table 3-4 EPBC Act listed sharks and rays potentially occurring in the operational area, Operational ZPI and Environmental Monitoring ZPI

Common Name	Scientific Name	Status	Likelihood of Occurrence		
			Environmental Monitoring ZPI	Operational ZPI	Operational Area
Great white shark	*Carcharodon carcharias*	V, MM	BKO	FKO	KO
Grey nurse shark (east coast population)	*Chacharias taurus*	CE	LO	MO	-
Mackerel shark	*Lamna nasus*	MM	LO	LO	LO
Whale shark	*Rhincodon typus*	V, MM	MO	MO	MO
Shortfin mako	*Isurus oxyrinchus*	MM	LO	LO	LO

Status Key:
MM–Migratory marine species
V–Vulnerable (threatened)
CE – Critically Endangered

Likelihood of Occurrence Key:
BKO–Breeding known to occur within area
FKO-Foraging, feeding or related behaviour known to occur
KO–Species or species habitat known to occur within area
LO–Species or species habitat likely to occur within area
MO–Species or species habitat may occur within area

3.4.2 Marine reptiles

Reptiles listed under the EPBC Act that may occur in the operational area, Operational ZPI and Environmental Monitoring ZPI are given in Table 3-5. Three threatened species of turtle, the Loggerhead turtle (*Caretta caretta*) (endangered and migratory), the Leatherback turtle (*Dermochelys coriacea*) (endangered and migratory) and the Green turtle (*Chelonia mydas*) (vulnerable and migratory) are listed as potentially having habitat in the operational area, Operational ZPI and Environmental Monitoring ZPI (DoEE 2017e and 2017d). In addition to these species, the Hawksbill turtle (*Eretmochelys imbricata*) (vulnerable and migratory) is also listed as threatened and known to occur in the Operational and Environmental Monitoring ZPI.

The **Loggerhead turtle** occurs in Australian waters of coral and rocky reefs, seagrass beds and muddy bars throughout eastern, northern and western Australia. Nesting is mainly concentrated in southern Queensland and from Shark Bay to the North West Cape in Western Australia, which are not in the Operational ZPI. Foraging areas are more widely distributed, but also not expected to be present in the Operational ZPI (DoEE 2017d).

The **Leatherback turtle** is a pelagic feeder found in tropical, sub-tropical and temperate waters. The species is regularly found in the high latitudes of all oceans including waters offshore from NSW, Victoria, Tasmania and Western Australia. Bass Strait is considered to have one of the three largest concentrations of feeding leatherback turtles in Australia; however, even though they have not been seen anecdotally in the operational area in the last five years, they may occur in the operational area. No major nesting areas have been recorded in Australia, although scattered isolated nesting occurs outside the Operational ZPI in southern Queensland and the Northern Territory (DoEE 2017j).

The **Green turtle** are mostly known to nest, forage and migrate across tropical northern Australia. Their distribution in Australia is concentrated around Queensland, the Northern Territory and Western Australia. Green turtles can migrate more than 2,600 km between their feeding and nesting grounds.

The **Hawksbill turtle** (*Eretmochelys imbricata*) typically occurs in tidal and sub-tidal coral and rocky reef habitats throughout tropical waters, extending into warm temperate areas as far south as northern New South Wales. In Australia the main feeding area extends along the east coast, including the Great Barrier Reef. Other feeding areas include Torres Strait and the archipelagos of the Northern Territory and Western Australia, possibly as far south as Shark Bay or beyond. Hawksbill turtles also feed at Christmas Island and the Cocos (Keeling) Islands. (DoEE 2017g). It is not expected in the operational area although it may occur further inshore.

Table 3-5 EPBC Act listed reptiles potentially occurring in the operational area, Operational ZPI and Environmental Monitoring ZPI

Common Name	Scientific Name	Status	Likelihood of Occurrence		
			Environmental Monitoring ZPI	Operational ZPI	Operational Area
Green turtle	*Chelonia mydas*	V, MM, L	FKO	KO	LO
Hawksbill turtle	*Eretmochelys imbricata*	V, MM, L	FKO	KO	-
Leatherback turtle	*Dermochelys coriacea*	E, MM, L	FKO	KO	LO
Loggerhead turtle	*Caretta caretta*	E, MM, L	KO	LO	LO

Status Key:
E–Endangered (threatened)
L–Listed marine species
MM–Migratory marine species

V–Vulnerable (threatened)

Likelihood of Occurrence Key:
LO–Species or species habitat likely to occur within area
KO– Species or species habitat known to occur within area
FKO-Foraging, feeding or related behaviour known to occur within area

3.4.1 Seabirds and Shorebirds

Birds listed under the EPBC Act that may occur in the CBA PRP operational area, Operational ZPI and Environmental Monitoring ZPI are given in

Table 3-6. Many are protected by international agreements (Bonn Convention, JAMBA, CAMBA and ROKAMBA) and periodically pass through the Operational ZPI or Environmental Monitoring ZPI on their way to or from the Bass Strait islands and mainlands of Victoria, NSW and Tasmania

Table 3-6 EPBC Act listed birds potentially occurring in the operational area, Operational ZPI and Environmental Monitoring ZPI

Common Name	Scientific Name	Status	Likelihood of Occurrence		
			Environmental Monitoring ZPI	Operational ZPI	Operational Area
Antipodean albatross	*Diomedea antipodensis*	V, MM, L	FLO	FLO	LO
Australasian bittern	*Botaurus poiciloptilus*	E	KO	-	-
Australian fairy tern	*Sternula nereis nereis*	V, L	BLO	FLO	FLO
Australian painted snipe	*Rostratula australis*	E, L	LO	-	-
Bar-tailed godwit	*Limosa lapponica baurei*	V, MW, L	LO	-	-
Black-browed albatross	*Thalassarche melanophris*	V, MM, L	FLO	MO	MO
Black-faced monarch	*Monarcha melanopsis*	L	KO	-	-
Blue petrel	*Halobaena caerulea*	V, L	MO	MO	MO
Buller's albatross	*Thalassarche bulleri*	V, MM, L	FLO	FLO	MO
Campbell albatross	*Thalassarche impavida*	V, MM, L	FLO	FLO	LO
Cattle egret	*Ardea ibis*	L	MO	-	-
Chatham albatross	*Thalassarche eremita*	E, MM, L	FLO	FLO	LO
Common diving petrel	*Pelecanoides urinatrix*	L	BKO	-	-
Common sandpiper	*Actitis hypoleucos*	MW, L	LO	MO	MO
Curlew sandpiper	*Calidris ferruginea*	CE, MW, L	KO	MO	MO
Eastern bristlebird	*Dasyornis brachypterus*	E	KO	-	-
Double banded plover	*Charadrius bicintus*	MW	FKO	-	-
Eastern curlew	*Numenius madagascariensis*	CE, MW, L	MO	MO	MO
Fairy prion	*Pachyptila turtur subantarctica*	V, L	KO	LO	MO
Flesh-footed shearwater	*Puffinus carneipes*	MM, L	FLO	FLO	LO
Fork-tailed swift	*Apus pacificus*	MM, L	LO	LO	-
Gibson's albatross	*Diomedea antipodensis gibsoni*	V, L	FLO	FLO	LO
Gould's petrel	*Pterodroma leucoptera*	E	MO	MO	MO
Great egret	*Ardea alba*	L	KO	LO	-
Great knot	*Calidris tenuirostris*	CE, MW, L	FKO	-	-
Great skua	*Catharacta skua*	L	MO	MO	MO
Grey-headed albatross	*Thalassarche chrysostoma*	E, MM, L	MO	MO	MO
Hooded plover	*Thinornis rubricollis*	L	KO	-	-
Hooded plover (eastern)	*Thinornis rubricollis*	V, L	KO	-	-
Latham's snipe	*Gallinago hardwickii*	MW, L	MO	-	-
Little curlew	*Numenius minutus*	MW, L	FLO	-	-
Little penguin	*Eudyptula minor*	L	BKO	-	-
Little tern	*Sterna albifrons*	MM, L	MO	-	-
Northern Buller's albatross	*Thalassarche bulleri platei*	V	FLO	FLO	MO

Northern giant-petrel	*Macronectes halli*	V, MM, L	MO	MO	MO
Northern royal albatross	*Diomedea sanfordi*	E, MM, L	FLO	FLO	LO
Northern Siberian bar-tailed godwit	*Limosa lapponica menbieri*	CE, L	MO	-	-
Orange-bellied parrot	*Neophema chrysogaster*	CE, L	MO	-	-
Osprey	*Pandion haliaetus*	MW, L	LO	MO	-
Pacific albatross	*Thalassarche* sp.nov.	V, L	FLO	FLO	MO
Pacific gull	*Larus pacificus*	L	BKO	-	-
Painted honeyeater	*Grantiella picta*	V	MO	-	-
Pectoral sandpiper	*Calidris melanotos*	MW, L	MO	MO	MO
Pin tailed snipe	*Gallinago stenura*	MW, L	FLO	-	-
Rainbow bee-eater	*Merops ornatus*	L	MO	-	-
Red necked stint	*Calidris ruficolis*	MW	FKO	-	-
Red knot	*Calidris canutus*	E, MW, L	KO	MO	MO
Regent honeyeater	*Anthocharea phrygia*	CE	LO	-	-
Ruddy turnstone	*Arenaria interpres*	MW, L	FKO	-	-
Rufous fantail	*Rhipidura rufifrons*	L	KO	-	-
Sanderling	*Calidris alba*	MW, L	FKO	-	-
Salvin's albatross	*Thalassarche salvini*	V, MM, L	FLO	FLO	LO
Satin flycatcher	*Myiagra cyanoleuca*	L	KO	-	-
Sharp-tailed sandpiper	*Calidris acuminata*	MW, L	FKO	MO	MO
Short tailed shearwater	*Ardenna tenuirostris*	MM, L	BKO	-	-
Sooty albatross	*Phoebetria fusca*	V, MM, L	LO	MO	MO
Southern giant-petrel	*Macronectes giganteus*	E, MM, L	MO	MO	MO
Southern royal albatross	*Diomedea epomophora*	V, MM, L	FLO	FLO	LO
Spectacled monarch	*Monarcha trivirgatus*	L	KO	-	-
Swift parrot	*Lathamus discolor*	CE, L	MO	-	-
Swinhoe's snipe	*Gallinago megala*	MW, L	FLO	-	-
Tasmanian shy albatross	*Thalassarche cauta*	V, MM, L	FLO	FLO	LO
Wandering albatross	*Diomedea exulans*	V, MM, L	FLO	FLO	LO
Whimbrel	*Numenius phaeopus*	MW, L	FKO	-	-
White bellied storm petrel	*Fregetta grallaria*	V	LO	LO	LO
White-bellied sea-eagle	*Haliaeetus leucogaster*	L	KO	-	-
White-capped albatross	*Thalassarche cauta steadi*	V, MM, L	FLO	FLO	LO
White-faced storm petrel	*Pelagodroma marina*	L	BKO	-	-
White-throated needletail	*Hirundapus caudacutus*	L	KO	-	-

Status Key:
E–Endangered (threatened)
V–Vulnerable (threatened)
CE-Critically endangered (threatened)
L–Listed marine species
MM–Migratory marine birds
MW–Migratory wetland species

Likelihood of Occurrence Key:
BLO-Breeding likely to occur within area
FLO-Feeding likely to occur within area
LO–Species or species habitat likely to occur within area
MO–Species or species habitat may occur within area
KO–Species or species habitat known to occur within area

The Victorian coast and neighbouring islands provide feeding and nesting habitats for many coastal and migratory bird species. Seabirds spend much of their lives at sea in search of prey only to return for a short time to breed and raise chicks. Most species tend to forage on their own, though large feeding flocks will gather at rich or passing food sources. Squid, fish and krill are common sources of food.

No islands are located within the Operational ZPI, although islands within the Environmental Monitoring ZPI are nesting sites for many seabird species, many of which migrate to these islands each year. Colonies of seabirds occur to the west of the operational area in Corner Inlet and on the islands around Wilsons Promontory, to the east at The Skerries, Tullaberga Island and Gabo Island and to the south on Curtis Island and the Hogan Island Group (Harris & Norman 1981). Species that nest and breed on these islands include the listed marine species, Little penguin (*Eudyptula minor*), White-faced storm petrel (*Pelagodroma marina*), Short-tailed shearwater (*Puffinus tenuirostris*) and the Fairy prion (*Pachyptila turtur*). Recent research investigating feeding movements of the Little penguin has found individuals that nest on these islands move into eastern Bass Strait (Hoskins *et al*. 2008). The BIAs for White-faced storm petrel, Wedge-tailed shearwater, Short-tailed shearwater and Little penguin overlap the Operational ZPI and Environmental Monitoring ZPI.

Eastern Bass Strait is also a foraging area for at least 16 listed species of albatross, six listed species of petrel and one species of skua. Most also forage in eastern Bass Strait within the Operational ZPI and Environmental Monitoring ZPI and are expected to occur within the operational area. There are six species of albatross where the BIA for foraging overlaps the operational area, Operational ZPI or Environmental Monitoring ZPI.

The Environmental Monitoring ZPI also includes much of the east Gippsland coastline. Coastal wetlands such as Corner Inlet and Gippsland Lakes are periodically inhabited by waders (birds) due to their migratory nature. Migratory species include the Red-necked stint (*Calidris ruficollis*), Curlew sandpiper (*Calidris ferruginea*), Great knot (*Calidris tenuirostris*), Bar-tailed godwit (*Limosa lapponica*) and Eastern curlew (*Numenius madagascariensis*). Similarly, a number of oceanic seabirds, such as the Little tern (*Sterna albifrons*) and Short-tailed shearwater (*Puffinus tenuirostris*) migrate to the East Gippsland region. Over 20 million Short-tailed shearwaters nest on Bass Strait islands during summer (Pizzey 2003). Of these, only the Curlew sandpiper (*Calidris ferruginea*), and Eastern curlew (*Numenius madagascariensis*) may also occur in the operational area.

Both the Hooded plover (*Thinornis rubricollis*) and Australian fairy tern (*Sternula nereis nereis*) nest along the sandy beaches of the Gippsland coast within the Environmental Monitoring ZPI. Nests are predominantly located in the adjacent sparsely vegetated dunes above the high tide level (DoEE 2017h and 2017i) but these species are not expected within the CBA PRP operational area.

Little penguins (*Eudyptula minor*) breed in colonies along the southern coast of Australia. They seek prey in shallow short dives, frequently between the 10 to 30 m range and very occasionally extending to 60 m. Its diet varies in different locations but consists mainly of small school fish, some squid or krill (shrimp-like crustaceans). Little penguin colonies can be found at Gabo Island, Tullaberga Island, The Skerries, Rabbit Island, Monkey Point (Wilsons Promontory), Seal Island, Notch Island, Rag Island, Hogan Island Group (Tas.), Curtis Island (Tas) (DoEE 2017m) but are not expected within the Operational ZPI or the operational area.

It is common to see some migratory birds rest on offshore facilities in the Gippsland Basin before continuing on their migratory flight, however, the presence of the offshore facilities does not appear to significantly disrupt or divert their migratory route or disorient the birds.

3.4.2 Marine mammals

3.4.2.1 Pinnipeds

Seals listed under the EPBC Act that may occur in the operational area, Operational ZPI and Environmental Monitoring ZPI are given in Table 3-7. Dugongs are not expected to occur within the Environmental Monitoring ZPI. The two species of seal, the Australian fur seal (*Arctocephalus pusillus*) and the New Zealand fur seal (*Arctocephalus forsteri*), do not carry a threatened status under Commonwealth legislation (DoEE 2017j) or Victorian State legislation. Seals are frequently seen

throughout Esso's oil and gas operational areas and are usually found resting on the offshore facility structures and swimming in the vicinity.

The 2010 estimate of pup numbers (Kirkwood *et al* 2010) placed the total number of Australian fur seal pups at 26,000, which increased since 2002. There are 10 established breeding colonies of the Australian fur seal, which are restricted to islands in the Bass Strait; six occurring off the coast of Victoria and four off the coast of Tasmania (Kirkwood *et al*. 2010; Pemberton & Kirkwood 1994; Warneke 1995). Australian fur seals breed during the summer months, with pups born from late October to late December. Breeding is known to occur within the Environmental Monitoring ZPI.

The closest colonies of the Australian fur seal in the Environmental Monitoring ZPI are located at Gabo Island, Kanowna Island (off Wilson's Promontory) and The Skerries, which is home to a major Australian fur seal breeding colony with an estimated population of 11,500, representing approximately 12% of the national population. Between feeding trips seals return to land to rest, for example at the resting site at Cape Conran.

In addition to the colonies, Australian fur seals have over 50 'haul out' or resting sites around south eastern Australia. Pups are not typically born at 'haul out' sites.

Table 3-7 EPBC Act listed seals potentially occurring in the operational area and ZPI

Common Name	Scientific Name	Status	Likelihood of Occurrence		
			Environmental Monitoring ZPI	Operational ZPI	Operational Area
Australian fur seal	*Arctocephalus pusillus*	L	BKO	LO	-
New Zealand fur seal	*Arctocephalus forsteri*	L	MO	MO	-

Status Key:
L–Listed marine species

Likelihood of Occurrence Key:
LO- Species or species habitat likely to occur within area
MO–Species or species habitat may occur within area
BKO-Breeding known to occur within area

Satellite tracking of seals from both Kanowna Island and The Skerries, and reports from offshore facilities within the Gippsland Basin Exclusion Zone near the shore show that Australian fur seals commonly occur in the vicinity of these facilities (Arnould & Kirkwood 2008) and commonly rest on these structures.

The New Zealand fur seal also breeds along the south-eastern coast of Australia, ashore (generally on remote islands), and feeds at sea, mostly on cephalopods and fish. Despite breeding in south-eastern waters, the largest populations are found outside Bass Strait on Macquarie Island.

3.4.2.2 Cetaceans

Cetaceans listed under the EPBC Act that may occur in the CBA PRP operational area, Operational ZPI and Environmental Monitoring ZPI are given in Table 3-8. Under the EPBC Act all cetaceans (whales, dolphins and porpoises) are protected in Australian waters. The Australian Whale Sanctuary includes all Commonwealth waters from the 3 NM State waters limit out to the boundary of the Exclusive Economic Zone (i.e. out to 200 NM and further in some places) and within the Sanctuary it is an offence to kill, injure or interfere with a cetacean. All states and territories also protect whales and dolphins within their waters (DoEE 2017l). The following cetaceans are listed as threatened:

- Blue whale (Balaenoptera musculus)
- Fin Whale (Balaenoptera physalus)
- Humpback whale (Megaptera novaeangliae)
- Sei Whale (Balaenoptera borealis)
- Southern right whale (Eubalaena australis

Table 3-8 EPBC Act listed cetaceans potentially occurring in the operational area, Operational ZPI and Environmental Monitoring ZPI

Common Name	Scientific Name	Status	Likelihood of Occurrence		
			Environmental Monitoring ZPI	Operational ZPI	Operational Area
Dolphins					
Bottlenose dolphin	*Tursiops truncatus s. str.*	L	MO	MO	MO
Common dolphin	*Delphinus delphis*	L	MO	MO	MO
Dusky dolphin	*Lagenorhynchus obscurus*	MM, L	LO	LO	MO
Indian ocean bottlenose dolphin	*Tursiops aduncus*	L	LO	LO	-
Risso's dolphin, Grampus	*Grampus griseus*	L	MO	MO	MO
Southern right whale dolphin	*Lissodelphis peronei*	L	MO	MO	-
Whales					
Andrew's beaked whale	*Mesoplodon bowdoini*	L	MO	MO	-
Antarctic minke whale	*Balaenoptera bonaerensis*	MM, L	LO	LO	-
Arnoux's beaked whale	*Berardius arnuxii*	L	MO	MO	-
Blainsville's beaked whale	*Mesoplodon densirostris*	L	MO	MO	-
Blue whale	*Balaenoptera musculus*	E, MM, L	LO	LO	LO
Bryde's whale	*Balaenoptera edeni*	MM, L	MO	MO	MO
Cuvier's beaked whale	*Ziphius cavirostris*	L	MO	MO	-
Dwarf sperm whale	*Kogia simus*	L	MO	MO	-
False killer whale	*Pseudorca crassidens*	L	LO	LO	LO
Fin Whale	*Balaenoptera physalus*	V, MM, L	FLO	FLO	FLO
Gray's beaked whale	*Mesoplodon grayi*	L	MO	MO	-
Hector's beaked whale	*Mesoplodon hectori*	L	MO	MO	-
Humpback whale	*Megaptera novaeangliae*	V, MM, L	KO	KO	KO
Killer whale, Orca	*Orcinus orca*	MM, L	LO	LO	LO
Long-finned pilot whale	*Globicephala melas*	L	MO	MO	-
Minke whale	*Balaenoptera acutorostrata*	L	MO	MO	MO
Pygmy right whale	*Caperea marginata*	MM, L	FLO	FLO	FLO
Pygmy sperm whale	*Kogia breviceps*	L	MO	MO	-
Sei Whale	*Balaenoptera borealisc*	V, MM, L	FLO	FLO	FLO
Short-finned pilot whale	*Globicephala macrorhynchus*	L	MO	MO	-
Southern right whale	*Eubalaena australis*	E, MM, L	KO	KO	KO
Sperm whale	*Physeter macrocephalus*	MM, L	MO	MO	-

Common Name	Scientific Name	Status	Likelihood of Occurrence		
			Environmental Monitoring ZPI	Operational ZPI	Operational Area
Strap-toothed beaked whale	*Mesoplodon layardii*	L	MO	MO	-
True's beaked whale	*Mesoplodon mirus*	*L*	*MO*	*MO*	-

***Status* Key:**
C–Listed cetacean species
E–Endangered (threatened)
L–Listed marine species
MM–Migratory marine species
MT–Migratory terrestrial species
V–Vulnerable (threatened)

Likelihood of Occurrence Key:
FLO–Foraging likely to occur within area
LO–Species or species habitat likely to occur within area
MO–Species or species habitat may occur within area
KO–Species or species habitat known to occur within area

Humpback whales migrate annually along the eastern coast of Australia heading north to tropical calving grounds from June to August, and south to Southern Ocean feeding areas from September to November. While the main migration route of this species is along the east coast of Australia along the continental shelf to the east of Bass Strait, some animals migrate through Bass Strait and into the CBA PRP operational area. Humpback whales do not feed, breed or rest in Bass Strait and the Victorian coastal waters are not a key location for this whale species (Bannister *et al*. 1996). Humpback whales (*Megaptera novaeangliae*) are regularly spotted from Esso's operational areas within the Gippsland Basin Exclusion Zone.

Southern right whales (*Eubalaena australis*) travel along the southern coast of Australia in winter and spring (Kemper *et al.* 1997). They migrate annually along the eastern coastline from high latitude feeding grounds to lower latitudes for calving between mid-May and September (DoEE 2017k). Winter, in particular, is the peak for Southern right whale abundance, especially along the southern coast of Australia (Kemper *et al.* 1997). At this time, calving adult females are spotted frequently nearshore in shallow, northeast trending bays over sandy bottoms (Bannister *et al*. 1996). Although sighted along the Gippsland coast during migration, the known Southern right whale calving and nursery zone is located in the nearshore waters of western Victoria around Warrnambool, a considerable distance from the operational area and outside of the Environmental Monitoring ZPI. The operational area, Operational ZPI and Environmental Monitoring ZPI overlap with the Southern right whale migration BIA.

Table 3-9 Whale migration timing in Bass Strait

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CBA PRP Activities												
Blue whale												
Southern right whale												
Humpback whale												

Blue whales (*Balaenoptera musculus*).There are two subspecies of Blue whale that occur within Australian waters and Blue whale sightings in Australia are widespread. Blue whales have extensive migration patterns that are not known to follow any particular coastlines or oceanographic features (Bannister *et al*. 1996) and there is increasing evidence that blue whales may not all follow precisely-timed annual migrations, rather, the timing of migrations may be staggered throughout the year, and/or some whales may not migrate every year (DoEE 2015b). However, they are most likely to be present in southeastern Australian seas from November through to December as a result of migration to warmer waters.

Blue whales are observed more frequently in western Victoria and southeastern South Australia, where they occur along the continental shelf break (Gill 2002; Gill & Morrice 2003) than in eastern Bass Strait. While eastern Bass Strait is not known as a feeding or aggregation area for this mammal species and sightings in the Gippsland Basin are reasonably rare (Bannister *et al*., 1996), feeding areas do occur at

upwelling locations where nutrient enriched water and krill occur. Australia has two recognised seasonal feeding aggregations of Blue whales. One occurs adjacent to the Bonney Upwelling system off South Australia and Victoria (the other off Exmouth, WA). In the Bonney Upwelling, the most Blue whales spotted in a single aerial survey was 50 (based on 100 aerial surveys in 1998 - 2005).

Outside of these recognised feeding areas possible foraging areas for the Pygmy blue whale (*Balaenoptera musculus brevicauda*) include Bass Strait (DoEE 2015b). Pygmy blue whales are typically foraging in this area between January and April, however the abundance of whales in the area varies widely both within and between seasons. An anecdotal feeding area is located offshore of Eden and Merimbula, NSW (especially during October) (DoEE 2015b). The operational area, Operational ZPI and Environmental Monitoring ZPI overlap the foraging BIA for the Pygmy blue whale.

Sei whales (Balaenoptera borealis) have been infrequently recorded in Australian waters; however occasional sightings have been recorded within the Great Australian Bight (DoEE 2018d). Sei Whales typically feed between the Antarctic and Subtropical convergences (DoEE 2018d). However, Sei Whales have also been observed feeding on the continental shelf in the Bonney Upwelling region during November and May, suggesting the area may be used for opportunistic feeding (DoEE 2018d).

Fin whales (*Balaenoptera physalus*) The distribution of Fin whales in Australian waters is uncertain, but they have been recorded in Commonwealth waters off most States (DEE, 2017t). Fin whales frequently lunge or skim feed, at or near the surface (DEE, 2017t). Fin whales have been observed in waters off the Bonney Upwelling during November and May, suggesting the region may be used for opportunistic feeding (DEE 2018e).

Pygmy right whales (*Caperea marginata*) have primarily been recorded in areas associated with upwellings and with high zooplankton abundance, which constitute their main prey (DEE 2018f).

The Bottlenose dolphin (*Tursiops truncatus*) and the **Common dolphin** (*Delphinus delphis*) are commonly sighted in near-shore Victorian waters and may be in the operational area; however they do not carry a threatened status under Commonwealth legislation (DoEE 2017j). These species feed on fish and cephalopods.

Dusky dolphins (*Lagenorhyynchus obscurus*) are listed as a migratory marine species likely to be present in the vicinity of the CBA PRP operational area; however they do not carry a threatened status under Commonwealth legislation (DoEE 2017j). Although Dusky dolphins have been sighted off Tasmania, there is no known calving locality for this species in Australian waters (Gill *et al.* 2000).

The Environmental Monitoring ZPI impinges on the BIA for breeding for the **Indo-pacific/spotted bottlenose dolphin**.

Whales are known, and observed, to play and display normal breaching, blowing, lobtailing and diving behaviour around the operational area and vessels, including with calves, before moving on again. Although whales are known to migrate through the region during spring and autumn/early winter, the CBA PRP operational area is not a recognised feeding, breeding or resting area for cetaceans.

3.4.3 Listed threatened species recovery plans

The requirements of the species recovery plans and conservation advices (Table 3-10) have been considered to identify any requirements that may be applicable to the risk assessments (Chapter 5). Recovery plans are enacted under the EPBC Act and remain in force until the species is removed from the threatened list. Conservation advice provides guidance on immediate recovery and threat abatement activities that can be undertaken to facilitate the conservation of a listed species or ecological community.

Table 3-10 outlines the recovery plans and conservation advices relevant to those species identified as potentially occurring within or utilising habitat in the operational area, Operational ZPI and Environmental Monitoring ZPI by the EPBC Protected Matters search and summarises the key threats to those species, as described in relevant recovery plans and conservation advices.

Table 3-10 Conservation advice for EPBC listed species considered during environmental risk assessment

Species / Sensitivity	Status	Likelihood of Occurrence			Recovery Plan / Conservation Advice (Date Issued)	Presence of BIA	Key Threats Identified in the Recovery Plan / Conservation Advice	Relevant Conservation Actions	Relevant Section of EP
		Environmental Monitoring ZPI	Operational ZPI	Operational Area					
Marine mammals									
Sei whale	V, MM	FLO	FLO	FLO	Approved Conservation Advice for *Balaenoptera borealis* (sei whale) (TSSC 2015a)		Noise interference, vessel disturbance	• Evaluate risk of sound impacts to cetaceans and, if required, ensure appropriate mitigation measures are implemented • Evaluate risk of vessel strikes and, if required, ensure appropriate mitigation measures are implemented • Ensure all vessel strike incidents are reported in the National Vessel Strike Database	5.1.2 and 5.1.7
Blue whale	E, MM	LO	LO	LO	Conservation Management Plan for the Blue Whale - A Recovery Plan under the Environment Protection and Biodiversity Conservation Act 1999 (DoEE 2015b)	Distribution / Foraging (Pygmy blue whale) – overlaps Operational Area	Noise interference, vessel disturbance	• Evaluate risk of sound impacts to cetaceans and, if required, ensure appropriate mitigation measures are implemented • Evaluate risk of vessel strikes and, if required, ensure appropriate mitigation measures are implemented • Ensure all vessel strike incidents are reported in the National Vessel Strike Database	5.1.2 and 5.1.7
Fin whale	V, MM	FLO	FLO	FLO	Approved Conservation Advice for *Balaenoptera physalus* (fin whale) (TSSC 2015c)		Noise interference, vessel disturbance	• Once the biologically important areas for fin whales are defined (both spatial and temporal aspects) an assessment of anthropogenic noise impact should be conducted for this species • Develop a national vessel strike strategy that investigates the risk of vessel strikes on fin whales and also identifies potential mitigation measures • Evaluate risk of sound impacts to cetaceans and, if required, ensure appropriate mitigation measures are implemented • Evaluate risk of vessel strikes and, if required, ensure appropriate mitigation measures are implemented • Ensure all vessel strike incidents are reported in the National Vessel Strike Database	5.1.2 and 5.1.7
Southern right whale	E, MM	KO	KO	KO	Conservation Management Plan for the Southern Right Whale. A Recovery Plan under the Environment Protection and Biodiversity Conservation Act 1999 (DSEWPAC 2012)	Migration – overlaps Operational and Environmental Monitoring ZPIs	Noise interference, vessel disturbance	• Evaluate risk of sound impacts to cetaceans and, if required, ensure appropriate mitigation measures are implemented • Evaluate risk of vessel strikes and, if required, ensure appropriate mitigation measures are implemented • Ensure all vessel strike incidents are reported in the National Vessel Strike Database	5.1.2 and 5.1.7

Species / Sensitivity	Status	Likelihood of Occurrence			Recovery Plan / Conservation Advice (Date Issued)	Presence of BIA	Key Threats Identified in the Recovery Plan / Conservation Advice	Relevant Conservation Actions	Relevant Section of EP
		Environmental Monitoring ZPI	Operational ZPI	Operational Area					
Humpback whale	V, MM	KO	KO	KO	Approved Conservation Advice for *Megaptera novaeangliae* (humpback whale) (TSSC 2015e)		Noise interference, vessel disturbance	• Site-specific modelling should be conducted to investigate acoustic impacts (including cumulative impacts) on humpback whale calving, resting, feeding areas or migratory pathways (for example from pile driving or explosives) • Ensure the risk of vessel strike on humpback whales is considered when assessing actions that increase vessel traffic in areas where humpack whales occur and, if required appropriate mitigation measures are implemented to reduce the risk of vessel strike • Evaluate risk of sound impacts to cetaceans and, if required, ensure appropriate mitigation measures are implemented • Ensure all vessel strike incidents are reported in the National Vessel Strike Database	n/a – noise modelling would not reduce potential impact of noise to cetaceans given the low levels expected (5.1.2 and 5.1.7)
Marine reptiles									
Loggerhead turtle Green turtle Hawksbill turtle	E, MM V, MM V, MM	KO FKO FKO	LO KO KO	LO LO -	Recovery plan for marine turtles in Australia (DoEE 2017)		Vessel disturbance, oil pollution	• Vessel interactions identified as a threat. No explicit relevant management actions relating to vessels prescribed in the plan • Ensure that spill risk response programs and strategies include management of turtles and turtle habitats	5.1.2 and 5.1.7 / 5.3.5
Leatherback turtle,	E, MM	FKO	KO	LO	Recovery plan for marine turtles in Australia (DoEE 2017) Commonwealth Conservation Advice on *Dermochelys coriacea* (TSSC 2008)		Vessel disturbance	• No explicit relevant management actions. Vessel interactions identified as a threat	5.1.7
Fish, sharks and rays									
Australian grayling	V	LO	MO	-	National Recovery Plan for the Australian Grayling *Prototroctes maraena* (DSE, 2008)		Vegetation clearing, impoundment or diversion of water, installation of structures acting as barriers to migration	• No relevant management actions	n/a
Black rockcod	V	MO	MO	-	Approved Conservation Advice for *Epinephelus daemelii* (black cod) (DoE, 2012a)		Incidental by-catch and illegal fishing	• No relevant management actions	n/a

Species / Sensitivity	Status	Likelihood of Occurrence			Recovery Plan / Conservation Advice (Date Issued)	Presence of BIA	Key Threats Identified in the Recovery Plan / Conservation Advice	Relevant Conservation Actions	Relevant Section of EP
		Environmental Monitoring ZPI	Operational ZPI	Operational Area					
Grey nurse shark (east coast population)	CE	LO	MO	-	Recovery Plan for the Grey Nurse Shark (Carcharias taurus) (DoEE 2014)	• Migration – overlaps Environmental Monitoring ZPI	Habitat modification and pollution	• No explicit relevant management actions	n/a
Great white shark	V, MM	BKO	FKO	KO	Recovery Plan for the White Shark (*Carcharodon carcharias*) (DSEWPAC 2013)	• Distribution • Foraging / Breeding – overlap Operational and Environmental Monitoring ZPIs	None	• No explicit relevant management actions	n/a
Whale shark	V, MM	MO	MO	MO	Approved Conservation Advice for *Rhincodon typus* (whale shark) (TSSC 2015g)		Vessel disturbance, habitat degradation / modification	• Assess impacts to whale sharks from offshore installations and associated environmental changes (chronic noise, light spill, water temperature changes, altered nutrient levels) and the mitigation measures required • Evaluate risk of vessel interactions and ensure appropriate mitigation measures are implemented if required (collision avoidance systems) • Minimise offshore development and transit of large vessels near habitats which correlate with whale shark aggregations and migration routes	n/a – no installation
Seabirds									
Antipodean albatross, Gibson's albatross, Southern Royal albatross, Wandering albatross, Northern royal albatross, Sooty, albatross, Buller's albatross, Shy albatross, White-capped	V, MM V V V, MM E, MM V, MM V, MM V, MM V, MM	FLO FLO FLO FLO FLO LO FLO FLO FLO	FLO FLO FLO FLO FLO MO FLO FLO FLO	LO LO LO LO LO MO FLO LO LO	National recovery plan for threatened albatrosses and giant petrels 2011-2016 (DSEWPAC 2011b)	White capped albatross / Northern giant petrel / Southern giant petrel – Foraging BIA overlaps Environmental Monitoring ZPI Indian yellow nosed albatross / Campbell albatross / Black browed albatross and Shy albatross – Foraging BIA overlaps Operational Area Bullers albatross – Foraging BIA overlaps Operational Area	Vessel disturbance, oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5

Species / Sensitivity	Status	Likelihood of Occurrence			Recovery Plan / Conservation Advice (Date Issued)	Presence of BIA	Key Threats Identified in the Recovery Plan / Conservation Advice	Relevant Conservation Actions	Relevant Section of EP
		Environmental Monitoring ZPI	Operational ZPI	Operational Area					
albatross, Grey-headed	E, MM	MO	MO	MO		Antipodean albatross – Foraging BIA overlaps Operational Area			
albatross, Chatham	E, MM	FLO	FLO	LO					
albatross, Campbell	V, MM	FLO	FLO	LO					
albatross, Black-browed	V, MM	FLO	FLO	MO					
albatross, Salvin's	V, MM	FLO	FLO	LO					
albatross, Northern	V, MM	MO	MO	MO					
giant petrel, Southern	E, MM	FLO	LO	MO					
giant petrel									
Australasian bittern	E	KO	-	-	Approved Conservation Advice for *Botaurus poiciloptilus* (Australasian Bittern) (DSEWPAC 2011a)		Habitat modification and pollution	• Manage any changes to hydrology that may result in changes to sedimentation or pollution.	5.3.5
Australian fairy tern	V	BLO	FLO	FLO	Commonwealth Conservation Advice on *Sternula nereis nereis* (Fairy Tern) (TSSC 2011)		Habitat degradation / modification - oil pollution	• Ensure appropriate oil-spill contingency plans exist to manage subspecies' breeding sites which are vulnerable to oil spills	5.3.5 / 7
Australian painted snipe	E	LO	-	-	There is no adopted or made Recovery Plan for this species.		Habitat degradation / modification - oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Bar-tailed godwit,	V, MW	LO	-	-	Approved Conservation Advice for *Limosa lapponica baueri* (Bar-tailed godwit (western Alaskan)) (TSSC 2016b)		Habitat degradation - oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Blue petrel	V	MO	MO	MO	Conservation Advice *Halobaena caerulea* (Blue petrel (TSSC 2015b)		None	• No explicit relevant management actions	n/a
Curlew sandpiper	CE, MW	KO	MO	MO	Approved Conservation Advice for *Calidris ferruginea* (Curlew Sandpiper) (TSSC 2015d)		Habitat degradation - oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Eastern bristlebird	E	KO	-	-	National Recovery Plan for Eastern Bristlebird		Habitat degradation / modification - oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5

Species / Sensitivity	Status	Likelihood of Occurrence			Recovery Plan / Conservation Advice (Date Issued)	Presence of BIA	Key Threats Identified in the Recovery Plan / Conservation Advice	Relevant Conservation Actions	Relevant Section of EP
		Environmental Monitoring ZPI	Operational ZPI	Operational Area					
					Dasyornis brachypterus. (OEH 2012).				
Eastern curlew	CE, MW	MO	MO	MO	Approved Conservation Advice for *Numenius madagascariensis* (Eastern Curlew) (TSSC 2015f)		Habitat degradation / modification - oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Fairy prion (southern)	V	KO	LO	MO	Conservation Advice *Pachyptila turtur subantarctica* fairy prion (southern) (TSSC 2015b)		None	• No explicit relevant management actions	n/a
Gould's petrel	E	MO	MO	MO	Gould's Petrel (*Pterodroma leucoptera leucoptera*) Recovery Plan (DoECC (NSW) 2006)		Oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Great knot	CE, MW	FKO	-	-	Conservation Advice for *Calidris tenuirostriss* (Great Knot) (TSSC 2016c)		Habitat degradation – water quality deterioration, environmental pollution	• No explicit relevant management actions.	n/a
Hooded plover (eastern)	V	KO	-	-	Recovery Plan not required. significant research and management actions are being undertaken at national, state and local levels		Oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Northern Siberian bar-tailed godwit	CE	MO	-	-	Approved Conservation Advice for *Limosa lapponica menzbieri* (Bar-tailed godwit (northern Siberian)) (TSSC 2016)		Habitat degradation - oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Orange bellied parrot	CE	MO	-	-	National recovery plan for the Orange-bellied Parrot (*Neophema chrysogaster*) (DELWP, 2016)		Oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Red knot	E, MW	KO	MO	MO	Approved Conservation Advice for *Calidris canutus* (Red knot) (TSSC 2016a)		Habitat degradation - oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
Red knot, Great knot, Bar-tailed godwit, Greater sand plover					Wildlife conservation plan for migratory shorebirds (DoEE, 2015d)		Habitat degradation / modification - oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5

Species / Sensitivity	Status	Likelihood of Occurrence			Recovery Plan / Conservation Advice (Date Issued)	Presence of BIA	Key Threats Identified in the Recovery Plan / Conservation Advice	Relevant Conservation Actions	Relevant Section of EP
		Environmental Monitoring ZPI	Operational ZPI	Operational Area					
Regent honeyeater	CE	LO	-	-	National Recovery Plan for the Regent Honeyeater (*Anthochaera phrygia*) (DoEE, 2016)		Habitat loss / degradation	• No explicit relevant management actions.	n/a
Swift parrot	CE	MO	-	-	National Recovery Plan for the Swift Parrot *Lathamus discolor*. (Saunders and Tzaros 2011).		Oil pollution	• No explicit relevant management actions. Oil pollution is recognised as a threat	5.3.5
White-bellied storm-petrel (Tasman Sea)	V	LO	LO	LO	Lord Howe Island Biodiversity Management Plan (DoECC (NSW) 2007)		Habitat degradation / modification	• • No explicit relevant management actions. Degradation / modificiation to threatened habitat recognised as a threat	5.3.5

3.4.4 Shoreline and intertidal marine habitat

No shoreline contact, above the ANZECC reference level threshold for entrained oil, is expected based on oil spill modelling. The Environmental Monitoring ZPI, which is based on the ANZECC reference level entrained oil threshold, however includes much of the coastline of Gippsland therefore, for completeness, further details on the shoreline have been included below.

The coastline, from Wilson's Promontory in the west to Cape Howe in the east, including the offshore islands at the extremities of the region, consists mainly of steep rocky cliffs, sandy beaches and rocky outcrops. The shoreline is generally one of high sea activity due to prevailing weather patterns.

The shoreline of the inland waters adjacent to the Environmental Monitoring ZPI which includes Corner Inlet, the Gippsland Lakes and Mallacoota Inlet consist of sandy beach, salt marsh, mangrove or mudflats (Boon *et al*. 2011). These shores are generally protected from all but the worst weather conditions and therefore have very low sea activity.

3.4.4.1 Intertidal Rocky Shores

Sheltered rocky shores are characterized by a rocky substrate that can vary widely in permeability. Sheltered clay scarps are characterized by a steep, usually vertical scarp in hard-packed and stiff clay. Vegetation usually occurs landward of the scarp (NOAA 2010d). Most animals on the intertidal rocky shores are herbivorous molluscs, grazing algae off rock surfaces. Filter feeding organisms abound, including tube building worms, sea squirts (cunjevoi), mussels and barnacles.

Intertidal rocky shores occur at Bastion Point, Quarry Beach, Shipwreck Creek, Seal Cove, Little Rame Head, Sandpatch Point, Petrel Point, Thurra River, Clinton Rocks, Cloke Rock, Tamboon Inlet and Shelley Beach.

3.4.4.2 Intertidal, Emergent, Sub Tidal Aquatic Vegetation (Seagrass and Kelp)

Seagrasses are highly productive habitats that occur on intertidal flats and in shallow coastal waters worldwide from arctic to tropical climates. Water temperature, light penetration, sediment type, salinity, and wave or current energy control seagrass distribution. Seagrasses provide breeding and nursery grounds for fish and wildlife. Seagrasses are used by fish and shellfish as nursery areas.

Kelps are very large brown algae that grow on hard sub tidal substrates in cold temperate regions. Kelps have a holdfast that attaches to the substrate, a stem-like or trunk-like stipe, and large, flattened, leaf-like blades called fronds. Because kelps require constant water motion to provide nutrients, they are located in relatively high-energy settings. Kelp forests support a diverse animal community of fish, invertebrates, and marine mammals as well as important algal communities (NOAA 2010d).

The Giant Kelp Marine Forests of South East Australia ecological community, consisting mostly of giant kelp (*Macrocystis pyrifera*) plants, is listed as endangered under the EPBC Act and may occur within the Environmental Monitoring ZPI. The Giant Kelp Marine Forests are found predominately in temperate south eastern waters. The largest extent of the ecological community is found in Tasmanian coastal water, but some patches may also be found in Victoria.

Intertidal, emergent and sub tidal aquatic vegetation occurs at Mallacoota and Mallacoota Inlet, Tamboon Inlet, Cann River Estuary (continuously open), Sydenham Inlet, Snowy River Estuary, Yeerung River Estuary (intermittently open), Lake Tyers estuary (intermittently open), Inside Lakes Entrance - Gippsland Lakes Ramsar Site and Corner Inlet Ramsar Site.

3.4.4.3 Sheltered Intertidal Flats and Bare Sediment

Sheltered intertidal flats are composed primarily of mud with minor amounts of sand and shell. They are usually present in calm-water habitats, sheltered from major wave activity, and frequently backed by marshes. The sediments are very soft and cannot support even light foot traffic in many areas. There can be large concentrations of bivalves, worms, and other invertebrates in the sediments. They are heavily used by birds for feeding (NOAA 2010d).

Sheltered intertidal flats occur at Nooramunga and Corner Inlet Marine and Coastal Parks. Bare sediment occurs at Mallacoota Inlet, Wingan Inlet, Sydenham Inlet - Bemm River and Mud Lake.

3.4.4.4 Marshes

Salt marshes can be found behind Mallacoota Entrance to Lake Barracouta, Wingan Inlet, inside Cann River Estuary, Tamboon Inlet, Sydenham Inlet (Bemm River Estuary and Mud Lake), Dock Inlet, inside Snowy River Estuary, Lake Tyers Estuary, and inside Lakes Entrance - Gippsland Lakes Ramsar Site.

Intertidal wetlands contain emergent, herbaceous vegetation, including both tidal and muted tidal marshes. Depending on location and inter-annual variations in rainfall and runoff, associated vegetation may include species tolerant or adapted to salt, brackish, or even tidal freshwater conditions. The marsh width may vary from a narrow fringe to extensive areas. Sediments are composed of organic muds except where sand is abundant on the margins of exposed areas. Exposed areas are located along bays with wide fetches and along heavily trafficked waterways. Sheltered areas are not exposed to significant wave or boat wake activity. Abundant resident flora and fauna with numerous species and high use by birds, fish, and shellfish (NOAA, 2010d).

3.4.4.5 Mangroves

Along the Gippsland coast, mangroves can be found in Corner Inlet and Nooramunga Marine and Coastal Park and more recently have also been found in Cunningham Arm at Lakes Entrance.

The roots and trunks are intertidal, with only the lowest leaves inundated by high tide. The width of the forest can range from one tree, to many kilometres. The substrate can be sand, mud, leaf litter, or peat, often as a veneer over bedrock. They are highly productive, serve as nursery habitat, and support a great diversity and abundance of animal and plant species (NOAA, 2010d).

3.4.4.6 Sandy Beaches and Dunes

Sandy beaches and dunes form a distinctive group of marine habitats with their own biological communities. These beaches are flat to moderately sloping and relatively hard-packed. They can be important areas for nesting by birds. This environment occurs along the coastline of Victoria and NSW.

The Littoral Rainforest and Coastal Vine Thickets of Eastern Australia ecological community is listed as critically endangered under the EPBC Act and occurs along the Gippsland coastline (DoEE, 2017t). The ecological community provides habitat for over 70 threatened plants and animals and provides a buffer to coastal erosion and wind damage (DoEE, 2017t). The ecological community occurs close to the coast from northern Queensland to eastern Victoria and on offshore islands. It occurs on a range of landforms including dunes and flats, headlands and sea-cliffs.

3.4.4.7 Cliffs/Exposed Rocky Headlands

The intertidal zone is steep (>30° slope) and narrow with very little width.

Sediment accumulations are uncommon because waves remove debris that has slumped from the eroding cliffs. There is strong vertical zonation of intertidal biological communities. Species density and diversity vary greatly, but barnacles, snails, mussels, polychaetes, and macroalgae can be abundant (NOAA, 2010).

This environment occurs behind Betka Beach and Secret Beach through to Little Rame Head, Sandpatch Point, Wingan Point, The Skerries, Rame Head, Petrel Point, Point Hicks, Clinton Rocks, Tamboon Inlet, Pearl Point, Cape Conran (Needle Rocks, Irvine Rocks, Quincy Rocks Salmon Rocks), and at Ricardo Point.

3.4.5 Subtidal marine habitats

The subtidal marine habitats that occur within the operating area, Operational ZPI and Environmental Monitoring ZPI include:

- Water Column (Open Water)
- Soft sediment
- Subtidal reef.

3.4.5.1 Water Column

The water column is occupied by planktonic (drifting) and pelagic (actively swimming) species.

Plankton species, including both phytoplankton and zooplankton, are a key component in oceanic food chains. Phytoplankton are photosynthetic organisms that spend either part or all of their lifecycle drifting with the ocean currents. Phytoplankton biomass ranges from about 0.1 to 1.6 mg/L across Bass Strait from shallow to deeper waters and about 0.5 mg/L at the operational area (Gibbs *et al*. 1991). Phytoplankton biomass rapidly drops off with water depth, to about 0.1 μg/L below 100m, due to diminishing light penetration.

Zooplankton is comprised of small protozoa, crustaceans (such as krill) and the eggs and larvae from larger animals. Zooplankton biomass is higher in shallow waters of Bass Strait (16.1 mg/m^3 dry weight off Mallacoota and 15.5 mg/m^3 off Seaspray), dropping to between 1.2 – -2.1 mg/m^3 further offshore (integrated over the top 50 m of the water column) (Gibbs *et al.* 1991). As with phytoplankton, zooplankton biomass appears to be higher in the shallow waters of the shelf. Copepods were the dominant species present (Watson & Chaloupka 1982).

Significant pelagic species such as marine mammals, marine reptiles and fish are considered in Section 3.6.4, Section 3.6.2 and Section 3.6.1 respectively.

3.4.5.2 Soft Sediment

Soft sediment habitat is the dominant habitat within the operational area and Operational ZPI. The benthic fauna present on the soft sediment can be broadly divided into two groupings:

- The epibenthos which includes sessile species such as sponges and bryozoans, hydroids, ascidians, poriferans and mobile fauna including hermit crabs, sea stars and octopus
- The infauna which includes a diverse range of species such as amphipods, shrimps, bivalves, tubeworms, small crustaceans, nematodes, nemerteans, seapens, polychaetes and molluscs (Parry *et al*. 1990).

The subtidal sand community along Ninety Mile Beach has been found to be the most species-rich of its type in the world. A survey of a section of Ninety Mile Beach found approximately 800 marine invertebrate species per 10 m^2, compared to 300 to 400 per 10 m^2 in comparable habitats (Coleman *et al*. 1997). This high species richness was a major factor in the creation of a Marine National Park on the Ninety Mile Beach (ParksVic 2006). The subtidal sand invertebrate fauna are dominated by small animals, mostly crustaceans, molluscs, echinoderms and polychaetes (Plummer *et al*. 2003, Bax and Williams 2001).

Parry *et al*. (1990) found high diversity and patchiness of benthos sampled off Lakes Entrance, where a total of 353 species of infauna was recorded. Crustaceans (53%), polychaetes (32%) and molluscs (9%) dominated sample results. A significant site for the listed opistobranch mollusc (seaslug) *Platydoris galbana* is located off Delray Beach, 2 km south-west of Golden Beach on the shoreline (O'Hara & Barmby, 2000). An ROV seabed survey was conducted following drilling at the Snapper operational area in 2009 (Coffey 2010) and a seabed monitoring program conducted near West Tuna in 1999 (URS 2000) confirmed that polychaetes and crustaceans were the most abundant infaunal taxa present in the seabed sediments.

The introduced New Zealand screw shell (*Maoricolpus roseus*) is present in eastern Bass Strait and is known to form extensive and dense beds on the sandy seafloor spreading to the 80 metres (m) isobath off eastern Victoria and NSW (Patil *et al*. 2004).

3.4.5.3 Subtidal Reefs

This habitat occurs either as extensions of intertidal rocky shores or as isolated offshore reefs.

Subtidal rocky reefs are scattered throughout Environmental Monitoring ZPI waters from the low-water mark to a depth of 100 m. The rocky reefs of southern Australia support a highly endemic marine flora and fauna. Over 1,400 species of algae have been recorded from southern Australia, with 70% endemic to the area (ParksVic 2017m). The shallow reefs (0 to 20 m) are dominated by kelps or other brown seaweeds. Bubble kelp (*Phyllospora* sp.) and leather kelp (*Ecklonia* sp.) combine to cover many of the exposed reefs. *Sargassum* spp. and *Cystophora* spp. are dominant in more sheltered areas.

This habitat consists of sub tidal substrates composed of rock, boulders, or cobbles, though there can be patches of sand veneer covering a hard bottom. There may be rich, diverse communities of attached and associated algae and animals; often there is little open space. Some of these habitats form a relief (reef or bank) several metres high that attracts a diversity of fish (NOAA 2010d).

Subtidal rocky reefs located along the Gippsland shore include; Bastion Point, Quarry Beach, Little Rame Head, Long Reef, Wingan Point, The Skerries, Rame Head, Petrel Point, Thurra River, Point Hicks Marine National Park, Pearl Point, Yeerung River Estuary (Intermittently open), Cape Conran (East Cape, Cowrie Bay, Flat Rocks), Beware Reef, Point Ricardo and Ricardo Beach.

Isolated offshore reefs are also likely to be present within the operational area and Operational ZPI.

3.5 Commercial Fishing

Commercial fishing in south-eastern Australia includes inshore coastal waters, mainly state administered fisheries, and areas along the continental slope, mainly Commonwealth fisheries. The majority of the commercial fishing (volume basis) occurs in Commonwealth waters along the continental shelf and the upper continental slope (see Figure 3-7).

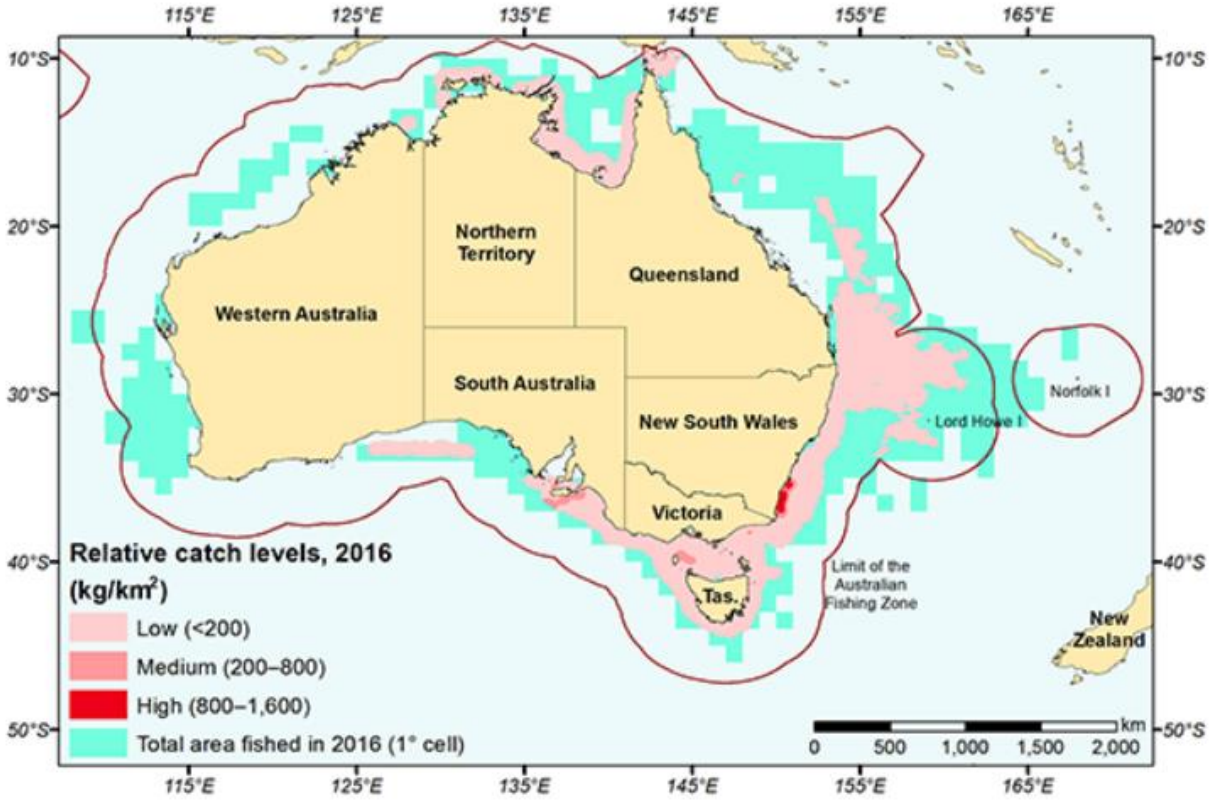


Figure 3-7 Relative catch levels of Commonwealth-managed fisheries, 2016 (ABARES 2017)

The main commercial Commonwealth fisheries within the Operational ZPI are the Southern and Eastern Scalefish and Shark Fishery (SESSF) which includes ((AFMA, 2014a, 2016, ABARES, 2016a, 2017) :

- Commonwealth Trawl Sector (CTS); and
- Gillnet, Hook and Trap Sectors (GHTS)

Of these, Danish seiners and otter-board trawlers of the Commonwealth Trawl Sector are most likely to be encountered either in the operational area or within the Operational ZPI. Fishing intensity for the Commonwealth Trawl Sector is shown in Figure 3-8.

Other Commonwealth fisheries potentially operational within the Operational ZPI include the Small Pelagic Fishery, Southern Jig Squid Fishery, Eastern Skipjack Tuna Fishery and the Eastern Tuna and Billfish Fishery.

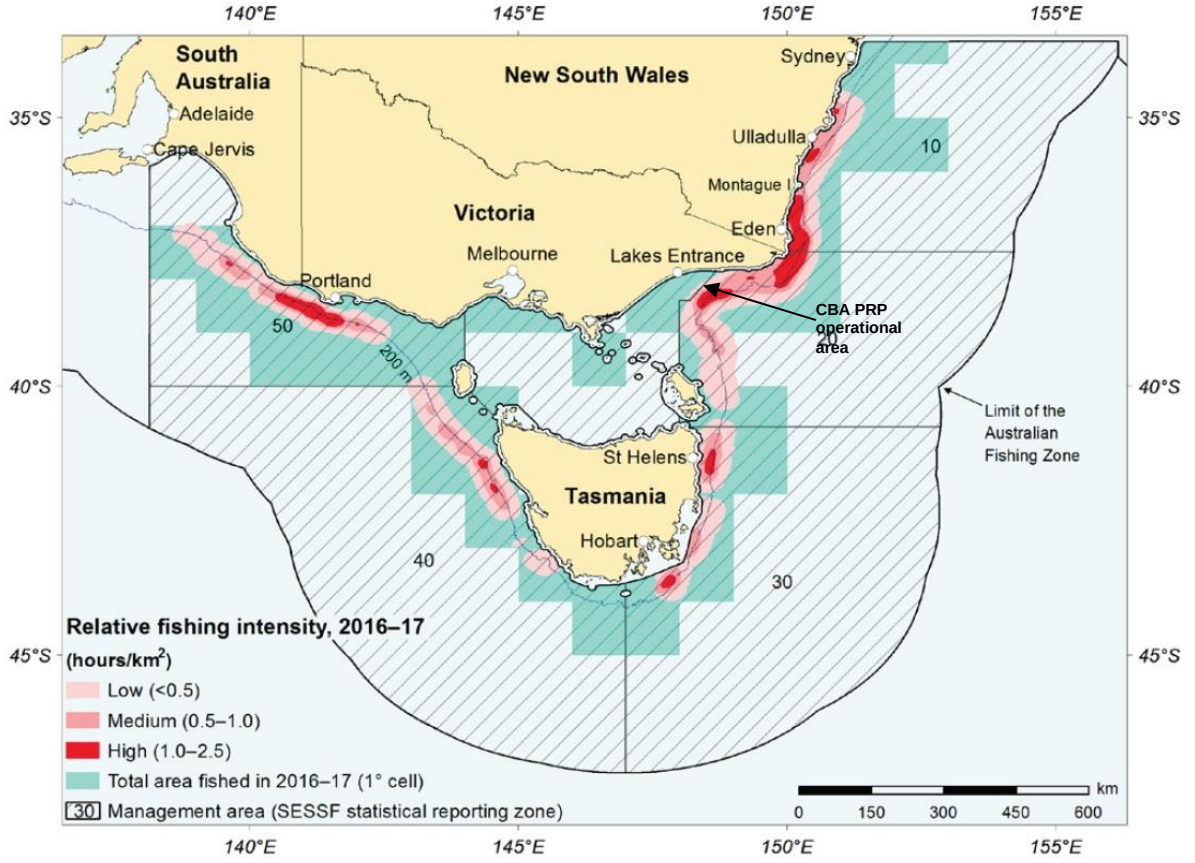


Figure 3-8 **Relative fishing intensity in the Commonwealth Trawl Sector, 2016–17 fishing season (ABARES 2017)**

3.5.1 Fishing activity around Gippsland Basin

A review of fishing activity for 2010-16 within a one degree grid square (3,600 NM^2, or about 12,360 km^2), based on data provided by AFMA (2017d), confirms that of the three main fisheries in this area, Danish seine fishing made up the largest component (around 53%), followed by otter board trawling (43%) and gillnet fishing (4%).

Danish seine fisheries between 2010 and 2016 (average of 754 tonne per annum) largely yielded Flathead (89%), while gillnet fisheries (average of 55 tonne/annum) mainly yielded Gummy shark (72%) and other shark species (25%).

Otter trawling within the Commonwealth Trawl Sector between 2010 and 16 (average of 609 tonne/annum), yielded a range of fish species, dominated by Flathead (33%), Pink ling (12%), Blue grenadier (9%) and Silver warehou (7%). An average of 0.9 tonne/annum of Orange roughy was landed in this area between 2010 and 2016, decreasing from 1.4 tonne in 2010 to 0.4 tonne in 2016.

In 2010, hook fishing made up around 5% of total catch in this area (85 tonne), landing mainly Pink ling (63%), followed by Reef ocean perch, and Ribaldo (9% each), Blue eyed trevally and Gummy shark (6% each) and Hapuku (3%). Less than 5 boats were hook-fishing in this area between 2011 and 2016, so that no detailed data were released.

Scallop fisheries within this area yielded around 34 tonne in 2012, with no data available for other years due to low fishing intensity (less than 5 boats). Although the Small Pelagic Fishery, Eastern Skipjack Fishery, as well as Southern Bluefin, Eastern Tuna and Billfish Fishery are operational in this area, none of these took place between 2010 and 2016.

Southern Squid Jig fisheries yielded about 79 tonne in 2012, with no fishing activity in 2010, 2011, 2014 and 2015, and less than 5 squid boats operating in this area in 2016.

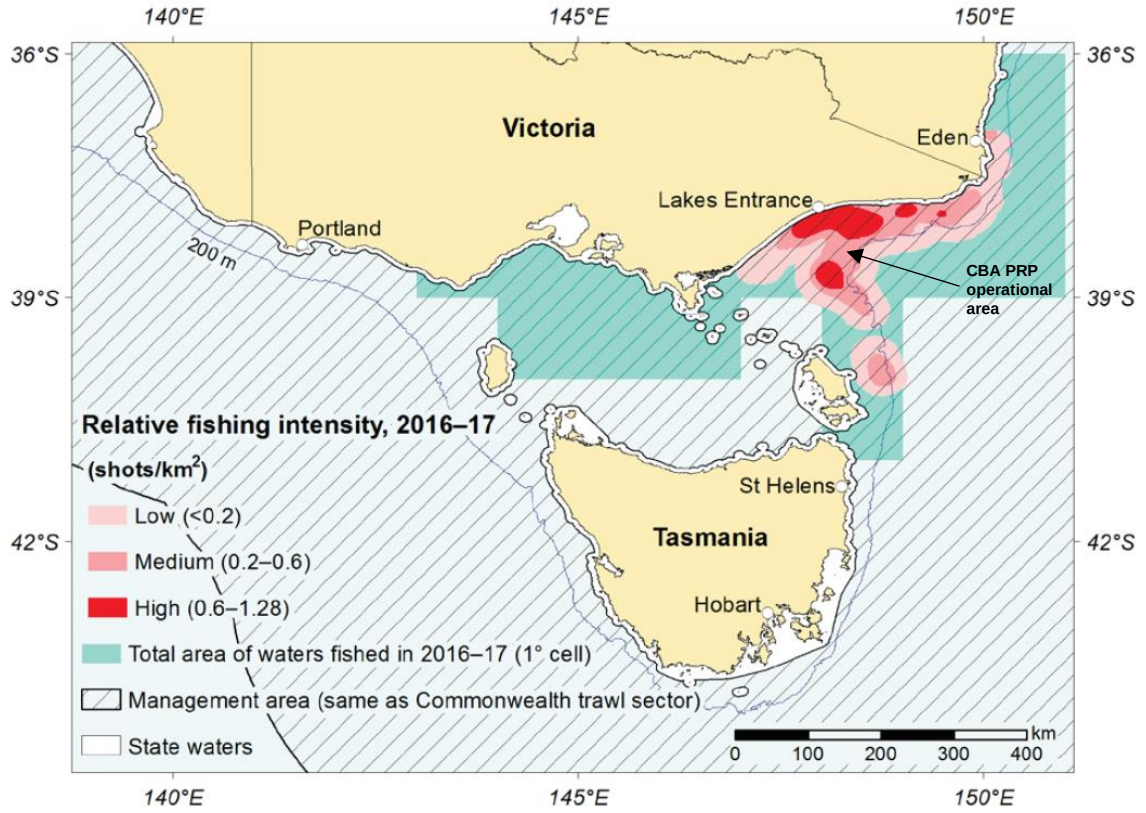


Figure 3-9 Relative fishing intensity by Danish-seine operations, 2016–17 (ABARES 2017)

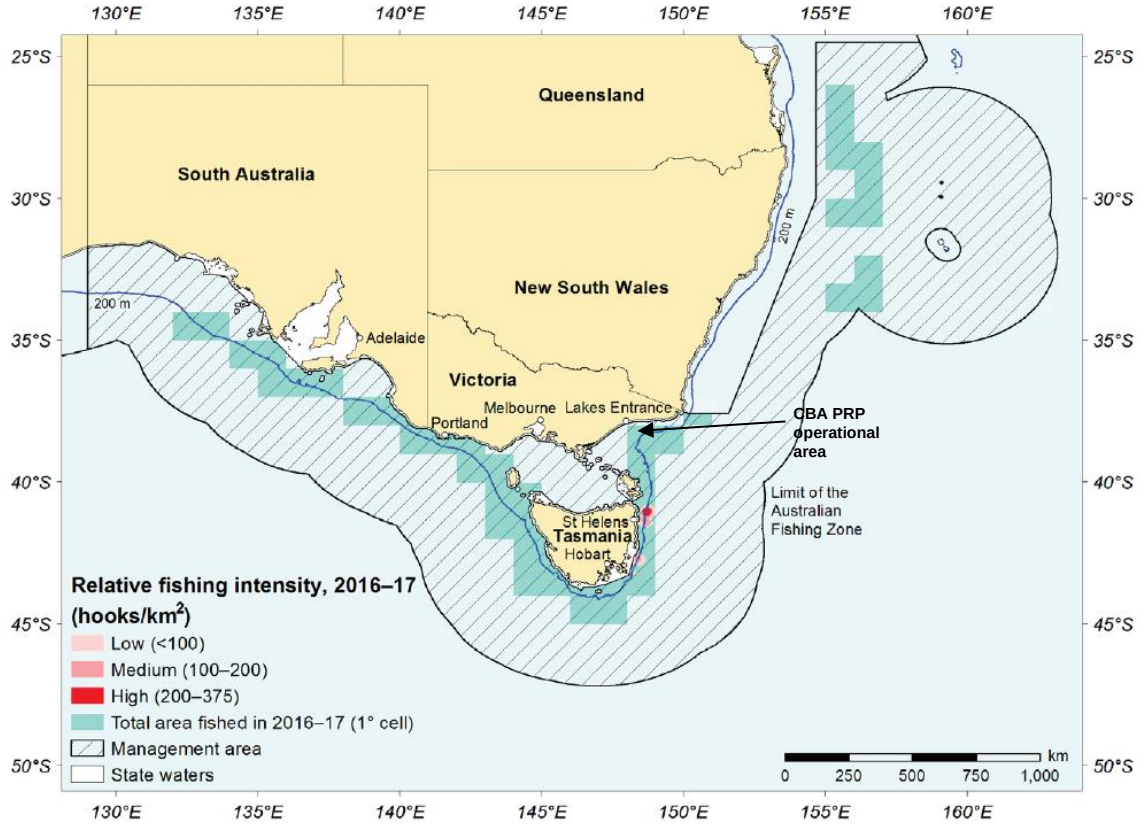


Figure 3-10 Relative fishing intensity in the Scalefish Hook Sector (SHS), 2016–17 (ABARES 2017)

3.5.1.1 Southern and Eastern Scalefish and Shark Fishery (SESSF)

The SESSF incorporates the Commonwealth Trawl Sector (formerly the Southeast Trawl Sector), the Great Australian Bight Trawl Sector (GABTS), East Coast Deepwater Trawl Sector (ECDTS) and Gillnet, Hook and Trap Sector (GHTS; formerly the Southern Shark and Southeast Non-trawl Sectors) under a common set of management objectives (Figure 3-9). The SESSF extends from waters off southern Queensland, south around Tasmania and then west to Cape Leeuwin in Western Australia.

Sharks are fished using predominantly demersal gillnets (Walker *et. al.* 2001), with a small percentage caught by demersal longlines. The deepwater demersal sharks occur between 50 and 1,800m depth offshore and live up to 50 years, maturing between 25 and 30 years (ABARES, 2016c).

The trawl and scalefish-hook sectors of the fishery include over 100 species that are captured, but 16 species provide the bulk of trawl landings and are subject to quota management. Fishing is year round, varying according to availability, market price and progress with quotas (Figure 3-10).

The trawl sector includes otter trawl and Danish seine methods. Otter trawlers use larger boats, generally greater than 20 m long, while Danish seiners use smaller boats and operate in nearshore shelf areas often in more restricted areas unavailable to otter trawlers (Larcombe & Begg 2008). Board boats can stay out at sea for 5 -7 days, whilst Danish seiners usually fish for a maximum of three days. The range of Danish seiners, which target predominantly flathead, is limited to a 100 km radius from Lakes Entrance (Figure 3-10).

Otter board trawlers, operating out of Lakes Entrance, concentrate their fishing operations in deeper waters and consequently catch more morwong, ling, blue grenadier and other deep sea species. The net is towed by two wire ropes and fixed, between these ropes and the net, are paravanes (commonly known as boards or doors). Unlike the Danish seine net which closes and stops fishing after about two minutes of towing, the board trawl net remains open and may be towed for any length of time, although it is rare for tows to exceed four hours (Leftrade 2013). Distribution of the fishing effort shows a predominance of effort concentrated along the 100-250 m contour (Figure 3-11; ABARES 2017).

The SESSF includes several stocks that are classified as overfished. These overfished stocks are blue warehou (*Seriolella brama*), eastern gemfish (*Rexea solandri*), gulper sharks (*Centrophorus harrissoni*, *C. moluccensis*, *C. zeehaani*), school shark (*Galeorhinus galeus*), redfish (*Centroberyx affinis*) and orange roughy (*Hoplostethus atlanticus*) in two zones (southern and western) (ABARES, 2017).

3.5.1.2 Small Pelagic Fishery

The Small Pelagic Fishery (SPF) targets Australian sardines (*Sardinops sagax*), jack mackerel (*Trachurus declivis*), blue mackerel (*Scomber australasicus*) and redbait (*Emmelichthys nitidus*). The fishery extends from the Queensland/New South Wales border, typically outside 3 NM, to southern Western Australia (Figure 3-11). The fishery includes purse-seine and midwater trawl fishing vessels.

The key target species for the purse-seine vessels are Australian sardine (*Sardinops sagax*), blue mackerel (*Scomber australasicus*) and jack mackerel (*Trachurus declivis*). The key target species for the midwater trawl fishery are blue mackerel, jack mackerel and redbait (*Emmelichthys nitidus*) (ABARES 2017).

Small pelagic fish are generally caught during targeted fishing for a single species. They are also caught in small quantities in other Commonwealth- and state-managed fisheries, including the Southern and Eastern Scalefish and Shark Fishery, the Eastern Tuna and Billfish Fishery, the Western Tuna and Billfish Fishery, and the New South Wales Ocean Hauling Fishery. There is no active SPF fisheries near the CBA PRP operational area.

Jack mackerel are found in continental shelf waters between 27 to 460 m, although generally in waters less than 300m deep. They live for 16 years, maturing at 3 to 4 years. Spawning occurs between December and March (ABARES, 2018).

Blue mackerel are found in continental shelf waters between 87 to 265 m. They live for about 7 years, maturing at 2 years. Spawning occurs between September and May (ABARES, 2018).

Redbait are found in continental shelf waters between 86 to 500 m. They live for about 21 years, maturing at 2 to 4 years. Spawning occurs between September and November (ABARES 2018).

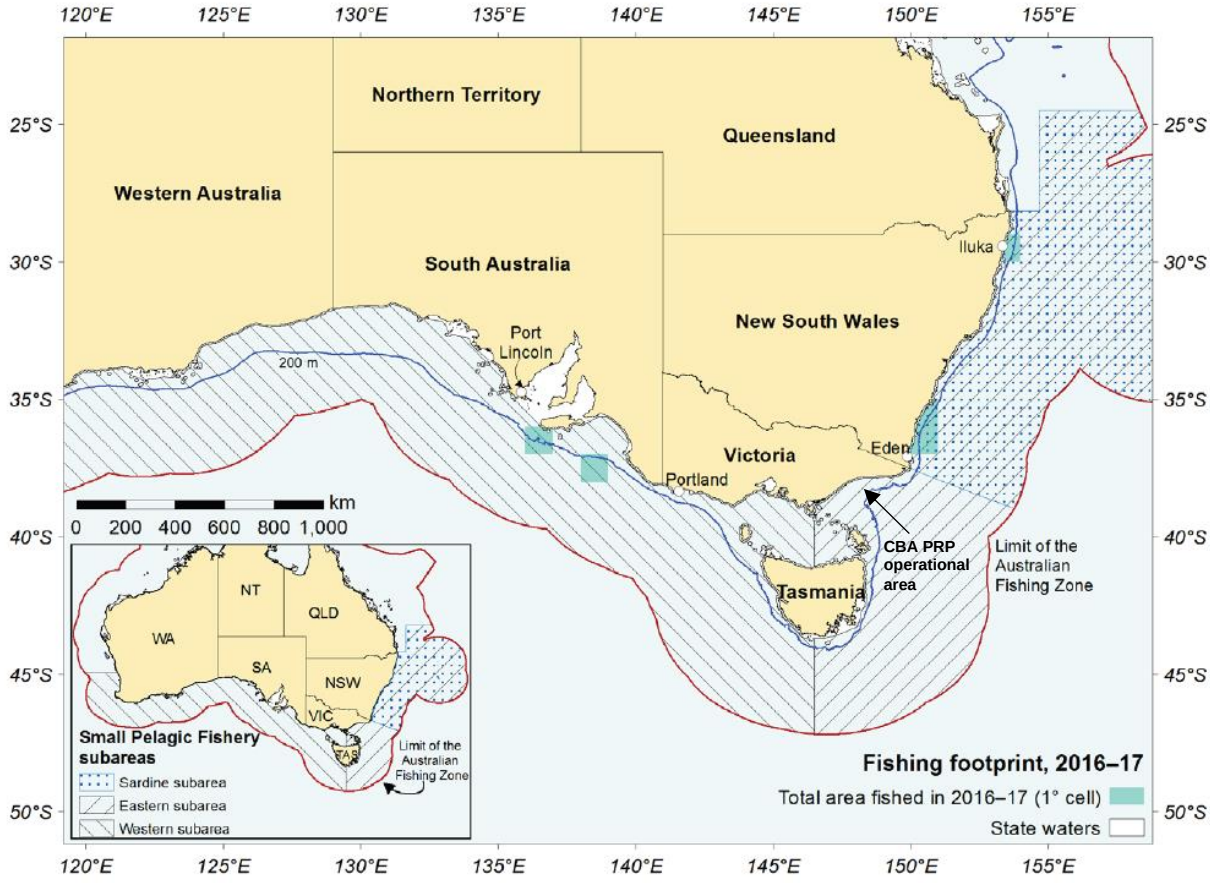


Figure 3-11 Area fished in the Small Pelagic Fishery, 2016–17 (ABARES 2017)

3.5.1.3 Scallop Fisheries (BSCZSF, Victorian and Tasmanian)

The Bass Strait scallop fisheries are predominantly single-species fisheries targeting aggregations ('beds') of the commercial scallop (*Pecten fumatus*) using scallop dredges, which are towed along the bottom of the sea in much the same way as trawl equipment (ABARES 2016b). The management of scallops in Bass Strait is divided into three zones, of which the Commonwealth manages the Central Zone (the Bass Strait Central Zone Scallop Fishery; BSCZSF). The remaining zones, which extend up to 20 nautical miles off the coasts of Victoria (Victorian Scallop Fishery) and Tasmania (Tasmanian Scallop Fishery), are managed by those states respectively (AFMA, 2017c).

The areas open to fishing vary from year to year depending on the location of commercially viable scallop beds. In 2015 fishing was concentrated on beds east of King Island (well outside the operational area) (ABARES 2016b). The season typically extends from May to December but the fishery is not opened unless the abundance of scallops in specific locations meets regulatory criteria.

The commercial scallop usually matures at about 12 to 18 months of age. Once maturity has been reached (fecundity increases with age), spawning occurs from winter to spring (June to November) although there are periods when spawning may be at a peak. The timing of these peaks may vary according to location and also according to environmental conditions, but appears to be in spring in Victoria (Sause *et al*. 1987). There is also some very limited evidence for a smaller, autumn peak in spawning for scallop populations in Bass Strait (Coleman 1988).

Scallop populations throughout the world fluctuate quite dramatically in response to variable environmental conditions. Relatively high populations occur in some years. These can be followed by relative scarcity, but populations can quickly rebound to large numbers provided enough adults remain for successful breeding and recruitment (VFA 2017b). Scallops are seldom found in commercial quantities in depths greater than 60-70 m.

3.5.1.4 Abalone Fisheries

The blacklip abalone (*Haliotis rubra*) forms the basis of the abalone fisheries in NSW, Victoria and Tasmania, however greenlip abalone (*Haliotis laevegata*) are also targeted. Blacklip abalone are commonly found, mainly on rocky substrates, from 0 m to 40 m depth range and are widely distributed along the southern half of Australia as far as Rottnest Island in the West to Coffs Harbour in the East, but are not present in the vicinity of the CBA PRP operational area.

Abalone are sourced from the wild and from coastal farms. There are about 40 reefs from Iron Prince to Marlo Reef in Victoria. In NSW, most commercial abalone fishing takes place on the south coast, primarily from Jervis Bay to the Victorian border (DPI 2014). The Tasmanian abalone fishery is the largest wild abalone fishery in the world and the fishery area surrounds the entire island extending northwards into Bass Strait to include Bass Strait islands such as the Furneaux Group.

Victoria's abalone farms are situated primarily in Port Phillip Bay and southwest Victoria, however farms are also located off Tullaberga Island and Gabo Island.

Abalone are hand harvested by divers, who typically operate from small, trailable or tender vessels using low-pressure surface–air supply equipment (hookah). Abalone are removed from the reef using a tool known as an abalone iron. Fishing is open all year round (VFA 2017b).

Abalone grow to at least 21 cm in length and growth rates vary with location and time of year. Abalone mature at 6 to 10 years of age in Tasmania and spawning occurs from October through to March.

3.5.1.5 Rock Lobster Fisheries

The Victorian and Tasmanian Rock Lobster Fisheries are based primarily on one species, the southern rock lobster (*Jasus edwardsii*). Rock lobster is Victoria's second most profitable fishery after abalone. Eastern rock lobster (*Jasus verreauxi*) is the main species harvested by the NSW Lobster Fishery, but occasionally southern rock lobster, and tropical rock lobster are also caught.

Rock lobster fishing grounds exist around Ulladulla and Bateman's Bay, the southern tip of Wilsons Promontory and around Bass Strait islands, such as the Hogan Group, Curtis Group, Kent Group islands and Flinders Island. Most fishing occurs between mid-November and March, outside the June to mid-November spawning season. Fishers use baited rock lobster pots which are lowered to the bottom in rocky areas. The lobsters crawl down the funnel in the top of the pots and are unable to escape.

Holders of Rock lobster access licences are also eligible for permits for the Victorian Giant Crab fishery which extends from Apollo Bay to the boundary of NSW and Victoria, however only a few have been issued. Giant crabs can only be taken by hand or with recreational hoop nets (VFA 2017b).

3.5.1.6 Victorian Wrasse Fishery

The commercial fishery extends along the entire length of the Victorian coastline and out to 20 nautical miles offshore, except for marine reserves. Bluethroat wrasse (*Notolabrus tetricus*) and Purple wrasse (also called Saddled wrasse; *N. fucicola*), comprise approximately 90 per cent of the commercial Victorian wrasse harvest. Small catches of Rosy wrasse (*Pseudolabrus psittaculus*), Senator wrasse (*Pictilabrus laticlavius*) and Southern Maori wrasse (*Ophthalmolepis lineolatus*) are also caught.

Most wrasse is harvested by hook and line although commercial rock lobster fishers who also hold a commercial wrasse licence can keep those fish that they catch in their rock lobster pots (VFA 2017b)

3.5.1.7 Victorian Commercial Bay and Inlet Fisheries

The commercial bay and inlet fisheries of Victoria are a collection of complex multi-species, multi-gear fisheries which operate in environments that are ecologically distinct to those existing in waters of both their catchment tributaries and the nearby ocean. Although between 60 to 80 fish species have been recorded from commercial bay and inlet catches, only about a dozen or so key species, including King George whiting, black bream, snapper, flathead, mullet, garfish, flounder, anchovies and pilchards, are usually targeted by commercial fishers.

Commercial fishing for fin fish occurs in Port Phillip Bay, Corner Inlet/Nooramunga and the Gippsland Lakes. All other Victorian bays, inlets and estuaries are closed to commercial fishing (other than for eels and bait). The main bay and inlet commercial fishing methods are seine nets and gillnets.

3.5.1.8 Victorian Sea urchin Fishery

The sea urchin fishery comprises four individual management zones. The central and eastern zones intersect the Environmental Monitoring ZPI. The central zone covers Victorian waters from Hopkins River to Lakes Entrance. The eastern zone extends from Lakes Entrance to the NSW border. The target species are the White sea urchin (*Heliocidaris erythrogramma*) and the Black, long-spined sea urchin (*Centrostephanus rodgersii*).

The sea urchin is usually collected by hand by divers. Currently, sea urchin will only be harvested in eastern Victoria, primarily out of Mallacoota, and in Port Phillip Bay (VFA 2017b).

3.5.1.9 Tasmanian Shellfish Fishery

The commercial shellfish fishery includes clams (*Veneruptis largillierti*) for which there are three licences restricted to Georges Bay, native oyster (*Ostrea angasi*) for which there are two licences restricted to Georges Bay and cockles (*Katelysia scalarina*) for which there are four licences restricted to Ansons Bay and wild Pacific oyster (*Crassostrea gigas*) (DPIPWE 2017).

Temperate climate bivalves generally have two spawning periods within a year following spring and autumnal peaks in phytoplankton production.

3.5.1.10 NSW Ocean Trawl Fishery

There are two sectors to the NSW Ocean Trawl Fishery: The prawn trawl sector (within 1.5 nm of the coastline) and the fish trawl sector (west of the 90 m depth contour). Both sectors use the otter trawl net (see Section 6.9.1). The major species taken in this fishery include school whiting (comprising of stout whiting and red spot whiting), eastern king, school and royal red prawns, tiger flathead, silver trevally, various species of sharks and rays, squid, octopus and bugs (DPI 2014).

3.5.1.11 NSW Ocean Trap and Line Fishery

The Ocean Trap and Line fishery is a multi-method, multi species fishery targeting demersal and pelagic fish along the entire NSW coast, in continental shelf and slope waters. The fishery uses a variety of methods, most commonly involving traps or lines with hooks. Snapper, yellowtail kingfish, leatherjackets, bonito and silver trevally form the bulk of the commercial catch. Other key species include rubberlip (grey) morwong, blue-eye trevalla, sharks, bar cod and yellowfin bream (DPI 2014).

3.5.1.12 NSW Estuary General Fishery

The Estuary General Fishery is a diverse, multi-species, multi-method fishery that operates in many of the State's estuarine systems. The fishery includes all forms of commercial estuarine fishing (other than estuary prawn trawling) in addition to the gathering of pipis and beachworms from ocean beaches. The most frequently used fishing methods are mesh and haul netting. Other methods used include trapping, hand-lining and hand-gathering. Sea mullet, luderick, yellowfin bream, school prawn, blue swimmer crab, dusky flathead, sand whiting, pipi, mud crab and silver biddy make up over 80% of the catch (DPI 2014).

3.5.1.13 NSW Ocean Hauling Fishery

The Ocean Hauling Fishery targets approximately 20 finfish species using commercial hauling and purse seine nets from sea beaches and in ocean waters within 3 NM of the NSW coast. The catch is mainly made up of pilchards, sea mullet, Australian salmon, blue mackerel, yellowtail scad and yellowfin bream (DPI 2014).

3.5.1.14 NSW Oyster Aquaculture

The Sydney rock oyster (*Saccostrea glomerata*) is the main species grown in NSW. Commercial production in the State occurs in 41 estuaries between Eden in the south to the Tweed River in the north. Wallis Lake and the Hawkesbury River are the main producing areas.

The Sydney rock oyster industry in NSW is largely dependent on natural spatfall. The first spawning of a Sydney rock oyster is usually as a male and subsequent spawnings as a female. During spawning, adult females disperse up to 20 million eggs and males hundreds of millions of sperms into the water when the tide and current are optimal for the widest distribution. Fertilisation takes place in the water column and development continues for up to 3 to 4 weeks as the larval stages of the oyster grow, with the 'spat' ultimately being caught on 'sticks'. Oysters are knocked off these sticks at 0.5 to 3 years of age for growing intertidally on trays until maturity in 3 to 4 years. Alternative growing systems such as

baskets and tumblers are also being used, and some oysters are grown subtidally on rafts or on floating culture.

3.6 Recreational Fishing, Boating and Tourism

The Gippsland region is estimated to attract more than 7 million visitors annually. These visitors are estimated to spend an estimated $1 billion in the region per annum, with flow-on expenditure estimated at over $699 million per annum. There are more than 1,000 specialised tourism businesses in Gippsland and more than 12,000 people estimated to be employed as a direct result of tourism in Gippsland (Ainsaar *et al*. 2007).

Tourism and recreational activities offered by the coastal areas of central and eastern Gippsland include (Tourism Victoria, 2013):

- Recreational fishing amongst the Nooramunga islands, on the Gippsland Lakes, along Ninety Mile Beach, at Cape Conran Coastal Park and Croajingolong National Park and off the coast of Mallacoota, comprising both boat based fishing and beach based surf fishing. Boat based fishing includes charter operations and private craft launched from boat ramps in the region. Boatyards and slipways are located at Bullock Island (Lakes Entrance), Port Welshpool and Mallacoota.
- Swimming and surfing along the Gippsland coast. Surf Life Saving Clubs are located at Lakes Entrance, Seaspray and Woodside Beach on the Ninety Mile Beach and at Mallacoota. Popular locations with experienced surfers include along the coast of Wilson's Promontory National Park, Red Bluff at Lake Tyers Beach, Salmon Rocks at West Cape Beach in the Cape Conran Coastal Park and Bastion Point Beach in Mallacoota.
- Scuba diving and snorkelling in Gippsland's Marine and Coastal Parks, in particular Cape Conran Coastal Park around West Cape Beach and Salmon Rocks.
- Walking and hiking in Gippsland's National and Coastal Parks.

3.7 Commercial Shipping

Bass Strait is one of Australia's busiest shipping areas, with more than 3,000 vessels passing through Bass Strait each year. Bass Strait is a transit route for shipping traffic connecting the eastern and western ports of Australia (NOO 2002). A shipping exclusion area (Area to Be Avoided (ATBA) surrounds much of the Gippsland Basin operational area and commercial shipping is routed through the Traffic Separation Scheme (TSS) outside the ATBA. Shipping activity within the exclusion area is largely restricted to vessels servicing offshore facilities within the Gippsland Basin.

3.8 Oil and Gas Industry

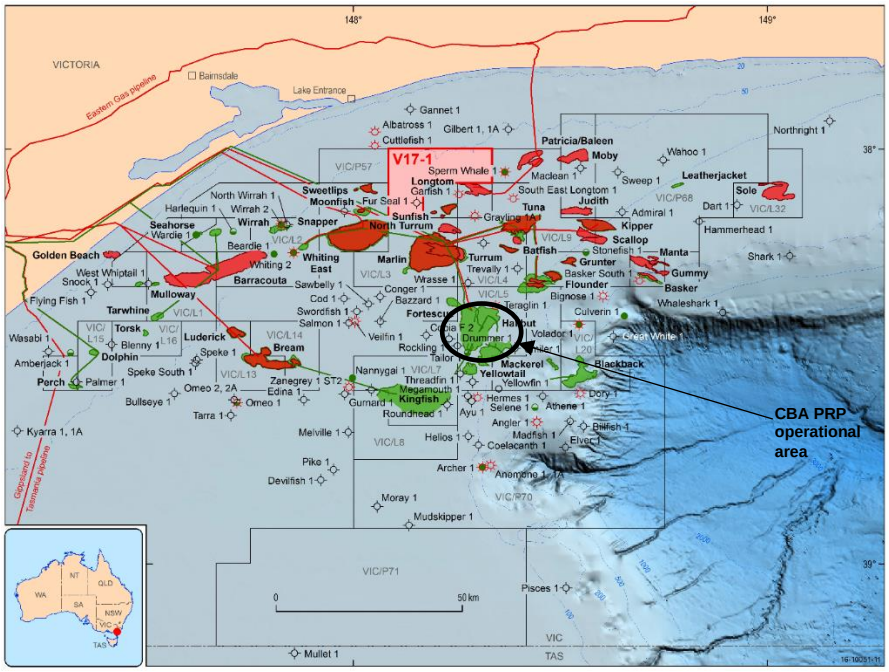
The Gippsland Basin has been producing hydrocarbons since 1969 (a total of 4 billion barrels of liquids and 7 tcf of gas to date). Although a mature basin by comparison with other Australian basins, by world standards it is relatively unexplored. The Gippsland Basin includes offshore production facilities (operational platforms, monotowers and subsea completions), a pipeline network of over 600 km; and various fields under exploration or development. Other titleholders of production licences in the Gippsland Basin are given in Table 3-11 and Figure 3-12.

Table 3-11 Production Licences, Exploration Permits and Retention Leases within Gippsland Basin

Title	Title Holder/s	Field
VIC/L1	EARPL, BHPB	Barracouta/Tarwhine/ Whiptail
VIC/L10	EARPL, BHPB	Snapper
VIC/L11	EARPL, BHPB	Flounder
VIC/L13-14	EARPL, BHPB	Bream
VIC/L15	EARPL, BHPB	Dolphin
VIC/L16	EARPL, BHPB	Torsk

VIC/L17	EARPL, BHPB	Perch
VIC/L18	EARPL, BHPB	Seahorse
VIC/L19	EARPL, BHPB	West Fortescue
VIC/L2	EARPL, BHPB	Barracouta/Whiting/Wirrah
VIC/L20	EARPL, BHPB	Blackback
VIC/L21	Cooper Energy	Patricia Baleen
VIC/L25	EARPL, BHPB, MEPAU	Kipper
VIC/L29	SGH Energy	Longtom
VIC/L3	EARPL, BHPB	Marlin/Turrum/North Turrum
VIC/L32	Cooper Energy	Sole
VIC/L4	EARPL, BHPB	Marlin/Turrum/Tuna/Baldfish/Flounder
VIC/L5	EARPL, BHPB	Halibut/Fortescue/Cobia/ Mackerel
VIC/L6	EARPL, BHPB	Mackerel/Flounder
VIC/L7-8	EARPL, BHPB	Kingfish
VIC/L9	EARPL, BHPB	Tuna
VIC/L31	Carnarvon Hibiscus	West Seahorse (see VIC/P57)
VIC/P47	Emperor Energy / Shelf Energy	Judith/Moby
VIC/P57	Carnarvon Hibiscus	West Seahorse/Sea Lion (See VIC/L31)
VIC/P68	Bass Oil	Leatherjacket
VIC/P70	Esso Deepwater	Dory/Baldfish
VIC/P71	Llanberis Energy	-
VIC/P72	Cooper Energy	-
VIC/RL1	EARPL, BHP (Pending Renewal)	Golden Beach
VIC/RL13, VIC/RL14, VIC/RL15	Cooper Energy	Basker, Manta, Gummy Field
VIC/RL4	EARPL, BHP (Pending Renewal)	Remora

From NOPTA 2018. Prefix: VIC/L: Production License; VIC/P: Exploration Permit; VIC/RL: Retention Lease



Gippsland Basin release area map 2017. http://www.petroleum-acreage.gov.au/

Figure 3-12 Offshore operations in Gippsland Basin

3.9 Cultural Heritage

There are no World Heritage properties or National Heritage places in the Operational ZPI or Environmental Monitoring ZPI. The Lord Howe Island Group, which is inscribed on both the World Heritage List and National Heritage List, is located approximately 1,500 km from the operational area and well outside the Environmental Monitoring ZPI.

The Gabo Island lighthouse, which is located on Gabo Island within the Environmental Monitoring ZPI, is a Commonwealth heritage place. The Commonwealth Heritage List is a list of natural, Indigenous and historic heritage places owned or controlled by the Australian Government. These include places connected to defence, communications, customs and other government activities that also reflect Australia's development as a nation. Built in 1863, the curved profile of this elegant red granite lighthouse makes it an outstanding example of stonemasonry. It was built from stone hewn from this isolated site. Its design was replicated at all subsequent lighthouses in Victoria (Heritage Council Victoria, 1999)

3.9.1 European and/or indigenous sites of significance

The Gunai-Kurnai people hold native title over much of Gippsland. The native title determination area (Tribunal file no. VCD2010/001) covers approximately 45,000 hectares and extends from west Gippsland near Warragul, east to the Snowy River, and north to the Great Dividing Range, (Figure 3-13). It also includes 200 metres of offshore sea territory between Lakes Entrance and Marlo, outside the Operational ZPI but within the Environmental Monitoring ZPI. The area includes 10 parks and reserves that are jointly managed by the Victorian government and the Gunai-Kurnai people (NNTT, 2010).

Non-exclusive native title rights and interests that exist over land and water in the determination area include:

- Rights of access.
- Rights to use and enjoy the land.
- Rights to take resources from the land for non-commercial purposes.
- Rights to protect and maintain sites of importance within the determination area.
- Rights to engage in certain activities on the land (including camping, cultural activities, rituals, ceremonies, meetings, gatherings, and teaching about the sites of significance within the determination area).

These rights do not confer exclusive rights of possession, use and enjoyment of the land or waters. Native title does not exist in minerals, petroleum or groundwater.

Aboriginal occupancy by the Gunai-Kurnai people pre-dates the time at which the sea reached its present level by many thousands of years; thus, many early hunting grounds are now under the sea. In the past, coastal wetlands were highly productive areas for hunter-gatherer people, having a variety of habitats and species, so the majority of archaeological sites in Victoria are found within 1 km of the coast (LCC 1993). Along the Gippsland coast, stone artefacts that have been found were mostly made from silcrete and quartz from the hinterland. Middens on offshore islands indicate that in the past, Aboriginal people from the area now known as Wilsons Promontory were likely to have visited (Jones & Allen 1979).

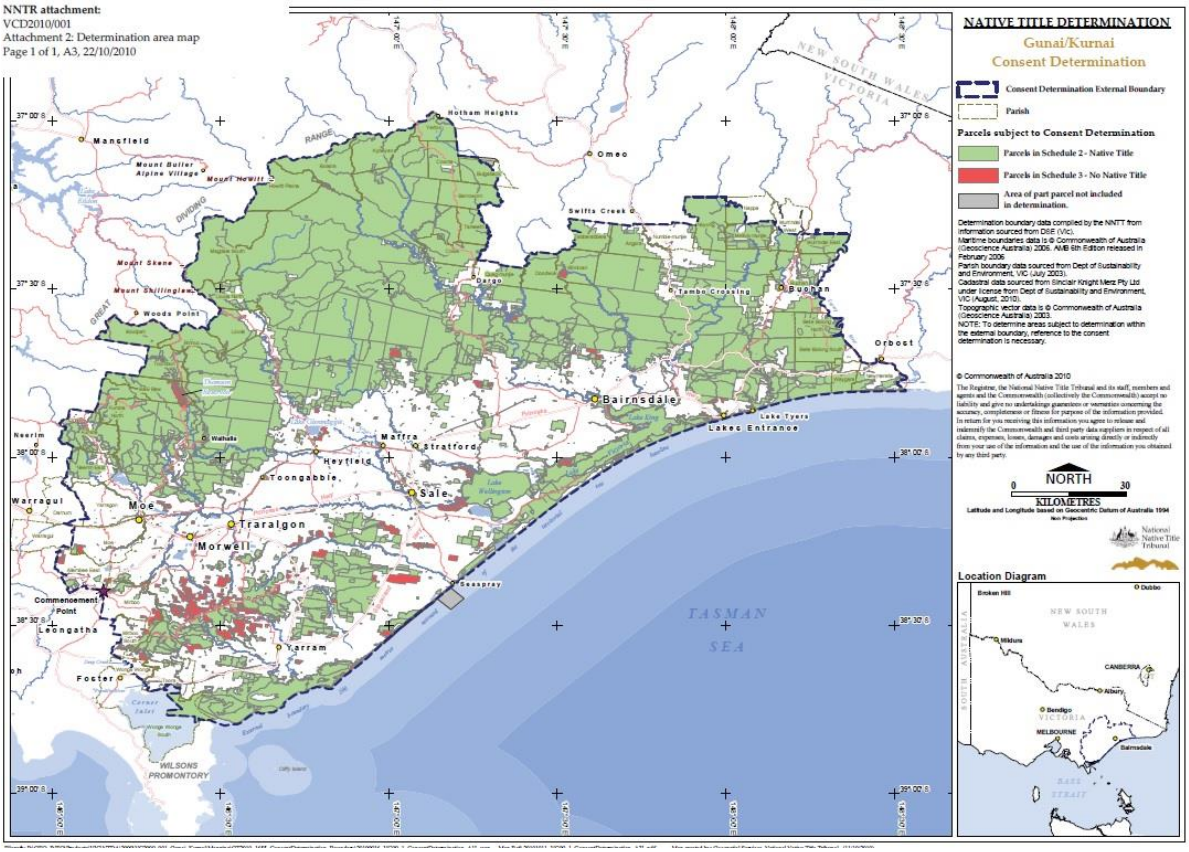
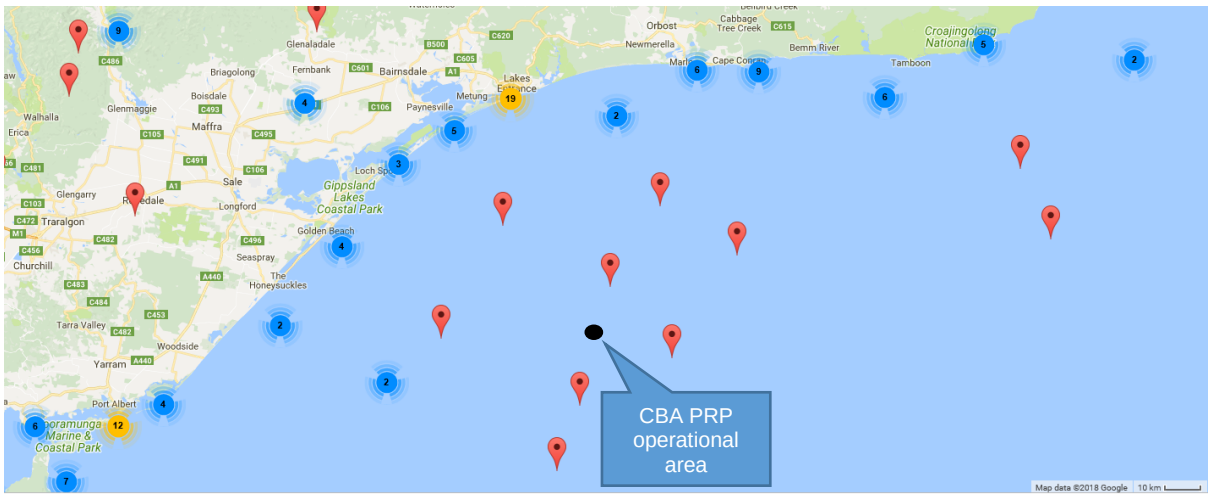


Figure 3-13 Gunai-Kurnai Native Title Determination Area (VCD2010/01)

3.9.1 Shipwrecks

A search of the National Shipwrecks Database identified 255 wrecks between Latitude 37° 00' to 40° 00', and Longitude 146° 00' to 150° 00', with none in the operational area see Figure 3-14. The Talark (Latitude 38.37°, Longitude 148.30°), lies about 5 km north of operational area, while the Rembrandt (wrecked in 1861; Latitude 38.67°, Longitude 148.20°) lies about 30 km to the south. The barque Rembrandt encountered a gale off the Ninety Mile Beach that carried away most of the sails and caused the vessel to leak badly. As the crew prepared to abandon ship, the vessel sank suddenly, taking ten of the crew and the one passenger. There were four survivors (DoEE, 2018i).



Markers indicate the number of shipwrecks in that location. Red markers indicate one shipwreck in that location (DoEE, 2018c)

Figure 3-14 Shipwreck sites around Gippsland Basin

4 Environmental Impact and Risk Assessment Methodology

The approach and methodology used within this Environment Plan are consistent with AS/NZS ISO 31000 Risk management – Principles and Guidelines and AS/NZS ISO14001 Environmental Management Systems – Requirements with Guidance for Use.

4.1 Risk Assessment Methodology

Environmental impacts and risks for planned activities that have the potential to impact the environment and for unplanned spill scenarios were evaluated first by determining the consequence severity, and estimating the probability or likelihood that the consequences could occur.

- Consequence severity: There are four consequence categories (I through IV, with I being the highest consequence level). The consequence categories consider environmental effects (in terms of duration, size/scale, and intensity) and sensitivity (in terms of irreplaceability, vulnerability and influence).
- Probability: There are five probability categories (A through E, with A being the most likely level). The probability categories consider the probability for each failure, event or condition necessary to produce the consequences, given the implementation of controls that prevent and mitigate the risk.

The combination of consequence severity and probability of occurrence determines the position on the ExxonMobil Risk Matrix. The ExxonMobil Risk Matrix is divided into four categories, with Category 1 being the highest risk category and Category 4, the lowest. A risk could have a low consequence severity and high probability of occurrence, and result in the same risk ranking as a risk with a high consequence severity and low probability of occurrence.

4.2 Demonstration of ALARP

As described above, the Risk Matrix is divided into four risk categories. The significance of each Risk Category is as follows:

Category 1: A higher risk where specific controls should be established in the short term and should, when possible, be reduced to a Category 2 risk or below. Continued operation requires annual review and approval by the Production Manager or equivalent.

Category 2: A medium risk that should be reduced unless it is not "reasonably practicable" to do so.

Category 3: A medium risk that should be reduced if "lower cost" options exist to do so.

Category 4: A lower risk that is expected to be effectively managed in base OIMS practices and therefore typically requires "No Further Action." Risk mitigation measures that are in place to manage the risk to Category 4 should be continued.

All environmental risks described in this Environment Plan have been assessed as Category 4.

Determining whether risks have been reduced to ALARP requires an understanding of the nature and cause of the risk to be avoided and the sacrifice (in terms of impact on personal safety and/or the environment, time, effort and cost) involved in avoiding that risk. Where the nature of a risk is well-understood, in the context of the receiving environment, and the activity is a well-established practice, the application of control measures specific to systems and specified in international standards or design codes may be sufficient and obvious to demonstrate that the risk is ALARP. For complex situations it may be difficult to reach a decision on the basis of ‘good practice’ or standards alone. Therefore for each risk, a discussion on ALARP demonstration has been provided which considers elimination of the activity, availability of practical alternatives where they exist, and the decision to rule out adoption of additional control measures (where they exist) because they involve grossly disproportionate sacrifices to the resultant reduction in risk.

In alignment with NOPSEMA’s ALARP Guidance Note (N-04300-GN0166, Rev 6, June 2015), Esso has adapted the approach developed by Oil and Gas UK (OGUK, 2014) for use in an environmental

context to determine the assessment technique required to demonstrate that potential impacts and risks are ALARP (Figure 4-1).

Specifically, the framework considers impact severity and several guiding factors:

- activity type
- risk and uncertainty
- stakeholder influence.

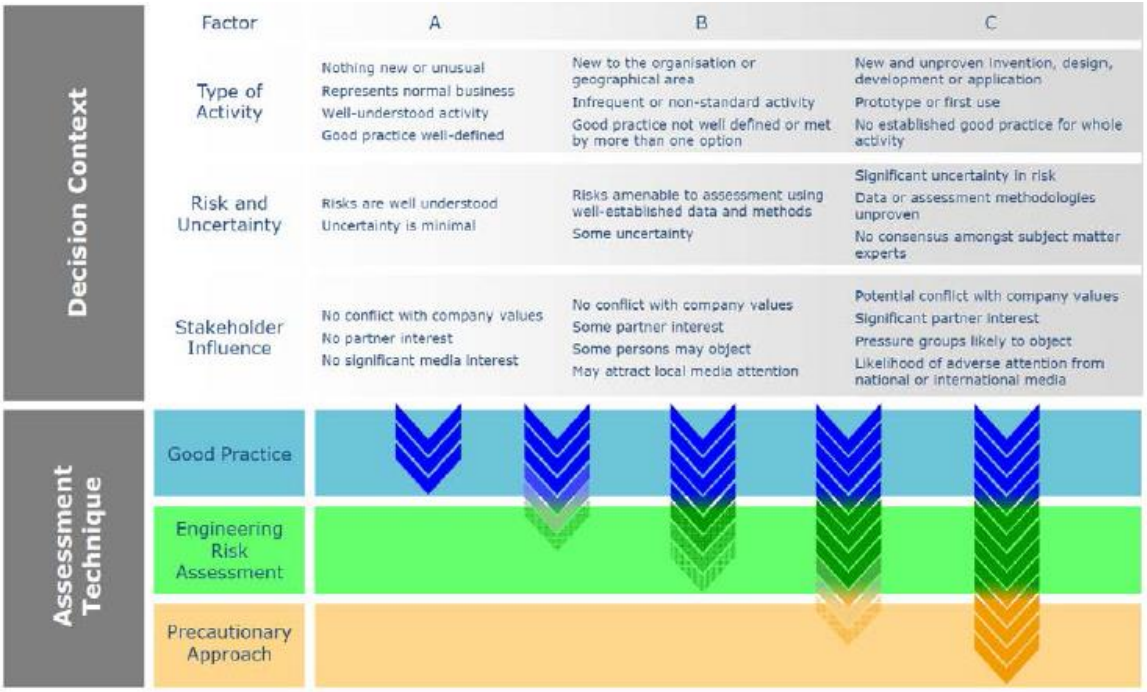
Type A decision:
Risk is relatively well understood, the potential impacts are low, activities are well practised, and there are no conflicts with company values, no partner interests and no significant media interests. However, if good practice is not sufficiently well-defined, additional assessment may be required.

Type B decision:
There is greater uncertainty or complexity around the activity and/or risk, the potential impact is moderate, and there are no conflict with company values, although there may be some partner interest, some persons may object, and it may attract local media attention. In this instance, established good practice is not considered sufficient and further assessment is required to support the decision and ensure the risk is ALARP.

Type C decision:
Typically involves sufficient complexity, high potential impact, uncertainty, or stakeholder influence to require a precautionary approach. In this case, relevant good practice still must be met, additional assessment is required, and the precautionary approach applied for those controls that only have a marginal cost benefit.

These decision types (Source: *NOPSEMA ALARP Guidance Note – N-04300-GN0166 Rev 6 June 2015*

Figure 4-1) were applied in determining the level of assessment required to demonstrate that environmental impacts and risks are ALARP (Chapter 6).



Source: NOPSEMA ALARP Guidance Note – N-04300-GN0166 Rev 6 June 2015

Figure 4-1 ALARP Decision Support Framework (OGUK, 2014)

The assessment techniques include:

- good practice
- engineering risk assessment
- precautionary approach.

4.2.1.1 Good Practice

OGUK (2014) defines 'Good Practice' as: "*The recognised risk management practices and measures that are used by competent organisations to manage well-understood hazards arising from their activities*".

'Good Practice' can also be used as the generic term for those measures that are recognised as satisfying the law. For this EP, sources of good practice include:

- requirements from Australian legislation and regulations
- relevant Australian policies
- relevant Australian Government guidance
- relevant industry standards
- relevant international conventions.

If the ALARP technique is determined to be 'Good Practice', further assessment ('Engineering Risk Assessment') is not required to identify additional controls. However, additional controls that provide a suitable environmental benefit for an insignificant cost are also identified at this point.

4.2.1.2 Engineering Risk Assessment

All potential impacts and risks that require further assessment are subject to an 'Engineering Risk Assessment'. In accordance with OGUK (2014), a comparative assessment of risks, costs, and environmental benefit was applied, based on a cost–benefit analysis between the environmental benefit and the cost of implementing the identified measure.

4.2.1.3 Precautionary Approach

Where the assessment, considering all available engineering and scientific evidence, is insufficient, inconclusive, or uncertain, then a precautionary approach to hazard management is applied (OGUK 2014).

Under the precautionary principle, environmental considerations take precedence over economic considerations, and a control measure that may reduce environmental impact is more likely to be implemented. This approach could have significant economic consequences to an organisation.

4.3 Demonstration of Acceptable Level

The environmental impact and risk is considered to be reduced to acceptable levels if:

- The level of residual environmental risk was assessed as being as low as reasonably practicable (ALARP); and
- The level of residual environmental risk associated with the activity was either Category 2, 3 or 4; and
- The activity is commonplace in current offshore practice (i.e. benchmarked), and is compliant with current industry/ExxonMobil Australia policy and standards, and Australian legislation; and
- Valid claims or objections to the risk from relevant persons or stakeholders, if any, are considered.

These factors are used to demonstrate acceptability in Chapter 5.

5 Environmental Risk and Impact Evaluation

The risk assessment process undertaken as part of the preparation of the EP assessed the environmental impacts and risks associated with the CBA PRP scope. Nineteen risks have been identified and assessed. Of these risks, 9 (RA1 to RA9) were identified and assessed as support activities, 5 (RA10 to RA14) were identified and assessed as pipeline repair associated activities, with a further 6 risks (RA15 to RA20) identified and assessed as resulting from unplanned events.

Table 5-1 Summary of Impacts and Risks associated with Blackback P&A Campaign

RA	Environmental Impact or Risk	Likelihood	Consequence	Risk Ranking
Routine Offshore Activities				
1	Vessel Sewage, Greywater and Foodwaste Discharge	D	IV	4
2	Vessel Presence – Noise and Light	C	IV	4
3	Vessel Deck Drainage	D	IV	4
4	Vessel Oily Water Discharge	D	IV	4
5	Vessel Ballast Water Discharge	E	II or III	4
6	Vessel Biosecurity & Hull Biofouling	E	II or III	4
7	Vessel Presence and Movements – Interaction with Fauna	D	IV	4
8	Vessel Combustion Equipment	B	IV	4
9	Vessel Presence – Interference with other marine users	D	IV	4
Operational Area Presence and Abandonment Operations				
10	Riser cutting	D	IV	4
11	Connection of New Flexible	D	IV	4
12	Installation of New Flexible	D	IV	4
13	Presence of New Flexible – Interference with other marine users	E	IV	4
14	Presence of redundant CBA300 pipeline	B	IV	4
Unplanned Events				
15	Loss of hazardous and non-hazardous waste	D	IV	4
16	Accidental Release – Dropped/lost overboard objects	C	IV	4
17	Accidental Release – Foam deluge system	E	IV	4
18	Accidental Release – Hydraulic fluid from ROV operations	C	IV	4
19	Loss of containment of hydrocarbons or MDO	E	III	4
20	Spill Response Strategies	E	IV	4

5.1 Routine Offshore Activities

5.1.1 Vessel Sewage, Greywater and Food Waste Discharges (RA 1)

5.1.1.1 Hazard

During the pipeline repair program, sewage, grey water (comprising laundry, shower and sink water) and putrescible wastes (comprising of food scraps) will be routinely discharged from the DSV and HRV to the marine environment. Approximately 100 L of sewage and greywater and approximately 1 L of food waste will be produced per person per day.

5.1.1.2 Impact Assessment

The discharge of sewage, greywater and putrescible food waste has the potential to result in localised impacts on marine fauna from increased nutrient availability and biological oxygen demand (BOD) causing adverse changes to the ecosystem such as oxygen depletion and phytoplankton blooms) and increasing scavenging behaviours.

The discharge of effluent from a moving vessel is broadly acceptable due to the high level of dilution achieved on release to the receiving waters. Several studies have quantified the high levels of dilution which are in the order of approx. 200,000 – 640,000 for effluents discharged behind large ships (USEPA 2002; Loehr *et al*. 2006). The discharge and subsequent level of dilution was shown to be adequate for mitigating localised toxicity impacts to marine biota from any changes in water quality.

This mixing zone boundary has been studied in the industry. Monitoring of sewage discharges has demonstrated that a 10 m^3 sewage discharge over 24 hours from a stationary source in shallow water, reduced to approximately 1% of its original concentration within 50 m of the discharge location. In addition to this, monitoring at distances 50, 100 and 200 m downstream of the platform and at five different water depths confirmed that discharges were rapidly diluted or nutrients rapidly assimilated and no elevations in water quality monitoring parameters (e.g. total nitrogen, total phosphorous and selected metals) were recorded above background levels at any station (NERA 2017b).

The ecological receptors with the potential to be exposed to changes in surface water quality are transient marine fauna, including whales, sharks, fish and marine reptiles. Specifically, the operational area lies within a foraging BIA for the Pygmy blue whale.

McIntyre and Johnson (1975) indicate that the influence of nutrients in open marine areas is much less significant than that experienced in enclosed areas and suggest that zooplankton composition and distribution are not affected in these areas. Black *et al.* (1994) state that BOD of treated effluent is not expected to lead to oxygen depletion in the receiving waters. There have been no recent observations of phytoplankton blooms in Bass Strait as a result of sewage, greywater or putrescible food waste discharge from platforms.

Food waste discharges may promote scavenging behaviour by marine fauna or seabirds, resulting in localised population concentrations and in turn promoting predatory behaviour. This may impact on plankton, marine mammals, fish and seabirds near the point of discharge (the operational area lies within a foraging BIA for the Pygmy blue whale). The rapid consumption of food waste by scavenging fauna, and physical and microbial breakdown, ensures that any effects are highly localised (Black *et al.*, 1994).

No significant impacts are expected from the routine discharge of sewage, grey water and putrescible food waste given the small volumes involved (relative to daily turnover of nutrients in the area), high biodegradability/low persistence of the waste and rapid dispersion in the high energy environment.

As potential impacts on plankton are highly localised and temporary, impacts to the Pygmy blue whale's (or other fauna's) food source and any predator-prey dynamics is negligible. Several species of seabirds are known to have a large foraging range, and consequently may be exposed to these discharges. However, as any impacts are highly localised, any potential change to their scavenging behaviours is expected to be incidental.

Consequently, the potential impacts and risks from the planned discharge of sewage, greywater and putrescible food wastes have been evaluated as Category IV (low), given this type of event is very unlikely to result in localised, short-term impacts to a species of conservation value (seabirds; Pygmy blue whale) through impacting their foraging habitat.

5.1.1.3 Controls

The disposal of sewage and grey-water from DSV and HRV is required to be in accordance with Marine Order 96 (Marine pollution prevention – sewage) 2018 (which gives effect to MARPOL Annex IV – Regulations for the Prevention of Pollution by Sewage from Ships).

Discharge of sewage which is comminuted or disinfected using a certified MARPOL-compliant sewage treatment plant is permitted at a distance of no less than 3 NM from the nearest land. Sewage not comminuted or disinfected may be discharged as long as the vessel is no less than 12 NM from the nearest land. All project vessels are fitted with a MARPOL-compliant sewage treatment system and compliance will be verified during the pre-mobilisation audits.

Putrescible food waste from vessels is required to be treated in accordance with Marine Order 95 (Marine pollution prevention – garbage) 2018 (which gives effect to MARPOL Annex V – Regulations for the Prevention of Pollution by Garbage from Ships).

Putrescible waste which is comminuted to 25 mm or less is permitted to be discharged if the vessel is en-route and greater than 3 NM from the nearest land. Discharge of putrescible waste which is not comminuted to 25 mm or less is permitted at greater than 12 NM from the nearest land while en-route. Discharge of un-macerated waste is prohibited within the existing 500m PSZ surrounding offshore platforms. Waste which is not able to be discharged in accordance with these requirements will be temporarily stored onboard for onshore disposal.

Sewage, greywater and putrescible food waste discharges are within parameters as defined within the draft Reference Case 1001 (NERA 2017b).

In summary:

- Maintained and operational MARPOL-compliant sewage treatment plant.
- Discharge of comminuted and disinfected sewage using a certified MARPOL-compliant sewage treatment plant at a distance of no less than 3NM from nearest land. Discharge of untreated sewage at a distance of no less than 12 NM from nearest land.
- Food waste macerated to ≤25 mm (using an onboard macerator) before discharge.
- Macerated putrescible waste only discharged overboard when the vessel is greater than 3 NM from the coastline and while proceeding en-route. Un-macerated putrescible waste only discharged overboard when the vessel is more than 12 NM from the coastline and while proceeding en-route. Unmacerated waste not discharged within 500m of offshore platforms.
- A Preventative Maintenance System (PMS) is in place to ensure that the MARPOL-compliant sewage treatment plant and the macerator continue to operate at the required standard.
- Environmental induction on garbage management requirements.

5.1.1.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.1.1.5 Demonstration of ALARP

Having a maintained and operational MARPOL-compliant sewage treatment plant and food macerator, confirmed by the pre-mobilisation inspection are sufficient control measures to reduce the impacts and risks associated with this hazard to ALARP, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4). The requirements under MARPOL Annexes IV and V, as confirmed by pre-mobilisation inspection, are appropriate for managing the day to day risk of this activity.

Other controls and alternatives were considered. The installation of an electric marine water evaporator to evaporate the water portion of grey water and treated black water was considered, however it was not deemed practicable due to cost considerations (i.e. the costs of implementing these measures are grossly disproportionate to the reduction in risk). Operation of an additional generator would also result in an increase in air emissions and an increase in spill risk due to additional fuel storage requirements.

The disposal of all food waste onshore was also considered however this would require storage in dedicated holding tanks (for which there is limited space on a vessel), additional lifting operations and transport to an onshore port. Although food scraps are stored temporarily for onshore disposal during equipment malfunction and maintenance, this is not considered to be practicable on a permanent basis. In addition to safety and hygiene considerations, additional vessel trips to shore increase the consumption of diesel and hence atmospheric emissions. The time and cost involved in implementing this measures is grossly disproportionate to the reduction in risk.

The potential impact is localised and short-term, which is not considered as having the potential to affect biological diversity and ecological integrity. The activity is not considered as having the potential to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required. No stakeholder concerns have been raised to date regarding treated sewage, greywater and macerated food waste discharges. There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.1.1.6 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. This is a type A ALARP decision. As all relevant standards (Esso, Australian Standards, MARPOL and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3. The environmental performance outcomes and environmental performance standards for the controls above are given in Table 5-17.

5.1.2 Vessel Presence - Noise and Light (RA 2)

5.1.2.1 Hazard

The main source of underwater noise from a vessel is through the use of dynamic positioning (DP) thrusters to maintain position. Highest noise levels are likely to occur during the use of bow thrusters to maintain position. McCauley (1998) measured underwater noise in root square mean sound pressure level (RMS SPL) from a support vessel holding its position using bow-thrusters as 182 dB re 1 µPa at 1 m (RMS SPL) and 137 dB re 1 µPa at 405 m (RMS SPL). Levels of 120 dB re 1 µPa (RMS SPL) extended for a distance of approximately 3-5 km from the source. Under normal conditions (i.e. when vessels are idling or moving between sites), source levels would be between 160-180 dB re 1 µPa at 1 m (Hatch & Southhall, 2009).

Both the DSV and HRV are equipped with navigation lights. The operational area is remote from seabird and turtle nesting areas and therefore lighting from associated structures and vessels has a low potential for impacting marine fauna. The presence of operational area lighting does not appear to disrupt or disorient fish or marine mammals such as seals or cetaceans.

5.1.2.2 Impact Assessment

Noise

Elevated underwater noise can affect marine fauna, including cetaceans, turtles and sharks in three main ways (Richardson *et al.*, 1995; Simmonds *et al*., 2004):

- By causing direct physical effects on hearing or other organs (injury)
- By masking or interfering with other biologically important sounds (including vocal communication, echolocation, signals and sounds produced by predators or prey)
- Through disturbance leading to behavioural changes or displacement from important areas.

In the operational area, the marine fauna most at risk from acoustic disturbance are cetaceans, particularly baleen whales, as the auditory bandwidth of these large whales (ranging from 7 Hz to 22 kHz (Southhall *et al.* 2007) overlaps with the low frequency broadband noise produced by thrusters during vessel positioning and movement. Underwater noise levels from a range of vessels including DP vessels have been measured at 164-182 dB re 1 µPa at 1 m (RMS SPL) (McCauley 1998). The sound source intensity from a USBL system is typically 190-205 dB re 1 µPA. These sounds levels are within the 120 to 180 dB re 1µ (SPL) range required before the onset of behavioural disturbance (Southall *et al.* 2007) but well below the well below proposed injury criteria for low frequency cetaceans (estimated at 230 dB re 1 µPa) (Southall *et al*., 2007). Underwater noise levels are expected to dissipate rapidly with distance from the source, given their frequency range and low intensity.

It is likely that whales in the vicinity of the DSV will avoid the immediate area due to an aversive response to the sound (DEWHA 2008). This aversion acts as a mitigation to prevent whales from approaching or being approached closely enough to cause acoustic injury from intense or prolonged sound exposure. However should a whale approach the DSV, either during pipelay or when on location adjacent to the platforms (with divers in the water) when it will not be practicable to switch off the thrusters or move away, the sound levels from the positioning system will be well below the injury criteria (see above).

The operational area contains no recognised feeding, breeding or resting aggregation areas for Humpback or Blue whales, DOEE (2015b) notes that outside of the recognised Blue whale feeding areas possible foraging areas include Bass Strait. The foraging BIA for the Pygmy blue whale overlaps

the operational area. The operational area is also within the migration pathways for the Blue whale, Humpback whale and Southern right whale. The activities may coincide with the period when Blue whales are more likely to be present in south-eastern Australian waters as a result of migration, any behavioural response or avoidance behaviour is limited to individuals transiting the area. Any temporary displacements for the short duration of the CBA PRP are unlikely to result in any real biological cost to the animals. Any interaction in the operational area will not interfere with the critical behaviours of breeding or resting and is unlikely to interfere with foraging behaviour (which typically occurs between January and April in Bass Strait), or occur in important areas such as narrow migratory corridors. Given the short duration of the pipeline repair program and the low numbers of whales transiting the area, potential impacts to whales are likely to be short term and minor.

Seals congregate and rest on the legs of offshore facilities further inshore, and at times on the sea deck of offshore platforms; they appear to be unperturbed or impacted by noise. Anecdotedly, whales are also known to play and display normal breaching, blowing, lobtailing and diving behaviour around the offshore facilities and vessels, including with calves, before moving on again.

Although individuals of all five species of species of turtle may pass through the area during their long migrations, they are not likely to be resident or occur in the area in significant numbers as there are no turtle BIAs or nesting areas within the ZPI. Marine turtles have an auditory bandwidth of 100–800 Hz, with the greatest sensitivity between 200–400 Hz (adults) and 600–700 Hz (juveniles) (Ketten & Bartol, 2005). This frequency does not overlap with the broadband low frequency noise generated by thruster and USBL use, therefore, turtles are not likely to be significantly affected by underwater noise associated with project vessels.

Impacts on fish are likely to be minimal and limited to behavioural disturbance, as fish may avoid acoustical emissions which attain levels that have the potential to cause pathological effects (Hatch & Southall, 2009). However, the underwater noise levels generated by thrusters is unlikely to result in auditory injury of a range of species (Nedwell & Edwards, 2004), including fish and porpoises.

Given the short duration, intermittent nature and relatively low intensity of noise associated with project vessels, impacts from underwater noise (if any) are likely to consist of short term behavioural disturbance.

Light

Light studies in the North Sea confirmed that lighting can attract birds from large catchment areas (Weise *et al*. 2001). Although the operational area overlaps several foraging BIAs for seabirds, it is not expected that light emissions acting as an attractant to a small number of individual seabirds would result in any impact to the individual or to the greater population.

Cetaceans predominantly utilise acoustic senses to monitor their environment rather than visual sources (Simmonds *et al*. 2004), so light is not considered to be a significant factor in cetacean behaviour or survival.

Other marine life may also be attracted to the vessels (e.g., fish, squid and plankton) that can aggregate directly under downward facing lights. These are prey species to many species of marine fauna and given the nature of the activity, any impacts arising from light emissions will be localised and temporary.

Artificial light can cause significant impacts on burrow-nesting petrels and shearwaters. Fledglings often become disoriented and grounded because of artificial light adjacent to rookeries as they attempt to make their first flights to sea, a phenomenon known as ‘fallout’ (Birdlife International 2012). Rodriguez *at al*. (2014) investigated the effects of artificial lighting from road lighting on short-tailed shearwater fledglings. The study established by removing the light source from nesting areas, there was a decrease in grounded fledglings and a corresponding reduction in bird fatalities.

Light pollution can be an issue near turtle nesting beaches where emerging hatchlings orient to, and head towards, the low light of the horizon (EA 2003). Given that the operational area is approximately 70 km offshore and there are no turtle nesting beaches in Bass Strait, impacts to nesting adult turtles is not expected. Consequently, the potential impacts and risks from light emissions are considered to be negligible.

Consequently, the potential impacts and risks from noise and light due to activities in the operational area are considered to be localised and short-term, as this type of event may result in a localised short-term impact to species of recognised conservation value but is not expected to affect the population or local ecosystem function, and have been rated as a as Category IV (low).

5.1.2.3 Controls

- Vessel masters will be briefed on 'caution' and 'no approach' zones and interaction management actions as defined in the EPBC Regulations – Part 8 Division 8.1 Interacting with cetaceans
- A vessel master (or delegate) will be on duty at all times
- Vessels adhere to the distances and vessel management practices of EPBC Regulations - Part 8 Division 8.1 Interacting with cetaceans
    - Vessels will travel at less than 6 knots within the caution zone of a cetacean and minimise noise (caution zone is defined as a 150 m radius for dolphins, 300 m for whales and 50 m for seals).
    - The vessel must not drift closer than 50 m (dolphins and seals) and 100 m (whale).
    - If whale comes within above limits, the vessel master will, if practicable, disengage gears and let the whale approach or reduce the speed of the vessel and continue on a course away from the whale.
    - The vessel must not restrict the path of a marine mammal.
    - The vessel must not separate any individual from a group of marine mammals or come between a mother whale and calf or a seal and pup.
    - If the vessel is within the caution zone of a marine mammal the vessel must move at a constant speed that does not exceed 5 knots, avoids sudden changes in speed or direction and manoeuvres the vessel to outside the caution zone if the marine mammal shows any sign of disturbance.
    - Additionally, if a vessel is within the caution zone of a marine mammal, the vessel shall not approach a marine mammal from head on, from the rear or be in the path ahead of a marine mammal at an angle closer than 30° to its observed direction of travel.
- Trained crew members on active duty will report observations of megafauna located within the caution zone to the vessel master (or their delegate) and EAPL personnel, as soon as it is safe to do so.
- All personnel have completed an environmental induction covering the requirements for marine mammal/vessel interaction consistent with EPBC Regulations Part 8 Division 8.1 and are familiar with the requirements. This includes a requirement to notify the bridge and EAPL personnel if marine mammals are sighted in the caution zone.
- Preventative maintenance system to maintain vessel engines and propulsion systems to minimise noise impacts.
- Lighting limited to that required for safe navigation and work requirements, by minimising light spill to sea.

5.1.2.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
C	IV	4

5.1.2.5 Demonstration of ALARP

Compliance with EPBC Regulations Part 8, Division 8.1: Interacting with cetaceans as well as the controls described above are considered sufficient control measures to reduce the impacts and risks associated with this hazard to ALARP, as the nature of this risk is well understood, the activity is a well-

established practice and the residual risk resulting from this activity is considered to be low (Category 4).

The duration of the project has been reduced to as short as possible. The use of vessels cannot be eliminated as they are required to undertake the pipeline repair project. The activity has been scheduled to enable the earliest possible start-up of production on Cobia taking into consideration both vessel selection and availability, and weather conditions. The weather window for marine operations, such as laying offshore pipelines, in Bass Strait occurs in the Summer months from December to February. Scheduling at the start of the weather window maximises the length of potentially suitable time available and the better weather will help minimise the duration the campaign and hence any potential interference. Given that the waters of the operational area and Operational ZPI do not contain significant feeding, breeding or resting areas for cetaceans, marine turtles or sharks and the short duration of the project, Esso considers the risk to be ALARP.

Offshore activities involving DSVs are widely undertaken both nationally and internationally. Underwater sound emissions from vessel thrusters and positioning system is unavoidable, however will be intermittent during the activity. Other controls and alternatives were considered, in accordance with Section 4.2.

During stakeholder consultation, SETFIA raised concern about any oil and gas related activities within the 6 months prior to the Fishery Independent Study (FIS), being February to mid-September 2018. Following the consultation (Chapter 108.3) SETFIA has confirmed that they have no further concerns or objections to the proposed activity.

The use of navigational lights and other lights to enable 24-hour operations to be undertaken, are routine activities in the offshore petroleum sector and are required for the safety of the vessels and the crew. The impacts and risks associated with light emissions are well understood, with most significant impacts generally associated with operating within close proximity of shorelines that support light sensitive species.

The potential impact associated with this aspect is limited to a localised short-term impact, which is not considered as having the potential to affect biological diversity and ecological integrity. The activities are not considered as having the potential to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required.

Because the potential impacts associated with underwater noise and light from these activities is limited, ALARP Decision Context A should apply. No further controls or alternatives have been identified. On this basis Esso considers the risk to be ALARP.

5.1.2.6 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.1.3 Vessel Deck Drainage (RA 3)

5.1.3.1 Hazard

Discharge of contaminated deck runoff has the potential to change water quality which could impact on marine species. Deck drainage consists of rain and wash down water that may contain small amounts of detergents, residual hydrocarbons and chemicals spilt or stored on the deck floor.

5.1.3.2 Impact Assessment

Chemicals and other contaminants that are present in the drainage water can potentially harm fish and other species that reside in the water column such as plankton.

Deck drains which only contain rainwater are directed overboard.

Small amounts of chemicals, oil and grease may be released overboard during a spill on the deck, however all overboard drains are fitted with scupper plugs which are closed in the event of a spill. Areas of the deck that have been subject to small spills (e.g. in areas where chemicals, oils and wastes are stored) are mopped up utilising spill clean-up materials or pumped to the waste oil settling tank.

However, during wash-down events it is possible that minor diluted quantities of chemicals, oil and grease may be discharged. Cleaning agents selected for use in deck wash-down will comply with the requirements of Marine Order 95 (Marine pollution prevention – garbage) 2018 (which gives effect to MARPOL Annex V) and will not be "harmful substances" (as defined in MARPOL Annex III) or contain a component that is carcinogenic, mutagenic or reprotoxic.

Due to the low levels of contaminants likely to be entrained in the discharge and the rapid dilution and dispersal in the open water environment and the low number sensitive receptors known to occur in the operational area, the discharge is anticipated to have little or no impact on the receiving environment.

There is potential for minor, short-term impacts to species that rely on plankton as a food source. Any impact to these species would be temporary as the duration of exposure would be limited, and fish larvae and other plankton are expected to rapidly recover as they are known to have high levels of natural mortality and a rapid replacement rate (UNEP 1985).

Consequently, the potential impacts and risks from discharge from deck drains are considered to be localised and short-term, and have been rated as a Level IV consequence.

5.1.3.3 Controls

- Scupper plugs fitted for use in deck drains.
- Secondary containment for storage of oil and chemicals.
- Secondary containment for storage of waste oil and chemicals.
- Selection of cleaning agents which are not classified as "harmful substances" as defined in Appendix to MARPOL Annex III or contains a component that is carcinogenic, mutagenic or reprotoxic.
- Environmental awareness induction

5.1.3.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.1.3.5 Demonstration of ALARP

Having secondary containment for oil and chemical storage on deck, and provision to prevent direct discharge to the sea, are considered sufficient to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4). This is a Type A ALARP Decision. Since uncontaminated deck drain discharges do not affect biological diversity and ecological integrity, and the risk is low, no further evaluation against the principles of ESD is required.

Other controls and alternatives that have been considered include the treatment and/or collection of all rainwater/wash-water. This would require storage in dedicated holding tanks, for which there is limited space either on or below deck, as well as increased capacity of the oily water treatment system. This is not considered to be practicable due to the time and cost of implementing these measures being grossly disproportionate to the reduction in risk, and safety considerations involved.

The installation of an electric marine water evaporator to evaporate away the water portion of deck drainage water is not considered practicable due to cost considerations and additional emissions from the generator. Such a generator would also necessitate additional fuel storage (most likely to be diesel), which increases diesel spill related risks.

There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.1.3.6 Demonstration of Acceptability

For this hazard the residual risk was assessed as a Category 4 (low risk). As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.1.4 Vessel Oily Water (Bilge) Discharge (RA 4)

5.1.4.1 Hazard

Discharge of machinery space drainage (bilge) contaminated with oil may cause a temporary and localised change in water quality. The DSV is fitted with a MARPOL-compliant oil-in water separator (OWS), with effluent monitored through an inline Oil Detection Monitoring System (ODME). Any discharge of oily water is automatically stopped when the oil in water (OIW) content of the effluent exceeds 15 ppm.

5.1.4.2 Impact Assessment

The oil in bilge water can potentially harm fish and other species that reside in the water column such as plankton.

The intermittent discharge of oily water at less than 15ppm to the marine environment may result in temporary, localised increases in oil content of marine waters immediately surrounding the vessel discharge point. This small waste stream as it enters the marine environment will be compliant with Marine Order 91 (Marine pollution prevention – oils) 2014 (which gives effect to MARPOL Annex I) requirements; discharged only while the vessel is en-route; and if discharge is required will occur in the highly dispersive waters of Bass Strait. On this basis environmental impacts from the discharge will be localised and temporary.

Oily residues generated in the bilge treatment process are returned to shore for disposal at an appropriately licenced facility.

OSPAR (2014) indicates that the predicted no effect concentration (PNEC) for marine organisms exposed to dispersed oil is 70.5 ppb. It should be noted that this PNEC is based upon no observed effect concentrations (NOEC) after exposure to certain concentrations for an extended period that was greater than 7 days (OSPAR 2014).

USEPA (2002) modelled the plume off liquid discharges, in addition to tracking the plume of liquid. The effluent was marked with a fluorescent dye for tracing dilution rates in the plume. Predicted initial dilution rate was 40,000:1, whereas measured values varied between 200,000:1 and 640,000:1.

Given the small volumes and low oil concentrations involved, the infrequent nature of this discharge and the assimilative/dispersive nature of the receiving environment, it is considered very unlikely that this discharge will impact water quality to the extent that toxic impacts to marine fauna will occur. The discharge is anticipated to have little or no impact on the receiving environment.

There is potential for minor, short-term impacts to species that rely on plankton as a food source. Any impact to these species would be temporary as the duration of exposure would be limited, and fish larvae and other plankton are expected to rapidly recover as they are known to have high levels of natural mortality and a rapid replacement rate (UNEP 1985).

Consequently, the potential impacts and risks from planned discharge of treated bilge are considered to be localised and short-term, and have been rated as a Level IV consequence.

5.1.4.3 Controls

- Maintained and operational MARPOL-compliant OWS and ODME / OIW analyser.
- A Preventative Maintenance System (PMS) is in place to ensure that the MARPOL-compliant OWS and OIW analyser continue to operate at the required standard.
- Compliance with MARPOL Annex I oil / oily water discharge conditions.

- Onshore disposal of residual oil.

5.1.4.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.1.4.5 Demonstration of ALARP

Having a maintained and operational MARPOL-compliant OWS and ODME / OIW analyser is considered sufficient control measure to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4). The requirements under MARPOL Annex I are appropriate for managing the day to day risk of bilge water discharge. This is a Context A ALARP Decision. Since treated bilge water discharges do not affect biological diversity and ecological integrity, and risk is low, no further evaluation against the principles of ESD is required.

Other controls and alternatives that have been considered including the disposal of oily water onshore. This would require storage in dedicated holding tanks for which there is limited space either on or below deck, additional lifting operations and/or transport to an onshore port for transfer by road tanker to a licensed waste treatment plant. This is not considered to be practicable due to the time and cost of implementing these measures being grossly disproportionate to the reduction in risk, and safety considerations involved.

The installation of an electric marine water evaporator to evaporate away the water portion of oily bilge water is not considered practicable due to cost considerations and additional emissions from the generator. Such a generator would also necessitate additional fuel storage (most likely to be diesel), which increases diesel spill related risks.

There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.1.4.6 Demonstration of Acceptability

For this hazard the residual risk was assessed as a Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.1.5 Vessel Ballast Water Discharge (RA 5)

5.1.5.1 Hazard

Marine vessels can carry ballast seawater containing marine species that, when discharged, has the potential to translocate the marine species into areas where they could displace native species, or interfere with ecosystem processes in other ways.

Note that biofouling risk has been addressed separately, under RA 6 (Section 5.1.6).

5.1.5.2 Impact Assessment

Planned discharge of ballast water has the potential to introduce a marine pest. The Commonwealth Biosecurity department indicates that ballast water is responsible for 20-30% of all marine pest incursions into Australian waters (DAWR, 2015a). The Department of Agriculture and Water Resources (DAWR) (formerly AQIS) declares that all saltwater from ports or coastal waters outside Australia's territorial seas presents a high risk of introducing foreign marine pests into Australia (AQIS 2011).

Vessels arriving at an offshore oil and gas installation within Australia's Exclusive Economic Zone (EEZ) must manage their ballast water in accordance with one of the acceptable methods of ballast water management (DAWR 2017), prior to arrival.

The DAWR has introduced mandatory ballast water regulations, consistent with the IMO Ballast Water Management Convention, requiring ballast water to be exchanged outside Australia's territorial sea boundary (i.e. up to 12NM offshore from the territorial sea baseline, generally the low water mark). This

measure greatly reduces the risk of introduction of invasive marine species (IMS) from international shipping, such that it is considered low to negligible.

For offshore support vessels operating between offshore oil and gas installations and Australian ports the acceptable area for ballast water exchange is in sea areas no closer than 500 m from the offshore installation and no closer than 12NM from land. Note that the HRV (Bhagwan Dryden) has no seawater or freshwater ballast tanks and was not designed or constructed to carry ballast water and therefore it is not subject to the IMO Ballast Water Management Convention.

The Marine Pests Interactive Map (DAFF 2017) indicates that ports including Portland, Geelong, Melbourne and Eden are known to harbour the following species:

- Northern pacific sea star.
- European shore crab.
- New Zealand screw shell.
- European fan worms (*Sabella spallanzannii* and *Euchone* sp.) – attaches to hard surfaces, artificial structures and soft sediments, preferring sheltered waters up to 30 m deep. It reached Port Phillip Bay in the mid-1980s and is a nuisance fouler (ParksVic 2017).
- Japanese kelp (*Undaria pinnatifida*) – occupies cold temperate oceanic waters up to 20 m deep, growing on rock, reef, stones and artificial structures. It rapidly forms dense forests and overgrows native species. It first established in Port Phillip Bay in the 1980s (ParksVic 2017).
- Asian date mussel (*Musculista senhousia*) – prefers soft sediments in waters up to 20 m deep, forming mats and altering food availability for marine fauna.
- European shell clam (*Varicorbula gibba*) – burrows into soft-bottomed habitats in waters up to 150 m deep in temperate waters, forming mats and altering food availability for marine fauna.

These species have the potential to be picked up in ballast water and transferred to other areas. The Pacific oyster (See Section 6.1.6) and European shore crab are also known to occur in the Gippsland Lakes (Hirst & Bott 2016).

The known and potential impacts of IMS introduction include:

- Reduction in native marine species diversity and abundance;
- Displacement of native marine species;
- Socio-economic impacts on commercial fisheries; and
- Changes to conservation values of protected areas.

During CBA PRP no ballast water discharge is planned to occur during petroleum activities or within the Australian territorial sea boundary. The only exception would be an emergency event requiring immediate action to maintain the safety of the vessel.

Water that has been taken up on the high seas, or international waters, is considered to be low risk. This includes water that is greater than 12NM from any land mass and in water that is greater than 50 m deep (DAWR 2017). Open-ocean ballast water discharge or exchange is considered the best compromise between efficacy, environmental safety and economic practicality to manage the potential risk of IMS (DOF 2009). The two key assumptions underpinning this are:

- Changes in biological condition (including salinity) of source and recipient waters (i.e. coastal or estuarine IMS) are presumed unlikely to survive in ocean waters, and vice versa.
- The transport of viable released non-indigenous organisms from open-ocean to coastal and estuarine waters, by ocean currents, is considered extremely unlikely.

Research indicates that biofouling has been responsible for more foreign marine introductions than ballast water (DAWR 2015b). Section 5.1.6 provides an overview of recent biosecurity incidents in Victorian waters, largely relating to hull biofouling.

Consequently, the impacts and risks from the introduction of invasive marine species via ballast water are considered to be potentially long-term and with adverse impacts, and have been rated as a Level II or III consequence

The potential risks from ballast water discharge are considered to be low, considering that project vessels are required to meet Australian Ballast Water Management Requirements (DAWR 2017) and will be operating well outside the Australian territorial seas.

5.1.5.3 Controls

- For the Cobia PRP campaign there will be no planned ballast water discharges during petroleum activities. Ballast water will be exchanged prior to arrival in Australian water and will be done in >200m of water and >200Nm from land.
- Under the Biosecurity Act 2015 Section 193, pre-arrival information reported through the Maritime Arrivals Reporting System (MARS) no later than 12 hours prior to arriving in Australian waters.
- DSV holds approved Ballast Water Management Plan and Certificate in accordance with the IMO Ballast Water Management Convention (IMO, 2004)
- Vessels that are intending to discharge internationally sourced ballast water must submit a Ballast Water Report through MARS at least 12 hours prior to arrival in Australian waters. Vessels not intending to discharge should also submit a Ballast Water Report.

5.1.5.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
E	II or III	4

5.1.5.5 Demonstration of ALARP

During CBA PRP activities no ballast water discharges are expected to occur while the vessel is conducting a petroleum activity. Compliance with Australian Ballast Water Management Requirements (DAWR 2017) (see detailed controls in 6.1.5.3) is considered a sufficient control measure to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.3, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

There is potential for an irreversible, impact to benthic communities from the introduction of IMS in released ballast water. However, the CBA PRP activities are being undertaken in an open ocean and deepwater environment (approximately 75 m water depth and at a distance of almost 70 km from shore). Waters taken up in this environment are considered to be low risk, and furthermore the area is considered acceptable for ballast water exchange (DAWR 2017), so that the potential for irreversible impacts is very unlikely to affect biological diversity and ecological integrity.

Further considerations against the remaining Principles of ESD include that there is little uncertainty associated with this aspect as the activities are well known, the cause pathways are well known, and activities are well regulated and managed. It is not considered that there is significant scientific uncertainty associated with this aspect. Therefore, the precautionary principle has not been applied.

Other controls and alternatives were considered, in accordance with Section 4.2, including the use of ballast free vessels; however ballast free vessels are not commercially available or viable. No stakeholder concerns have been raised for this risk. On this basis Esso considers the risk to be ALARP.

5.1.5.6 Demonstration of Acceptability

For this hazard the residual risk was assessed as a Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons (including the Department of Agriculture and water Resources), Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

To reduce the risk to ALARP any exchange of international ballast water will take place in >200m of water and >200Nm from land.

5.1.6 Vessel Biosecurity & Hull Biofouling (RA 6)

5.1.6.1 Hazard

Biological fouling on vessel hulls has the potential to translocate marine species into areas where they could displace native species or interfere with ecosystem processes in other ways.

International goods also have the potential to introduce non-native species into Australia.

5.1.6.2 Impact Assessment

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.

Marine pests known to occur in South Gippsland, according to ParksVic (2017o) and VEAC (2014) include:

- Pacific oyster (Crassostrea gigas) – small number of this oyster species are reported to occur in Western Port Bay and at Tidal River in the Wilsons Promontory National Park (DELWP, 2015).
- Northern pacific seastar (Asterias amurensis) – prefer soft sediment habitat, but also use artificial structures and rocky reefs, living in water depths usually less than 25 m (but up to 200 m water depths). It is thought to have been introduced in 1995 through ballast water from Japan.
- New Zealand screw shell (Maoricolpus roseus) – lies on or partially buried in sand, mud or gravel in waters up to 130 m deep. It can densely blanket the sea floor with live and dead shells and compete with native scallops and other shellfish for food. This species is present in eastern Bass Strait, forming extensive and dense beds on sandy seabeds (Patil *et al*., 2004). It is known to occur in the Point Hicks Marine National Park.
- European shore crab (Carcinus maenas) – prefers intertidal areas, bays, estuaries, mudflats and subtidal seagrass beds, but occurs in waters up to 60 m deep. It is presumed to occur on the intertidal reefs of all the marine national parks in Gippsland, except the Ninety Mile Beach MNP (which has no intertidal reef).

Successful Invasive Marine Species (IMS) invasion requires the following three steps:

1. Colonisation and establishment of the marine pest on a vector (vessel, equipment or structure) in a donor region (e.g. a home port, harbour coastal project site where a marine pest is established).
2. Survival of the settled marine species on the vector during the voyage from the donor to the recipient region.
3. Colonisation (e.g. by dislodgement or reproduction) of the recipient region by the marine pest, followed by successful establishment of a viable new local population.

The known impacts of IMS introduction include:

- Reduction in native marine species diversity and abundance;
- Displacement of native marine species;
- Changes to conservation values of protected areas; and
- Socio-economic impacts on commercial fisheries. An estimated 10 to 40 percent of Australia's fishing industry is potentially vulnerable to marine pest incursion (AMSA n.d.). For example, the introduction of the Northern pacific seastar into Victorian and Tasmanian waters was linked to a decline in scallop fisheries.

The benthic habitat within the CBA PRP operational area is characterised by soft sediment and shell/rubble seabed, infauna communities and sparse epibiotic communities (typically sponges). Areas of higher sensitivity are located considerable distances away (e.g. approximately 100km to Point Hicks Marine National Park, 150km to Beware Reef Marine Sanctuary and 175km to East Gippsland Marine Park).

Once established, some species can be difficult to eradicate (Hewitt *et al*., 2002) and therefore there is the potential for a long-term or persistent change in habitat structure. It has been found that highly disturbed environments (such as marinas) are more susceptible to colonisation than open-water environments, where the number of dilutions and the degree of dispersal are high (Paulay *et al*., 2002).

It is considered unlikely that a new IMS species would thrive given the nature of the benthic habitats near the operational area (i.e. predominantly bare sands with patchy occurrences of hard substrate), and light limitations at depth (i.e. approximately 75m). If an IMS was introduced, and if it did colonise an area, it is expected that any colony would remain fragmented and isolated, and only within the vicinity of the pipeline (i.e. it would be unlikely to be able to propagate to nearshore environments, and protected marine areas present in the wider region).

The potential risk from vessel biofouling in the CBA PRP operational area is therefore considered to be low due to the location in the offshore, open-ocean and deep water environment.

Nonetheless, all project vessels must undertake an IMS Risk Assessment, in accordance with the Esso Invasive Marine Species - Risk Assessment Procedure (IMS-RAP). The IMS-RAP, which is based on the "Vessel Check Risk Assessment Tool", developed by WA Department of Fisheries (DOF 2015), evaluates the following parameters:

- Transport method (dry verses wet haulage)

  The method of transporting the vessel from the previous operating area or port to Bass Strait influences the survival of marine species during the voyage. Marine pests are generally more likely to survive slower voyages such as towing as they are not subject to strong water flows. The survival of marine pests is also much higher on vessel hulls and towed equipment than on hulls or equipment that are transported as deck cargo or via heavy lift vessel as most marine species cannot tolerate prolonged exposure to air and sunlight and die from desiccation. A general guide is that a seven day period of no contact with water and exposure to direct sunlight, warm temperatures and low humidity will kill most marine species. However if these conditions are compromised (i.e. exposure to seaspray) the survival duration can be much longer.

- Presence and age of antifouling coating

  Antifouling coatings prevent marine growth on wetted areas. The antifouling coating must be applied to all wet sides and all relevant niches and submerged areas. There are a range of antifouling coatings available, which are matched to the vessel's normal speeds, activity profile and main operational regions. Vessels with an antifouling coating that is not fit for purpose are more likely to be found with IMS. To avoid premature coating failure the most appropriate coating system must be selected and applied according to manufacturer instructions.

  The recommended total service life (the time before which the coating should be reapplied) of the antifouling coating should also be taken into account. A Record of Antifouling Systems Certificate should be available which details when the antifouling coating was last applied.

  If the details of the antifouling coating cannot be supplied or indicate the coating is old, heavily worn or inappropriate for the vessels profile, the risk factor is increased.

  It is not possible to achieve a Vessel Risk Status of LOW without an AFC, or with an AFC that is expired, unless the vessel has been cleaned and transported via dry haulage.

- Evidence of recent dry dock or in-water IMS inspections and cleaning

  The risk of an IMS translocation is reduced by the detection and removal of marine growth before mobilisation. Inspection and cleaning can be conducted in-water by divers, or by haul-out (drydock) for inspection, cleaning and reapplication of the antifouling coating. The degree of inspection and cleaning will depend on a number of factors including the degree of biofouling evident, the activity

profile of the vessel, the condition and age of the antifouling coating and if the vessel has been operating in an area where a known or potential marine pest occurs. Haul-out is the most effective means for inspection, detection and removal of biofouling from vessel hull and niche areas therefore represents the greatest risk reduction.

In-water inspection is a useful way of inspecting the biofouling status of the vessel without the logistics and expense of complete removal from the water, however factors such as visibility and difficulties accessing all areas where biofouling may be present limits the quality of the inspection. As such, a lower level of risk reduction is given if in-water inspections are carried out.

All inspections and cleaning must be carried out or supervised by suitably qualified inspectors[1] and have an accompanying report of the activities. The WA DOF recommends that a vessel should depart within seven days[2] of an IMS inspection, or dry docking for AFC application. Seven days is a 'rule of thumb' used to provide a pragmatic balance between the logistical feasibility of vessels mobilising within this timeframe, versus the risk of vessels becoming contaminated with IMS.

- Presence and operation of internal seawater treatment systems if applicable

A further risk reduction is applied if the inspections or cleaning activities included checks of the niche areas of the vessel that could harbour IMS, including anchor lockers, sea chests, bilge spaces, propellers or thrusters and the seawater system. The risk reduction is also applied if the vessel has a marine growth prevention system (MGPS) for all niche areas that is operated and maintained in accordance with manufacturer's instructions. As different vessels have different pipework systems it is important to determine whether the treatment system is capable of treating all seawater intakes or pipework on the vessel. Risk reduction can also be applied if regular manual cleaning of the seawater system can be demonstrated.

- Duration of stay in overseas or interstate coastal waters

During periods of low speed (< 5 knots) or low activity operations, or periods spent inactive in port or coastal waters, considerable biofouling of underwater hull and niche areas can occur. The longer the vessel is stationary or operated at low speeds, the greater the risk of biofouling, particularly if the antifouling coating applied is not designed for these operating profiles. The risk of IMS colonization is therefore higher, the longer the vessel has been operating in this profile since the last antifouling coating was applied or last haul-out inspection and clean occurred. The WA DOF recommends that, following mobilisation, vessels should spend as few consecutive days as possible in a single location i.e. in ports, or at depths of less than 50m, stationary or at speeds of less than 5 knots.

The degree of environmental compatibility between the departure and arrival regions will influence the risk of IMS colonisation. The greater the overlap between water temperature range, salinity range, water depth range and habitat range, the greater the chance of a successful IMS colonisation at the destination. The highest risk of an IMS establishment will therefore be presented if the vessel is mobilised from, or has predominantly been operating in (since the last clean or application of antifouling paint) an international or domestic region with similar climatic and environmental characteristics to the destination. The Bass Strait region is temperate and therefore vessels being mobilised from temperate climatic regions have the highest risk of a successful IMS. However the vessel will need to transit through tropical waters and and survivorship of marine pests is less on such north-south voyages where the temperature changes are greater than on east west voyages (AQIS, 2009). Note that currently Vessel Check assumes that all ports have similar conditions to allow marine organisms to attach to the hull of a vessel (e.g. water temperature, flow dynamics, salinity, pH).

[1] Criteria for Suitably Qualified Invasive Marine Pest Experts – Guidance Statement, Fisheries Division DPIRD July 2017

[2] Vessel Check Biofouling Risk Assessment Tool – User Guide, August 2015

Based on the above, an introduction of an invasive marine species via biofouling presents the following effects and sensitivities.

Consequently, the impacts are considered to be potentially long-term and with adverse impacts, and have been rated as a Level II or III consequence

The Offshore Installations – Biosecurity Guide issued by DAWR in February 2018 notes that when a vessel that was not subject to biosecurity control when it left Australian territorial waters (such as the HRV) interacts with an installation or petroleum industry vessel (such as the DSV) it can become an exposed conveyance. When the exposed conveyance returns to Australian territorial waters, it then becomes subject to biosecurity control unless it meets the criteria for an exception under the Biosecurity (Exposed Conveyance – Exceptions from Biosecurity Control) Determination 2016. The HRV will comply with Section 17 of the Biosecurity Act 2015 however the return of the HRV to Australian waters and submission of pre-arrival report(s) is outside the scope of petroleum activities described in this EP and has not been discussed further.

5.1.6.3 Controls

- Esso undertakes a vessel pre-mobilisation inspection, including validating the IMS Risk Assessment to ensure vessel biofouling risk is low / acceptable in accordance with the National Biofouling Management Guidance for the Petroleum Production and Exploration Industry (AQIS, 2009).

  For the Seven Eagle the project engaged Biofouling Solutions Pty Ltd[3] to undertake the IMS Risk Assessment and provided the vessel's port history and details of the most recent dry dock antifouling inspection/cleaning in 2016. The initial risk assessment was completed on the basis of the information provided and an in-water inspection was recommended. At the in-water inspection in Nigg Scotland in September 2018, it was determined that the vessel posed a low / acceptable risk to Victorian State waters and the CBA PRP locations and that additional biofouling treatments were not required. A further Vessel Check risk assessment undertaken confirmed that the risk is low in accordance with the National Biofouling Management Guidance for the Petroleum Production and Exploration Industry (AQIS 2009).
- Biofouling Record Book in accordance with IMO guidelines (2011)
- Biofouling Management Plan in accordance with IMO guidelines (2011)
- Any vessel >400 gt (engaged in international voyages) carries a current International Anti-fouling System (IAFS) Certificate, compliant with Marine Order 98 (Marine pollution – anti-fouling systems) 2013 (which gives effect to those parts of the International Convention on the Control of Harmful Anti-fouling Systems on Ships relating to controls).
- Ships of 24 m or more in length but < 400 gt (engaged in international voyages) will carry a Declaration on Anti-fouling Systems, compliant with Marine Order 98 (Marine pollution – anti-fouling systems) 2013.
- In-water equipment will be cleaned (e.g. fouling is removed from streamer joints, collar joints, etc.) prior to initial use in the operational area, in accordance with National Biofouling Management Guidance for the Petroleum Production and Exploration Industry (AQIS 2009).
- Any international shipments destined for CBA PRP activities are cleared through Customs prior to mobilisation to the DSV, in accordance with the DAWR requirements under the Biosecurity

[5] https://www.biofoulingsolutions.com.au/ Managing Director and Principal Scientist previously worked for AQIS and was a co-author on Short Report: Vessel Biofouling Risk Assessment (DAFF 2011) and Australia's biofouling management requirements and other invasive marine pest policies

Act 2015, Export Control Act 1982, and Imported Food Control Act 1992 (http://www.agriculture.gov.au/import/arrival/clearance-inspection).

5.1.6.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
E	II or III	4

5.1.6.5 Demonstration of ALARP

The control measures summarised above are considered sufficient to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

There is potential for a localised, but irreversible, impact to benthic communities from the introduction of IMS from biofouling. However, the CBA PRP activities are being undertaken in an open ocean and deepwater environment (approximately.. 75 m water depth and at a distance of almost 70 km from shore), so that the potential for irreversible impacts is very unlikely to affect biological diversity and ecological integrity.

Further considerations against the remaining Principles of ESD include that there is little uncertainty associated with this aspect as the activities are well known, the cause pathways are well known, and activities are well regulated and managed. It is not considered that there is significant scientific uncertainty associated with this aspect. Therefore, the precautionary principle has not been applied.

Other controls and alternatives were considered, in accordance with Section 4.2, including the application of standard risk mitigation measures, such as dry docking and hull cleaning, to all vessels however this approach would constitute an inefficient application of resources, and would result in substantial additional costs and potential delays to project commencement. Given that the risk of introduction of IMS to the open ocean, deep water title area is low the cost of implementing these controls was considered disproportionate to the reduction in risk achieved.

The IMS RAP decision process determines the need for mitigation measures to further reduce risk on a case by case basis taking into account the outcome of the risk assessment process. It was concluded that all reasonable steps had been taken to ensure that the risk of the Seven Ocean introducing any IMS to Victorian waters is ALARP. Considering the fact that the Seven Eagle had achieved a ‘low / acceptable risk’ level, to justify any additional management measures such as precautionary in-water cleaning or dry-docking was considered disproportionally costly. No stakeholder concerns have been raised for this risk and both DEDJTR and DAWR considered that the project was following best practice. On this basis Esso considers the risk to be ALARP.

5.1.6.6 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.1.7 Vessel Presence and Movements- Interaction with fauna (RA 7)

5.1.7.1 Hazard

The physical presence and movement of vessels within the operational area has the potential to result in injury or mortality of marine fauna.

5.1.7.2 Impact Assessment

A number of cetaceans are known to transit through Bass Strait on annual migration including those listed as either Threatened and/or Migratory under the EPBC Act. The operational area lies within the BIA for foraging for Pygmy blue whales, however as there are no recognised whale feeding, breeding or resting aggregation areas their presence is expected to be transient and occasional and therefore the risk of impacts to cetaceans is considered to be low.

Cetaceans are naturally inquisitive and are often attracted to vessels and offshore facilities. 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 curious and approach ships that have stopped or are slow moving, although they generally do not approach, and sometimes avoid, faster-moving ships (Richardson *et al*. 1995).

Collisions between larger vessels with reduced manoeuvrability and large, slow-moving cetaceans occur more frequently where high vessel traffic and cetacean habitat occurs (Dolman *et al*. 2006). Laist *et al.* (2001) identified that larger vessels with reduced manoeuvrability moving in excess of 10 knots may cause fatal or severe injuries to cetaceans, with the most severe injuries caused by vessels travelling faster than 14 knots. The DSV and HRV have a high level of manoeuvrability and are likely to be travelling at less than 10 knots while in the operational area. While engaged in petroleum activities the DSV will be largely on DP and typically traveling at less than 1 Knot. During this time the likelihood of an impact with a whale is considered to extremely unlikely and the consequence would probably be only minor.

Fur seals are not listed as Threatened or Migratory under the EPBC Act, but are known to forage in the operational area and use offshore platforms as haul out areas, and may potentially be affected by collision with manoeuvring vessels. Grills have been fitted to the forward thrusters of the DSV to reduce the potential for injury and death of seals (and other larger species such as turtles) which could be sucked into the tunnel thrusters.

Peel *et al*. (2016) reviewed vessel strike data for marine species in Australian waters:

- Whales were identified as having interacted with vessels. Of these, interaction with the Humpback whale and the Southern right whale was most frequent.
- Dolphins were also identified as interacting with vessels, with interaction with the Common bottlenose dolphin most common.
- No vessel interactions were reported for the Australian or New Zealand fur seal, although seal injury by boat propellers has been reported, often resulting from the seal ‘playing’ with a boat.

All vessels, when in the field and where practicable, will adopt proximity / speed restrictions near cetaceans as provided in the EPBC Regulations Part 8, Division 8.1: Interacting with cetaceans. There have been no reported recent incidents of cetacean strikes across all Bass Strait operational areas.

The duration of fauna exposure to vessel interference is limited to the duration of CBA PRP activities (expected to be approximately 10 - 14 days).

In the very unlikely event that a fauna strike occurred and resulted in death, it is not expected that it would have a detrimental effect on the overall population.

Consequently, the potential impacts and risks from vessel interaction with fauna are considered to be localised and short-term, as this type of event may result in impact to individuals from a species of recognised conservation value but is not expected to affect the population or local ecosystem function. The consequence has been rated as Level IV.

5.1.7.3 Controls

- Vessel masters will be briefed on ‘caution’ and ‘no approach’ zones and interaction management actions as defined in the EPBC Regulations – Part 8 Division 8.1 Interacting with cetaceans, a vessel master (or delegate) will be on duty at all times
    - Vessels adhere to the distances and vessel management practices of EPBC Regulations - Part 8 Division 8.1 Interacting with cetaceans where practicable.
    - Vessels will travel at less than 6 knots within the caution zone of a cetacean and minimise noise (caution zone is defined as a 150 m radius for dolphins, 300 m for whales and 50 m for seals), where practicable
    - The vessel must not drift closer than 50 m (dolphins and seals) and 100 m (whale) where practicable;

- If whale comes within above limits, the vessel master will, if practicable, disengage gears and let the whale approach or reduce the speed of the vessel and continue on a course away from the whale
- The vessel must not restrict the path of a marine mammal where practicable.
- The vessel must not separate any individual from a group of marine mammals or come between a mother whale and calf or a seal and pup where practicable.
- If the vessel is within the caution zone of a marine mammal the vessel must move at a constant speed that does not exceed 5 knots, avoids sudden changes in speed or direction and manoeuvres the vessel to outside the caution zone if the marine mammal shows any sign of disturbance.

- Additionally, if a vessel is within the caution zone of a marine mammal, the vessel shall not approach a marine mammal from head on, from the rear or be in the path ahead of a marine mammal at an angle closer than 30° to its observed direction of travel.
- Grills are fitted to forward (tunnel) thrusters of the DSV to prevent suction / entrapment.
- All personnel have completed an environmental induction covering the requirements for marine mammal/vessel interaction consistent with EPBC Regulations Part 8 Division 8.1 and are familiar with the requirements. This includes a requirement to notify the bridge and EAPL vessel team if marine mammals are sighted in the caution zone.
- The EAPL vessel management team will be trained in the requirements of the EPBC Regulations - Part 8 Division 8.1 and marine fauna and observations of megafauna will be included in the daily report.
- Any injury to, or mortality of, an EPBC Act Listed Threatened or Migratory Species will be recorded on the National Ship Strike database within 72 hours (https://data.marinemammals.gov.au/report/shipstrike).

5.1.7.4 Risk Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.1.7.5 Demonstration of ALARP

Compliance with the Environment Protection and Biodiversity Conservation Regulations 2000 and Victorian Wildlife (Marine Mammals) Regulations 2009 (DSE 2009b) are considered sufficient control measures to reduce the impacts and risks associated with this hazard to ALARP as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

The risk associated with fauna strike is well managed via legislative control measures that are considered industry best practice. These are well understood and implemented by the industry. During stakeholder consultation, no objections or claims were raised regarding physical presence.

Cetaceans are likely to occur within the operational area, but given their probable behavioural avoidance of the vessels, collision risk is considered low. Foraging fur seals may occur in the operational area, however interaction between this species and vessels is low. The use of guards and grills fitted to the side thrusters of vessels further reduces the potential for injury or death of seals and other larger fauna species. Because the potential impacts from physical presence of the DSV and support vessels is limited and as there is likely to be limited interaction with marine fauna in the defined operational area, ALARP Decision Context A should apply. No further controls or alternatives have been identified. On this basis Esso considers the risk to be ALARP.

The potential impact associated with this aspect is limited to individual fauna mortality, which is not considered as having the potential to affect biological diversity and ecological integrity. The activities are not considered as having the potential to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required.

5.1.7.6 Demonstration of Acceptability

For this hazard the residual risk was assessed as a Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4-3.

5.1.8 Vessel Combustion Equipment (RA 8)

5.1.8.1 Hazard

Air emissions will be generated by the project vessels from internal combustion engines (including all equipment and generators) during the CBA PRP activities. Emissions will include SO2, NOx, ozone depleting substances, CO_2, particulates and Volatile Organic Compounds (VOCs).

5.1.8.2 Impact Assessment

Fuel combustion has the potential to result in localised, temporary reduction in air quality in the environment immediately surrounding the discharge point and contribute to the global greenhouse gas effect.

Potential receptors above the sea surface in the area immediately surrounding the vessels that may be exposed to temporarily reduced air quality include seabirds and marine megafauna that surface for air (e.g. cetaceans and marine turtles). The operational area is within known foraging BIAs for the Pygmy blue whale, and some seabird species. Emissions will be low in volume and due to the highly dispersive offshore environment, emissions will quickly dissipate into the surrounding atmosphere.

The greenhouse gas contribution as a result of air emissions will also be low, due to the short duration of the CBA PRP program, and insignificant on a global scale. Therefore no further evaluation of this aspect has been undertaken.

Consequently, the potential impacts and risks from air emissions are considered to be localised, as this type of event may result in a localised short-term impact to species of recognised conservation value but is not expected to affect the population or local ecosystem function, and have been rated as a Level IV consequence.

5.1.8.3 Controls

- Low sulphur diesel fuel used as fuel source to comply with Marine Order 97 (Marine pollution prevention – air pollution) 2013 (which gives effect to MARPOL Annex VI (Regulations for the Prevention of Air Pollution from Ships) (i.e. fuel oil with sulphur content less than 3.50% mass/mass).
- Preventive maintenance program in place for fuel combustion equipment to maximise efficiency.
- Vessels > 400 tonnes hold a current International Air Pollution Prevention (IAPP) Certificate indicating that they meet the requirements of MARPOL Annex VI.
- Vessels >400 tonnes implement a Ship Energy Efficiency Management Plan (SEEMP) in accordance with MARPOL Annex IV.
- Vessels with diesel engines>130 kW must be certified to meet prescribed NOx emission levels as required by Regulation 13 of MARPOL Annex VI (i.e. have a valid Engine International Air Pollution Prevention (EIAPP) certificate).
- Incineration of waste onboard DSV in accordance with MARPOL Annex VI requirements.

5.1.8.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
B	IV	4

5.1.8.5 Demonstration of ALARP

Atmospheric emissions from vessel fuel combustion equipment is a common occurrence both nationally and internationally. Emissions from the project will be low in comparison to other marine traffic, and will be reduced to below measurable levels in close proximity to the release location.

Managing the risks from atmospheric emissions is well understood with good practice controls that are understood and generally well implemented by the industry. During stakeholder consultation, no objections or claims regarding atmospheric emissions were made. Given the limited potential impact ALARP Decision Context A should apply.

Compliance with the requirements of MARPOL Annex VI are considered sufficient control measures to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

Other controls and alternatives were considered including alternative sources of energy, such as solar powered generators, however these would require considerable space (which is limited on deck) to meet the operational area power demands and are not considered practicable for most offshore applications due to technical feasibility. In addition, the costs of implementing these measures are grossly disproportionate to the reduction in risk.

No stakeholder concerns have been raised for air emissions. The potential impact associated with this aspect is considered localised and temporary, with full recovery to background levels once the activity ceases. Consequently, this aspect is not considered as having the potential to affect biological diversity and ecological integrity. Therefore, no further evaluation against the Principles of ESD is required.

There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.1.8.6 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. These emissions represent an insignificant contribution to global greenhouse gas emissions and the environmental impact is therefore considered acceptable. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.1.9 Vessel Presence - Interference with other marine users (RA 9)

5.1.9.1 Hazard

The physical presence of the DSV and HRV undertaking the activity may interfere with shipping and fishing activities.

5.1.9.2 Impact Assessment

Commercial fishing

The operational area intersects a number of Commonwealth managed fisheries. The presence of the DSV and HRV has the potential to cause some disruption to fishing activities within the operational area for a period of approximately 10 to 14 days. Review of available fishing literature and feedback from fisheries stakeholders indicates that fishing does occur in the operational area.

For the majority of the project duration the DSV will be stationed adjacent to offshore facilities where exclusion zones permanently apply. During the installation between the CBA and HLA platforms the Seven Eagle may restrict fishing vessels from operating over the pipeline, however, any spatial conflict and impact with fisheries is expected to be very minor.

With notification controls implemented, it is expected that fishing disruption is unlikely to occur during the CBA PRP and on this basis the residual risk is assessed as low.

Recreational Fishing

Recreational fishing is generally concentrated inside the Gippsland Lakes or along the Ninety Mile Beach coastline. As Bass Strait is relatively shallow, the water currents can create unpredictable seas reducing the number of recreational boats from venturing into Bass Strait from the shore. Given the Gippsland Lakes are well outside the operational area the risk of interference with recreational anglers is also considered low.

Shipping

The Gippsland Basin area carries significant shipping activity and shipping volumes. The operational area lies within the ATBA. This excludes, without permission, entry of all ships over 200 tonnes (gross) and restricts commercial vessel traffic to the shipping channels to the east and south of the area. Five hundred metre exclusion zones are also applied around all the operational platforms.

This aspect is not applicable to KEF. Fisheries stakeholders raised one concern relating to the mid-point join on the new flexible pipeline, this has been addressed in 5.2.4. No further evaluation against the principles of ESD is required.

Consequence determined to be IV based on social impact only.

5.1.9.3 Controls

- Consultation with relevant stakeholders was undertaken during EP development and key stakeholders will be kept updated with project timeframes.
- SMS alerts issued to SETFIA fishing contacts to raise the awareness of the project activities, including when and where they are taking place.
- Pre-start notifications:
    - The Australian Hydrographic Society (AHS) will be notified no less than four working weeks before operations commence to enable generation of navigational warnings, including Notice to Mariners (NTM), to be published.
    - AMSA's Joint Rescue Coordination Centre (JRCC) will be notified 24–48 hours before operations commence to enable AMSA to distribute Auscoast warning.
    - Relevant Stakeholders will be notified of activities approximately one month and again one week prior to commencement
- Compliance with Marine Orders 21 and 30 relating to safety of navigation and prevention of collisions.

5.1.9.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.1.9.5 Demonstration of ALARP

The proposed control measures summarised above are considered sufficient to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

Fisheries have coexisted with petroleum operations in the Gippsland Basin for decades, and the associated risks are well understood by both parties. A tribunal is in place for addressing genuine/validated losses incurred by commercial fisheries impacted by oil and gas equipment not marked on navigational charts and outside the petroleum safety zones. Purchasing of available fishing licences was rejected due to the short duration of the campaign, and this was not practicable or commercially feasible, nor likely to be well received by fisheries stakeholders.

Although fishers may be impacted along the pipeline route for the duration of the project, disruption will be minimised through consultation and notification of the activity and no concerns have been raised to date.

A Notice to Mariners will be issued prior to mobilisation, as well as ongoing communication with the commercial fishing community. Under an agreement with SETFIA, fisheries will be notified of project activities through a SMS message system, which has proven to be effective in the past. Other controls and alternatives were considered, in accordance with Section 4.2, such as undertaking project activities during daylight hours only. However this would result in extended project duration and substantial additional costs. With the implementation of controls such as Marine Orders 21 and 30 and notification of stakeholders, the risk of interference with other users is considered low.

The operational area is located within the ATBA and therefore entry of commercial shipping without permission is prohibited, however some interference with commercial fishing is possible. This is a Type B ALARP decision. The risk associated with marine user interactions is well managed via legislative control measures that are considered industry best practice. These are well understood and implemented by the industry. Esso considers the risk to be ALARP on this basis.

5.1.9.6 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and stakeholder concerns have been addressed, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.2 Pipeline Repair Activities

5.2.1 Riser Cutting (RA 10)

5.2.1.1 Hazard

During cutting of the CBA and HLA platform risers to enable fitting of the mechanical end connectors and reducer spools approximately 1m^3 of inhibited seawater will be released to the marine environment. The ends of the redundant section of pipeline will be plugged to prevent further seawater egress (or ingress) during in-situ ‘wet storage’ (Section 5.2.5).

5.2.1.2 Impact Assessment

In 2014 prior to shut-in the pipeline was pigged and flushed to remove free hydrocarbons. Residual hydrocarbons would over time have risen to the top of the riser and will not be released as the cut will take place at about 70m below sea surface. Due to the presence of the hole in the pipeline there will be no pressure difference between the pipeline contents and the environment, the release rate will therefore be very low. When the cut pieces are removed the contents of the short cut pieces are however likely to be displaced. The volume of these cut pieces is around 0.35m^3 and it is expected that this will be released as the pipe is cut and moved along with some other water from within the pipe. The volume of discharge has been conservatively estimated as 1m^3 which is equivalent to approximately three time the volume of the 5m length of riser which will be removed (i.e. $V = \pi r^2 h$ where r = radius of 0.15m and h = cut length of 5m).

The 1m^3 of inhibited seawater which may be released to the marine environment contains corrosion inhibitor Baker Hughes CRW24340, initially dosed at 5000 ppm, and a Nalco Champion Fluorescein liquid dye. The dye was dosed at around 500 ppm and based on its Gold OCNS ranking is considered to present acceptably low risk. CRW24340 is not on the OCNS list and contains a number of chemicals that could pose more of an impact or risk and hence the release of inhibited water containing CRW24340 has been further assessed.

The three-dimensional plume behaviour model, MUDMAP, was used to simulate the far-field mixing and dispersion of a discharged inhibited water plume containing CRW2430. The MUDMAP system is based on a conservative tracer (no reaction or decay), constituting a “worst case” scenario (RPS 2018).

A discharge was modelled from the pipeline at the seabed (74m depth), and consisted of 3.5 m^3 of seawater mixed with corrosion inhibitor (CRW24340), discharged over a 20-minute period, to reflect the quantity that could be discharged from the existing hole when pigging / flushing the pipeline. Pigging / flushing the pipeline is no longer proposed (see Section 5.2.5). The discharge from the risers will be approximately one third of the modelled volume (estimated at 1m^3 see above), vertical dispersion will be greater as the seabed impacts will be reduced and is likely to occur over a longer time frame as the riser is cut, therefore the predicted results are considered conservative for this discharge scenario.

The CRW24340 corrosion inhibitor chemical that will be discharged along with the water from the pipeline consists of several different components as shown below.

Table 5-2 CRW2430 Composition

CRW24340 composition	Wt% In whole CRW24340	OCNS/CHARM rating
Water	30 – 60	-
Ethoxylated amine	10 - 30	
2-(2-Butoxyethoxy) ethanol	5 - 10	
Quaternary ammonium compounds	8	
Ammonium bisulphite	10 – 30	E
Propylene glycol	5 – 10	Gold

The following table presents the toxicological information available for these chemicals.

Table 5-3 CRW2430 Toxicological information

Substance Test	Species	Test End Point	Result mg/L
Ethoxylated amine	Skeletonema costatum	EC50	0.2
	Acartia tonsa	LC50	1.1
	Cyprinodon variegatus	LC50	>0.1
	Corophium volutator	LC50	568
	Skeletonema costatum	NOEC	0.37
	Acartia tonsa	NOEC	0.5
	Cyprinodon variegatus	NOEC	>0.1
	Corophium volutator	NOEC	50
2-(2-Butoxyethoxy) ethanol	Scenedesmus subspicatus	EC50	>100
	Daphina Magna	LC50	>3000
	Various fish	LC50	>1000
Quaternary ammonium compounds	Skeletonema costatum	EC50	0.2
	Acartia tonsa	LC50	0.6
	Scophthalmus maximus	LC50	2.1
	Corophium volutator	LC50	75.9
	Skeletonema costatum	NOEC	0.05
	Acartia tonsa	NOEC	0.1
	Scophthalmus maximus	NOEC	1
	Corophium volutator	NOEC	50
Propylene Glycol	Skeletonema costatum	EC50	19100
	Acartia tonsa	LC50	>10000
	Cyprinodon variegatus	LC50	23800
	Skeletonema costatum	NOOEC	<5300
	Acartia tonsa	NOOEC	>10000
	Cyprinodon variegatus	NOOEC	<16000

Based on the CRW24340 Environmental Profile (Baker Hughes, 2010), the main component of interest in terms of environmental criteria is the Ethoxylated amine component (as this is both the most concentrated and most toxic component). Baker Hughes confirmed that the level of Ethoxylated amine would be close to 10% of the CRW24340 chemical, and this was therefore adopted for the far field

dispersion study. As the CRW24340 was mixed with seawater in the pipeline at a concentration of 5,000 ppm, the Ethoxylated amine concentration of the discharged seawater mix would therefore be 10% of that concentration (500 ppm) if there had been no consumption or degradation of the chemical. All the components are readily or inherently biodegradable and none of the substances are considered to bioaccumulate as per OCNS guidelines.

Figure 5-1 below shows the environmental criteria thresholds for Ethoxylated amine, including 10x the NOEC; the EC50; the acute pelagic Predicted No Effect Concentration ($PNEC_{pelagic\ acute}$); the No Observed Effect Concentration (NOEC); and the $PNEC_{pelagic}$, all calculated by RPS (RPS 2018). Also shown are the number of dilutions required to reach each of the thresholds (based on the initial discharge concentrations).

Component	Threshold	Environmental Thresholds and Required Dilution to meet Thresholds.	Value
Ethoxylated Amine	10x NOEC	10x NOEC Threshold (ppm)	1
		Number of dilutions required to meet 10x NOEC (x:1)	500
	EC50	EC50 Threshold (ppm)	0.2
		Number of dilutions required to meet EC50 (x:1)	2,500
	$PNEC_{pelagic\ acute}$	$PNEC_{pelagic\ acute}$ Threshold (ppm)	0.10
		Number of dilutions required to meet $PNEC_{pelagic\ acute}$ (x:1)	5,000
	NOEC	$NOEC_{pelagic\ acute}$ Threshold (ppm)	0.10
		Number of dilutions required to meet PNEC (x:1)	5,000
	$PNEC_{pelagic}$	$PNEC_{pelagic}$ Threshold (ppm)	0.01
		Number of dilutions required to meet $PNEC_{pelagic}$ (x:1)	50,000

Figure 5-1 Environmental threshold criteria and dilution of discharge components required to meet thresholds (RPS 2018)

Table 5-4 Far Field Model Results (based on Ethoxylated amine component of discharge) (RPS 2018)

Criteria	Weak Currents (Slack Tide)	Strong Currents (Mid Tide)
Distance to 10x NOEC threshold (m)	< 5	< 5
Distance to EC50 threshold (m)	22	22
Distance to $PNEC_{pelagic\ acute}$ threshold (m)	52	47
Distance to NOEC threshold (m)		
Distance to $PNEC_{pelagic}$ threshold (m)	316	231
Maximum time before dropping below $PNEC_{pelagic\ acute}$ threshold (min)	23	23
Peak concentration of Ethoxylated Amine, adjacent to discharge location (mg/L, or PPM)	0.38	0.44
Peak concentration of Ethoxylated Amine, 100 m from discharge location (mg/L, or PPM) [PPB]	0.047 [47]	0.033 [33]
Peak concentration of Ethoxylated Amine, 500 m from discharge location (mg/L, or PPM) [PPB]	<0.006 [<6]	<0.001 [<1]

Table 5-4 shows the maximum horizontal distances that the plume may travel (when discharged under both weak and strong tidal currents) for concentrations of Ethoxylated amine above the different environmental criteria. Also included is the time until the concentrations of Ethoxylated amine dropped below the $PNEC_{pelagic\ acute}$ threshold, which was predicted to be 23 minutes – or 3 minutes after the discharged ceased, and at a distance of 52 m (weak currents) or 47 m (strong currents) from the discharge location.

Under both conditions vertical mixing was limited due to the negligible buoyancy difference between the discharge and the surrounding waters. The modelling showed that concentrations of Ethoxylated amine exceeding the PNEC $_{pelagic\ acute}$, the NOEC and the EC50 would be constrained to the lower 2 m, and that concentrations exceeding the PNEC $_{pelagic}$ may rise up to 4 m above the seabed.

Based on the dispersion modelling for the Ethoxylated amine the impact of the other chemicals has also been assessed at various distances from the modelled leak.

Table 5-5 Far Field Results all chemicals within CRW24340

Chemical	22m	52m	100m	500m
Ethoxylated amine	at EC50 and 2 x $PNEC_{Pelagic}$	at $PNEC_{Pelagic}$	0.47 x $PNEC_{Pelagic}$	0.06 x $PNEC_{Pelagic}$
2-(2-Butoxyethoxy)ethanol	0.02 $PNEC_{Pelagic}$	0.01 $PNEC_{Pelagic}$	0.05 x $PNEC_{Pelagic}$	0.01 x $PNEC_{Pelagic}$
Quaternary ammonium compounds	at EC50 and 4 x $PNEC_{Pelagic}$	2 x $PNEC_{Pelagic}$	0.94 x $PNEC_{Pelagic}$	0.12 x $PNEC_{Pelagic}$
Propylene glycol	$4x10^{-5}$ x $PNEC_{Pelagic}$	$2x10^{-5}$ x $PNEC_{Pelagic}$	$9x10^{-6}$ x $PNEC_{Pelagic}$	$1x10^{-6}$ x $PNEC_{Pelagic}$
Cumulative	2 x EC50 and 6 x $PNEC_{Pelagic}$ cumulative	3 x $PNEC_{Pelagic}$ cumulative	1.3 x $PNEC_{Pelagic}$ cumulative	0.2 x $PNEC_{Pelagic}$ cumulative

These concentrations will rapidly drop after the release ceases and in the modelling the concentrations dropped below the Ethoxylated amine $PNEC_{Pelagic}$ within 23 minutes. Both the initial EC50/LC50 and NOEC values are derived from long term tests where organisms are exposed for periods typically between 48 and 96 hrs and hence the dose of exposure can also be reviewed as a guide to potential impact. Leaks and discharges while cutting the pipeline will be short duration events and hence continued exposure to these chemicals for more than a few hours is very unlikely. Due to the likely duration of the release and that the tides and currents will alter direction the dose that environmental receptors shall receive will be less than those exposed in the toxicological tests.

The cumulative risk from all chemicals has been assessed by assuming that all impacts are additive this indicates that even if exposed to the chemicals for the duration of an EC50/LC50 test there would also be no predicted environmental impact beyond 500m.

Bioaccumulation data is only relevant for organic substances and organo-metals and is not required for surface active substances.

Table 5-6 Bioaccumulation Potential

Substance	Log P_{ow}
Propylene glycol	-0.92
2-(2-Butoxyethoxy)ethanol	0.29

As per OCNS guidelines, a result of Log P_{ow} <3 shows that the substance is considered non-bioaccumulative. Neither of the above substances are considered to bioaccumulate.

Table 5-7 Biodegradation

Ethoxylated amine		
Day	**Test Substance (%)**	**Reference Substance (%)**
0	1	85
5	37	101
15	37	101
28	39	102

2-(2-Butoxyethoxy)ethanol		
Day	**Test Substance (%)**	**Reference Substance (%)**
5	5	61

14	61	88
20	75	100
28	75	100

Quaternary ammonium compounds		
Day	**Test Substance (%)**	**Reference Substance (%)**
5	0	86
13	65	93
20	100	93
28	100	93

Propylene glycol		
Day	**Test Substance (%)**	**Reference Substance (%)**
5	64	73
15	68	85
28	93	93

As per OCNS guidelines, after 28 days a substance is considered to readily biodegrade at >60%, hence the 2-(2-Butoxyethoxy)ethanol, quaternary ammonium compounds and propylene glycol are all readily biodegradable. The ethoxylated amine is considered inherently biodegradable with a result of >20% and < 60%.

All the components are therefore readily or inherently biodegradable and none of the substances are considered to bioaccumulate as per OCNS guidelines.

The discharge of the inhibited water could cause temporary and localised changes to water quality, which may impact upon marine ecosystems. Modelling of a release at the seabed has demonstrated that the area exposed to chemical concentrations at levels of EC50 and where benthic and pelagic fauna may be impacted (ignoring the short duration of the event) will be limited to a plume of length 22m and a width of a few meters from the release location.

Given the low volume and low concentrations involved and the assimilative/dispersive nature of the receiving environment, it is considered very unlikely that the discharge of the corrosion inhibitor in the inhibited water will affect water quality to the extent that impacts on marine fauna will occur. The discharge from cutting the riser is therefore anticipated to have little or no impact on the receiving environment.

Consequently the consequence level was rated a Level IV impact.

This risk has no impact on KEFs. No stakeholder concerns have been raised on RA10. No further evaluation against the principles of ESD is required.

5.2.1.3 Controls

- Dispersion modeling demonstrates that the release of inhibited seawater presents a limited impact and poses a low risk.
- Plugs will be installed in the redundant CBA300 sections to limit further release of inhibited water.

5.2.1.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.2.1.5 Demonstration of ALARP

To demonstrate that the impacts and risk associated with this hazard have been reduced to ALARP in accordance with Section 4.2, other controls and alternatives were considered.

Local containment by the divers is not considered practical as this would involve considerably more complexity, and difficulty, and introduce substantially increased safety risk.

Flushing the pipeline was examined but was determined not to be practicable, the pressure required to flush the pipeline was likely to result in a greater discharge of inhibited water (approx. 3.5m^3) from the existing hole, could have resulted in more holes being generated, resulted in a stuck pig and a number of other issues that are described further in Section 5.2.5.

Given the small volumes of low toxicity water release and rapid dispersion in the high energy environment the potential impact associated with this discharge is Category 4 (low risk).

No stakeholder objections or claims were raised with regards to this activity. ALARP Decision Context A applies. There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.2.1.6 Demonstration of Acceptability

For this hazard the residual risk was assessed as a Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.2.2 Connection of New Flexible (RA11)

5.2.2.1 Hazard

The new flexible pipeline will be pre-filled with inhibited demineralised water (containing a red fluorescent dye (RX-9022) and an oxygen scavenger (RX-202)) and fitted with end flanges prior to transport on-board the Seven Eagle DSV to Bass Strait. When the end flanges are removed during tie in an estimated 1m^3 of the treated demineralised water will be released to the marine environment at each riser. During the installation and tie-in biocide, oxygen scavenger and dye sticks will be added by the divers to ensure the contents of the pipeline remain inhibited and corrosion of the riser is prevented.

5.2.2.2 Impact Assessment

Approximately 1m^3 of inhibited water will be released to the marine environment during each tie-in as the end flanges are taken off the flexible pipeline and before it can be connected to the risers. The 1m^3 is an estimate, the pressures will be equalised before the divers remove the end flanges and any subsequent release will be therefore be limited and very slow. All chemical additives will be CHARM HQ Band Gold or Silver or OCNS E or D ranking, the chemicals which may be used are provided below.

Product	CHARM HQ Band / OCNS Rating	Function and description
RX-202	E	Oxygen Scavenger dosed at 650ppm for an ingress of 1m^3
RX-9022	Gold	fluorescent dye, pipeline hydrotest chemical
RX-1228	Gold	biocide stick
RX-5207	Gold	oxygen scavenger stick
RX-9034A	Gold	dye stick

Additional inhibited water will be added from the platform topsides for the hydro-test and following this approximately 1.5m^3 of water will be disposed of during depressurisation via the platform topsides in line with the existing Central Fields EP.

The discharge of inhibited water can cause temporary and localised changes to water quality, which may impact upon marine ecosystems.

The Esso Chemical Selection Procedure (Section 9.9.1) defines the process for assessment of chemicals during CBA PRP activities. All chemicals planned for discharge must be assessed and approved in accordance with the Esso Chemical Selection Procedure prior to use. Where a chemical is initially assessed as PLONOR or CHARM HQ Band Gold or Silver or OCNS E or D ranking, no further

assessment is required. For chemicals with a lower ranking, further steps for assessment are provided in the procedure.

Based on the dispersion modelling of similar quantities of fluid in section 6.2.1 the risk from a small quantity of dye and oxygen scavenger being released with the inhibited water is negligible. Any impacts will be contained to the immediate vicinity of the pipeline ends and will also be temporary in nature.

Given the low volume and low concentrations involved and the assimilative/dispersive nature of the receiving environment, it is considered very unlikely that the discharge of these low toxicity additives will affect water quality to the extent that impacts on marine fauna will occur. The discharge is anticipated to have little or no impact on the receiving environment.

Based on the low toxicity of the chemical additives and short-term nature of the exposure the following effect and sensitivity dimensions were selected

Consequently the consequence level was rated Level IV impact.

This risk has no impact on KEFs. No stakeholder concerns have been raised on RA11. No further evaluation against the principles of ESD is required.

5.2.2.3 Controls

- Use of low toxicity constituents, CHARM HQ Band Gold / Silver or OCNS E / D rated or equivalent, which meet Esso's Chemical Selection Procedure (Section 9.9.1).
- Flexible pipeline end flanges will only be removed once pressure equalized and the pipeline is ready to be connected to the riser.

5.2.2.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.2.2.5 Demonstration of ALARP

Esso's Chemical Selection Procedure is considered a sufficient control measure to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

To demonstrate that the impacts and risk associated with this hazard have been reduced to ALARP in accordance with Section 4.2, other controls and alternatives were considered. Local containment by the divers is not considered practical as this would involve considerably more complexity, and difficulty, and introduce substantially increased safety risk. Not adding a dye or chemicals has also been considered but this would prevent critical leak detection during installation and could lead to unacceptable corrosion of the pipeline or riser. The number and type of additives required has been minimised through the use of demineralised water rather than seawater for pipeline pre-fill, and the volume to be released will be reduced to a low as practicable for each subsea tie-in.

The discharge of fluorescent dyes and chemical additives such as corrosion inhibitor, biocide and oxygen scavenger during pipeline installation is a common activity, both nationally and internationally. Given the small volumes of low toxicity demineralised water release and rapid dispersion in the high energy environment the potential impact associated with this discharge is Category 4 (low risk).

No stakeholder objections or claims were raised with regards to this activity. ALARP Decision Context A applies. There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.2.2.6 Demonstration of Acceptability

For this hazard the residual risk was assessed as a Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.2.3 Installation of New Flexible (RA12)

5.2.3.1 Hazard

Laying the new flexible pipeline on the sea floor, and the installation of stabilisation mattresses may cause some disturbance of the seabed and potentially minor physical impacts to the associated benthic organisms.

5.2.3.2 Impact Assessment

Seabed disturbance has the potential to impact benthic receptors, through crushing / smothering or a temporary increase in water column turbidity (close to the seafloor).

Any impact will be limited to the immediate vicinity of the new flexible pipeline, and thus the extent of potential impact is considered to be quite localised. The area of benthic habitat expected to be directly disturbed by planned activities is limited to the footprint of the pipeline and approximately 15m^2 per mattress. The number and placement of mattresses has been determined based on the pipeline stability analysis that ensures the pipeline remains stable under the design metocean conditions in accordance with DNV-RP-F109 (2010) On-bottom stability design of submarine pipelines. Four mattresses will be positioned at the crossing over the existing redundant CBA 300 and existing HLA100 fuel gas pipeline, four at the HLA platform end and one at the CBA platform end. There will be 10 mattresses available on the DSV. In the event of damage to one of the other mattresses the tenth will be required (still making a total of nine laid). The tenth may also be installed at the pipeline crossing should it be determined that the seabed / conditions warrant this. All mattresses are planned to be installed within the existing HLA and CBA petroleum safety zones and hence there will be no new snag points for commercial fishermen.

Movement of the pipeline along the seafloor during positioning (pulling-in) will result in additional disturbance, nonetheless, the total disturbance area is expected to be relatively small. The flexible ends will be laid within 25m of their tie in locations.

The benthic habitat within the operational area is characterised by a homogenous flat, soft sediment and shell/rubble seabed, supporting infauna communities. These seabed sediments and infauna are widespread throughout the Gippsland Basin and any environmental impact caused by damage to small areas of seabed and associated communities would be mitigated by ubiquitous distribution of similar habitat in the region. Furthermore it is expected that recolonisation and recovery would occur relatively quickly following any disturbance resulting in no long term impacts to the infauna communities (Dernie *et al*., 2003).

Based on the low toxicity of the chemical additives and short-term nature of the exposure the following effect and sensitivity dimensions were selected

Consequently the consequence level was rated Level IV impact.

There are no KEFs within the affected area. No stakeholder concerns have been raised on RA12. No further evaluation against the principles of ESD is required.

5.2.3.3 Controls

- Approved lifting and installation procedures
- Certified lifting equipment is maintained in compliance with the Preventative Maintenance System
- Maximum of ten mattresses to be laid and all laid with existing PSZs.
- Pipeline ends will be laid within 25m of the platforms to minimise seabed disturbance during pulling-in of the ends to enable connection
- No anchoring of DSV or HRV

5.2.3.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.2.3.5 Demonstration of ALARP

The residual risk resulting from this activity is considered to be low (Category 4), the proposed control measures are considered to be sufficient to reduce the impacts and risks associated with this hazard to ALARP as the nature of this risk is well understood, and the activity is a well-established practice. The mattresses themselves prevent seabed disturbance by preventing lateral movement of the pipeline across the seafloor. Since the potential impact associated with this aspect is limited in extent to benthic communities, which are known to recover and recolonise disturbed seabed with time, this aspect is not considered as having the potential to affect biological diversity and ecological integrity. Therefore, no further evaluation against the Principles of ESD is required.

Seabed disturbance from offshore activities is a common occurrence both nationally and internationally. The area of disturbance is known, and benthic habitat within the operational area is characterised by homogenous soft sandy sediment. Managing the risks from pipe-lay activity is well understood with good practice controls that are understood and generally well implemented by the industry. ROV footage in Bass Strait shows that the seabed rapidly recovers following disturbance such as pipeline installation. During stakeholder consultation, no objections or claims regarding seabed disturbance were made. ALARP Decision Context A applies. On this basis Esso considers the risk to be ALARP.

Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.2.4 Presence of New Flexible Pipeline (RA13) – Interference with other marine users

5.2.4.1 Hazard

The physical presence of the new flexible pipeline (to be designated CBA150) adjacent to the ‘wet stored’ redundant pipeline may interfere with fishing and shipping activities.

5.2.4.2 Impact Assessment

Commercial fishing

The new flexible pipeline will be laid in close proximity and to the west side of the the redundant pipeline. Any over-length will be installed within the existing CBA 500m PSZ. All stabilisation / concrete mattresses will be installed within the existing platform exclusion zones and furthermore the pipeline has been designed and manufactured without a mid-point join to eliminate any snagging hazards outside the exclusion zones.

The redundant pipeline will remain in-situ. A visual pipeline inspection undertaken in 2014 (Fugro, 2014) indicated that more than 95% of the CBA300 pipeline was either partially or mostly buried and approximately half the length of pipeline was less than 25% exposed. It is anticipated that the new flexible pipeline will also ‘self-bury’ over time.

A number of Commonwealth managed fisheries are active in the vicinity of the CBA pipeline, however once installation of the new flexible pipeline is completed it is not envisaged that there will be any further disruption to fishing activities. Commercial fishermen are known to target pipeline routes as they can attract fish species, on this basis the residual risk is assessed as low.

Recreational Fishing

Recreational fishing is generally concentrated inside the Gippsland Lakes or along the Ninety Mile Beach coastline. As Bass Strait is relatively shallow, the water currents can create unpredictable seas reducing the number of recreational boats from venturing into Bass Strait from the shore. Given the Gippsland Lakes are a considerable distance from the CBA pipeline the risk of interference with recreational anglers is also considered low.

Shipping

The Gippsland Basin area carries significant shipping activity and shipping volumes. The CBA300 pipeline route lies within the ATBA. This excludes, without permission, entry of all ships over 200 tonnes (gross) and restricts commercial vessel traffic to the shipping channels to the east and south of the area. Five hundred metre exclusion zones are also applied around all the operational platforms.

Consequence determined to be IV on social impact only.

This aspect is not applicable to KEFs. Fisheries stakeholders raised one concern relating to the mid-point join on the new flexible pipeline, this has been addressed. No further evaluation against the principles of ESD is required.

5.2.4.3 Controls

- New flexible pipeline laid adjacent to the existing CBA300 pipeline
- All mattresses placed within the existing platform PSZs.
- Existing CBA300 pipeline location is shown on AHS nautical charts and AHS will be notified of any necessary amendments.
- Pipeline designed and fabricated without a mid-point join to eliminate snagging hazards outside the platform existing PSZs.

5.2.4.4 Risk Ranking

Likelihood	Consequence	Risk Ranking
E	IV	4

5.2.4.5 Demonstration of ALARP

The proposed control measures summarised above are considered sufficient to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

Fisheries have coexisted with petroleum operations in the Gippsland Basin for decades, and the associated risks are well understood by both parties. A tribunal is in place for addressing genuine/validated losses incurred by commercial fisheries impacted by petroleum infrastructure/installations not marked on nautical charts and outside the Petroleum Safety Zones.

The CBA300 pipeline route is located within the ATBA and therefore entry of commercial shipping without permission is prohibited. The design of the new flexible pipeline without a mid point join, and its location adjacent to the already partially buried redundant pipeline will preclude any interference with commercial fishing. This is a Type A ALARP decision. The risk associated with marine user interactions is well managed via legislative control measures that are considered industry best practice. These are well understood and implemented by the industry. Esso considers the risk to be ALARP on this basis.

5.2.4.6 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and stakeholder concerns have been addressed, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.2.

5.2.5 Presence of redundant CBA300 pipeline (RA 14)

5.2.5.1 Hazard

The CBA300, filled with inhibited seawater, will be plugged and remain in-situ. Presence of the current hole and deterioration of the pipeline has the potential to result in minor releases of inhibited water to the marine environment. The physical presence of the CBA300 pipeline adjacent to the new flexible CBA150 pipeline will also continue to impact fishing activities.

5.2.5.2 Impact Assessment

Release of inhibited seawater

The CBA300 steel pipeline, which is filled with inhibited water to prevent internal pipeline corrosion, will be plugged prior to in-situ 'wet storage'. There is one hole located at the bottom of the pipeline (the '6 o'clock' position) on the seabed within the Cobia petroleum safety zone, with the pipeline no longer in operation and through the use of the CRW24340 corrosion inhibitor in the inhibited water the likelihood of further internal corrosion is considered unlikely. With the contents of the pipeline in equilibrium with the surrounding environment no significant release will occur, the only discharge will be via local diffusion and any flow/seepage would need to be bi-directional and in effect the pipeline may breath.

Dispersion modelling indicates that a discharge of 3.5m^3 at the seabed will be rapidly dispersed and that impacts will be limited to the immediate vicinity of the release. The release rate due to diffusion will be at least several orders of magnitude less than this and as such the modelling provides a very conservative comparison. As the majority of the pipeline is partially buried and the current hole and areas of potential corrosion, where a future hole could occur are at the 6 o'clock position, this would result in any release being discharged within the sea floor and into the sediment.

The main chemical within the inhibited water, CRW24340 contains chemicals that are readily or inherently biodegradable and none of the substances are considered to bioaccumulate as per OCNS guidelines. The ethoxylated amine and quaternary ammonium compounds are both surfactants. At the anticipated diffusion rates these two chemicals are expected to attach and coat sand and sediment particles within the seabed, where they will then biodegrade and breakdown. The ammonium bilsulphite and propylene glycol will likely remain in solution. The ammonium bilsuphite is an oxygen scavenger and will break down on exposure to dissolved oxygen in the water. The propylene glycol will be broken down by microbial breakdown. The ammonium bilsuphite will reduce oxygen levels via chemical breakdown and the propylene glycol could also lead to an increase in biological oxygen consumption. However given the low concentrations, low release rate and that they will be rapidly dispersed once in the water column, these two components are unlikely to pose any significant impact beyond the immediate vicinity of the release. The 2-(2-Butoxyethoxy)ethanol will also likely remain within the water, given the low initial concentration and low toxicity of the chemical it is not expected to be toxic to aquatic life beyond the immediate vicinity of the hole.

The impact of diffusion / minor seeps of inhibited fluid from the pipeline will therefore be highly localised and no discernible impact is expected to be measurable beyond a few metres.

The redundant CBA300 pipeline section remains on the pipeline licence and will be managed in accordance with the requirements of the licence and in line with Esso's OIMS System 6-2 Facility Integrity Management System (FIMS). An equipment strategy for the pipeline will be implemented and stewarded under FIMS Program 03 (Pipeline) such that the pipeline is managed with a risk based Maintenance Plan with the objective to maintain it in a condition per Section 572[4] of the Offshore Petroleum and Greenhouse Gas Storage Act, 2006, to enable surface retrieval, if required, at field decommissioning. Maintenance activities include a 5 year ROV visual inspection. Any maintenance

[4] **S 572 Maintenance and removal of property etc. by titleholder**
Maintenance of property etc.
(2) A titleholder must maintain in good condition and repair all structures that are, and all equipment and other property that is:
(a) in the title area; and
(b) used in connection with the operations authorised by the permit, lease, licence or authority.
Removal of property etc.
(3) 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:
(a) in which the titleholder is or will be engaged; and
(b) that are authorised by the permit, lease, licence or authority.

activities identified through FIMS will be conducted under the existing Central Fields EP. The corrosion inhibitor will prevent internal corrosion and the outer coatings will protect the pipeline from external corrosion, maintaining pipeline integrity. The likelihood of a new hole, and subsequent impact from a release of the inhibited water is therefore considered very unlikely.

Consequently the consequence level was rated a Level IV impact.

Interference with other marine users

The redundant pipeline will remain in-situ. A visual pipeline inspection undertaken in 2014 (Fugro, 2014) indicated that more than 95% of the CBA300 pipeline was either partially or mostly buried and approximately half the length of pipeline was less than 25% exposed.

Commercial fishing operators are known to target pipelines as the structures can lead to localised increases in fish populations.

A number of Commonwealth managed fisheries are active in the vicinity of the CBA300 pipeline, however once installation of the new flexible pipeline is completed it is not envisaged that there will be any further disruption to fishing activities, on this basis there is no risk to third parties from the redundant CBA300 pipeline.

This aspect is not applicable to KEFs. Fisheries stakeholders raised one concern relating to the mid-point join on the new flexible pipeline, this has been addressed and is described in Section 5.2.4. No further evaluation against the principles of ESD is required.

5.2.5.3 Controls

- Ends of CBA300 will be plugged
- CBA300 maintained in accordance with pipeline licence.
- Equipment strategy using a risk based Maintenance Plan with the objective to maintain the pipeline in a condition to enable surface retrieval, if required, at field decommissioning will be implemented and stewarded under FIMS Program 03 (Pipelines), including a 5 year ROV visual inspection.
- Dispersion modelling demonstrates any release of inhibited seawater is low risk

5.2.5.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
B	IV	4

5.2.5.5 Demonstration of ALARP

The redundant CBA300 pipeline will remain in situ until a decommissioning plan has been prepared, approved and implemented. The CBA300 was originally laid piggybacked with the HLA100 fuel gas pipeline and then released from the piggy back support to lay alongside the redundant CBA300 line. The fuel gas pipeline supplies fuel gas from HLA platform to CBA platform. Attempting to remove the CBA300 and lifting the steel pipeline onto a vessel poses a significant risk of damaging the HLA100. Removal of the redundant CBA300 pipeline has therefore been rejected as not practicable at this time.

Flushing the pipeline was considered but was not deemed to be practicable as pigging the pipeline could result in a stuck pig, the pressure required to pig and flush the line could generate more holes, inhibited water would be forced out the existing hole, ultimately the inhibited water would likely be discharged via the Dutson Downs onshore water treatment facilities back into the marine environment. Removing the corrosion inhibitor entirely would lead to a greater risk of internal corrosion that could impact future abandonment options and hence there would have been a requirement to replace it with another chemical.

The proposed control measures summarised above are considered sufficient to reduce the impacts and risks associated with this hazard to ALARP as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

Fisheries have coexisted with petroleum operations in the Gippsland Basin for decades, and the associated risks are well understood by both parties. A tribunal is in place for addressing genuine/validated losses incurred by commercial fisheries impacted by petroleum infrastructure/installations not marked on nautical charts and outside the Petroleum Safety Zones.

The CBA300 pipeline route is located within the ATBA and therefore entry of commercial shipping without permission is prohibited. The redundant pipeline does not have any snag points outside the PSZs and is already partially buried which prevents any negative impact with commercial fishing. Removing the pipeline would likely to lead to a greater degree of impact to fishermen than leaving it on the sea bed. This is a Type A ALARP decision. The risk associated with marine user interactions are well managed and are considered industry best practice. The location of the pipeline is well understood and there have been no concerns raised about it presence by the fishing industry. Esso considers the risk to be ALARP on this basis.

5.2.5.6 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there are no stakeholder concerns, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.2.

5.3 Unplanned Events

5.3.1 Loss of Hazardous and Non-hazardous Waste (RA 15)

5.3.1.1 Hazard

Generated solid wastes may be broadly classified into one of two categories:

- General non-hazardous solid wastes
- Hazardous wastes.

Non-hazardous solid wastes produced on vessels include cardboard, plastic, aluminium and paper. These waste materials will be stored on board in suitable containers (segregated from hazardous waste materials) for transport back to shore for disposal/recycling in accordance with local regulations.

Hazardous wastes are defined as being waste materials that are harmful to health or the environment. Chemicals and other hazardous materials that may be stored on the vessels include:

- Lubricating oils, cleaning and cooling agents
- Oil filters and batteries
- Oily rags
- Paint, aerosol cans
- Acids/caustics and solvents.

All hazardous waste generated will be documented 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 hazardous waste materials will be transported to shore for disposal or recycled at an approved facility in accordance with local requirements. There is potential for hazardous and non-hazardous waste to be accidentally lost to the marine environment.

5.3.1.2 Impact Assessment

Potential impacts of accidental solid waste discharge to sea include potential physical harm to marine fauna resulting from ingestion or entanglement with solid waste (garbage).

C&R Consulting (2009) reported that at least 77 species of marine wildlife found in Australian waters have been impacted by entanglement in, or ingestion of, plastic debris during the last three and a half decades (1974-2008). The affected species include six species of marine turtles, 12 species of

cetaceans, at least 34 species of seabirds, dugongs, six species of pinnipeds, at least 10 species of sharks and rays, and at least eight other species groups.

Most records of impacts of plastic debris on wildlife relate to entanglement, rather than ingestion. However, the rate of ingestion of plastic debris by marine wildlife is difficult to assess as not all dead animals are necropsied or ingested plastic debris may not be recorded where it is not considered as the primary cause of death.

The patterns of reports of entanglement in, and ingestion of, plastic debris by wildlife in Australian waters are likely to be influenced by factors such as the size and distribution of populations, foraging areas, migration patterns, diets, proximity of species to urban centres, changes in fisheries equipment and practices, weather patterns, and ocean currents, as well as the frequency of monitoring and/or observation of wildlife.

Species dominating existing entanglement and ingestion records are turtles and Humpback whales. Australian pelicans and a number of cormorant species are also frequently reported.

Anecdotally, seals have been observed on offshore facilities within the Gippsland Basin with injuries from entanglement with plastic. However, there are no recent records of incidents associated with the inappropriate disposal of waste that has caused death or injury to marine fauna.

If accidentally lost overboard, hazardous waste would result in a temporary and highly localised hazardous water quality zone. This could have a toxic effect on marine fauna that are present within this zone. The exposure and toxicity would be highly temporary due to rapid dilution and dissipation expected in the open water marine environment of the operational area.

Potential impacts of the accidental release of solid waste are likely to be limited to one or a few individual marine animals in the immediate vicinity of the accidental release site, with the most likely fauna affected those within the surface waters.

Consequently the consequence level was rated Level IV.

The potential impact is localised and short-term, and is not considered as having the potential to affect biological diversity and ecological integrity, or to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required. No stakeholder concerns have been raised to date regarding waste management. There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.3.1.3 Controls

- Vessel waste management procedures will be in compliance with Marine Order 95 (Marine pollution prevention – garbage) 2018 (which gives effect to MARPOL Annex V (Prevention of Pollution by Garbage from Ships)) Requirements.
- Garbage Management Plan in place and implemented.
- Garbage Record Book maintained in accordance with Marine Order 95.
- Inductions for all vessel crew provide an opportunity to make personnel aware of the requirements of the Garbage Management Plan and housekeeping provisions during the activity.

5.3.1.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
D	IV	4

5.3.1.5 Demonstration of ALARP

The controls listed above are considered sufficient to reduce the impacts and risks associated with waste management to ALARP, in accordance with Section 4.2 as the nature of this risk is well understood, well-established practices are in place and the residual risk resulting from this activity is considered to be low (Category 4). The Garbage Management Plan and Record Book, in compliance

with the requirements of MARPOL Annex V, are appropriate for managing the day to day risk of this activity.

The potential impact of an accidental release of hazardous or non-hazardous waste is localised and short-term, and is not considered as having the potential to affect biological diversity and ecological integrity, or to result in serious or irreversible environmental damage. Consequently, no further evaluation against the principles of ESD is required. No stakeholder concerns have been raised to date regarding waste management. There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.3.1.6 Demonstration of Acceptability

For this hazard the residual risk was assessed as a Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.3.2 Accidental Release – Dropped / lost overboard objects (RA 16)

5.3.2.1 Hazard

Items of equipment may be accidently dropped into the sea from the DSV, or dropped by divers or ROV. Extreme weather events, resulting in wave heights and high winds, can also occasionally cause unrestrained items to fall from vessels. Depending on the nature of the dropped object, it could cause seabed disturbance, a hazard to other marine users or damage to existing petroleum infrastructure.

5.3.2.2 Impact Assessment

In the unlikely event of an accidental loss of equipment or tools from either the DSV or dropped by divers / ROV potential environmental effects will be limited to localised physical impacts on benthic communities arising from equipment sinking to, and dragging across the seabed. Dragging of equipment along the seabed may result in localised physical disturbance. However, given the water depth within the operational area (approx. 75 m), the absence of any shallow waters (<20 m water depth) and any emergent features within or immediately adjacent to the operational area, and the size/weight of the tools being used by the divers / ROV during the pipeline repairs, the risk of significant impacts resulting from equipment loss is considered to be low.

The largest potential dropped objects are the concrete mattresses which will be installed over the new CBA150 pipeline, between the redundant CBA300 section and the MKA300 pipeline locations, and at the CBA300 and HLA100 pipeline crossing near HLA. These will be over-boarded at a safe distance from subsea assets and lowered to just above the sea-bed before being manoeuvred into their final position to minimise the risk of dropped and dragging objects in line with the lifting procedures. Lifting operations will be monitored in the water by ROV or diver.

Weather conditions in Bass Strait are the main cause of lost overboard objects with unrestrained items being dislodged from a vessel due to strong winds or heavy swell. Note that access to the HLA or CBA PSZ will be subject to EAPL approval and will be limited to acceptable weather windows as defined within the Activity Specific Operating Guidelines (ASOG) and installation procedures. The ASOG sets out the weather (for example the wave, swell, current and wind conditions) that allow vessels to operate safely in proximity to a platform. The weather condition required by the ASOG will be lower than those necessary to pose a risk of items being lost overboard. Hence for the project and this EP the risk of an object being lost overboard while conducting a petroleum activity due to extreme weather will effectively be eliminated.

At HLA the DSV will work on the east side of platform to enable the divers and ROVs to reach the work. The pipelines on the east side of HLA are the HLA100 fuel gas pipeline between HLA and CBA platform; the MLA100 fuel gas pipeline between MLA and HLA platforms and the MKA300 oil pipeline between HLA and MKA platform.

The MKA300 pipeline is shutdown, depressurised and has been flushed and filled with water, hence it will not be oil filled for the duration of the CBA PRP. Additionally the MKA300 is concrete weight coated and the pipeline on the seabed is partially self-buried in the seabed sediments.

When the vessel is alongside Cobia or Halibut Platforms or above the pipeline crossing the HLA100 fuel gas pipeline will be shut down and depressurised. The MLA100 fuel gas line, which will remain operating, approaches HLA platform from the north east and is furthest away from the CBA PRP work area.

The other oil pipelines to HLA (HLA600, KFB500 and FTA300) are on the west and south west sides of HLA and, as shown in Figure 6 1, are too far away to be impacted by a CBA PRP dropped object event. As there are no oil filled pipelines on the east side of Halibut Platform when the CBAPRP work is being undertaken the risk of a loss of containment from damage to an oil pipeline is not credible.

The risk of a loss of containment from pipelines is also covered by the Central Fields EP and specifically the West Tuna EP RA 37 that describes the shutdown systems and emergency response actions. Section 5 of the West Tuna EP describes the worst case credible spill scenarios and the results from spill modelling.

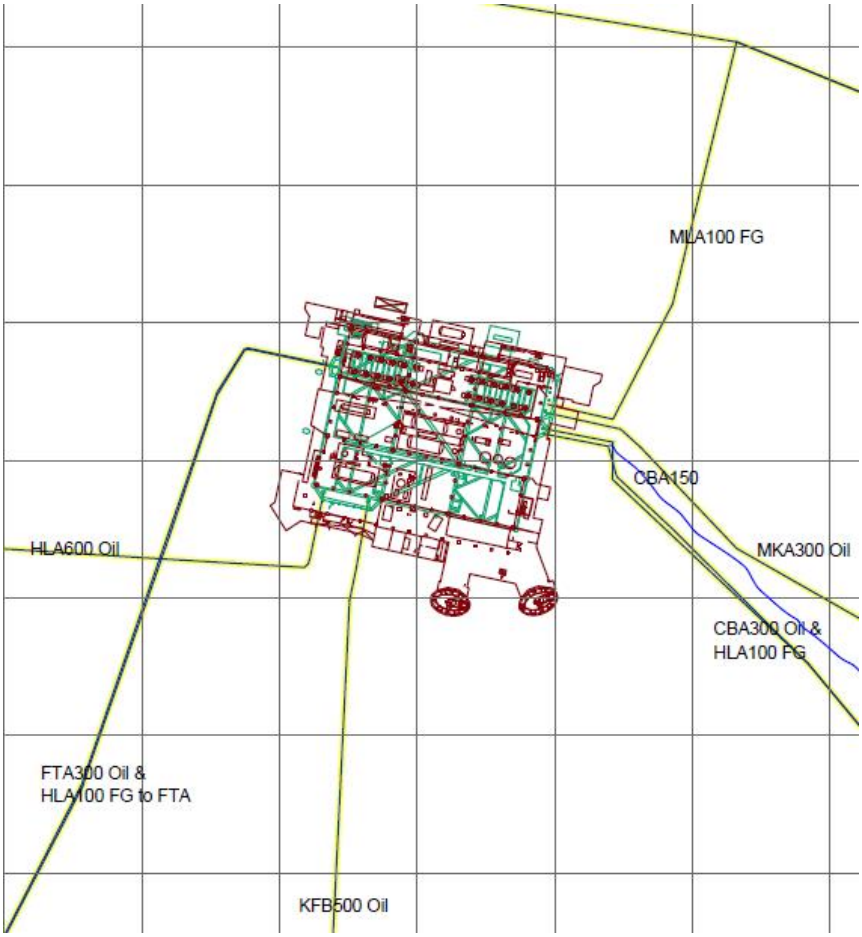


Figure 5-2 Pipeline configuration at Halibut Platform

The risk to all pipelines in the vicinity of Halibut Platform will be mitigated by compliance with lift and installation procedures.

Any environmental impact caused by a dropped object will be limited to damage to small areas of seabed and associated communities that would be mitigated by ubiquitous distribution of similar habitat in the region. A post pipeline repair ROV survey will confirm that unplanned items on the sea floor from the CBA PRP have been located and removed.

Consequently the consequence level was rated a Level IV impact.

There are no KEFs within the area potentially affected by dropped objects. No stakeholder concerns have been raised on RA16. No further evaluation against the principles of ESD is required.

5.3.2.3 Controls

- HLA100 fuel gas pipeline shut down and depressurised while the vessel is alongside CBA or HLA, or above the pipeline crossing.
- Approved lifting procedures including use of Lift Plans, pre-lift deployment checks and identification of safe overboarding areas clear of subsea assets.
- Weather conditions reviewed and approved prior to access to the HLA and CBA PSZs and prior to pipeline installation. In the event of extreme weather the vessel will seek appropriate shelter.
- Certified lifting equipment is maintained in compliance with a Preventative Maintenance System
- Vessel inductions include training for crew in dropped object prevention
- Deck loads, such as containers and project equipment will be adequately secured at all times
- ROV inspection of the seafloor post pipeline repair to confirm that no unplanned equipment has been abandoned on the seabed and if so that it is removed where practicable.

5.3.2.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
C	IV	4

5.3.2.5 Demonstration of ALARP

Adherence to approved lifting and installation procedures and house-keeping procedures (in particular, securing of deck loads) are considered adequate measures to manage the risk associated with dropped objects to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

The project does not require any consumables such as bulk or packaged chemicals, containers or other materials and there will be no planned crane transfer of cargo from vessels to the DSV or from the DSV to the platforms. Dropped objects are however a major safety concern and all lifts will be strictly controlled and monitored in accordance with the Seven Eagle Safety Case and the EAPL Cobia PRP safety case revisions for HLA, CBA and the pipeline. The risks (including seabed disturbance) associated with new flexible pipeline and mattress installation are addressed separately in RA12. No reasonable additional/alternative controls were identified.

On this basis Esso considers the risk to be ALARP.

5.3.2.6 Demonstration of Acceptability

For this hazard the residual risk was assessed as a Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.3.3 Accidental Release - Foam deluge system (RA 16)

5.3.3.1 Hazard

An aqueous film forming foam (AFFF) foam fire-fighting system services the helideck of the DSV.

AFFFs are water-based firefighting foam products used to suppress flammable liquid fires by cooling the fire and coating the fuel, preventing its contact with oxygen.

AFFFs contain some PFAS (per- and poly-fluoroalkyl substances) – based products (FFFC 2017). PFAS are a class of stable man-made chemical substances containing carbon and fluorine in chemically combined form. These fluorosurfactants are the key ingredient that provide AFFF with the required low surface tension and positive spreading coefficient that enables aqueous film formation, and the foam's effectiveness against Class B flammable liquid fires.

Some PFAS-based products are considered persistent (i.e. do not break down), bioaccumulative and toxic (PBT) are therefore being phased out. In the past PFAS-based products have been used in a range of common household products and specialty applications, including in the manufacture of non-stick cookware; fabric, furniture and carpet stain protection applications; and food packaging (DOD 2017).

Operation of the foam deluge system occurs either:

- As part of testing of the system. This allows verification of the system functionality, and tests the ability of the system to aspirate a concentrated fire-fighting foam solution and deliver it to the correct dilution and flow rate at the foam application areas. During testing and activation of the foam system AFFF foam may be discharged overboard via the drainage system;
- As demanded during an actual fire event.

5.3.3.2 Impact Assessment

The AFFF foam selected for use on the DSV is Kerr Fire Filmfoam 813 AFFF 3%.

There will be no testing of the foam deluge system during the project.

No helicopter flights to the DSV are planned during the short CBA PRP program. Consequently there will be no planned use of the helideck and the only situation in which an actual helifuel fire event could possibly occur would be during an emergency medical evacuation.

In the extremely unlikely event of an unplanned release of foam solution it would disperse rapidly in the high energy Bass Strait environment and negligible impacts on the marine environment are expected.

Consequently the consequence level was rated a Level IV impact.

There are no KEFs within the affected area. No stakeholder concerns have been raised on RA16. No further evaluation against the principles of ESD is required.

5.3.3.3 Controls

- No testing of the foam fire-fighting system involving release of AFFF to the marine environment.

5.3.3.4 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
E	IV	4

5.3.3.5 Demonstration of ALARP

To demonstrate that the impacts and risk associated with this hazard have been reduced to ALARP in accordance with Section 4.2, other controls and alternatives were considered.

To minimise the potential environmental impact of a single large release of fire-fighting foam during an incident, its use has been limited to situations which present a significant flammable liquid hazard i.e. the helideck and helifuel storage. The use of fluorine free foam is possible but is not considered to provide substantial benefit during the short pipeline repair program, particularly as the helideck will not be in planned service.

To prevent the potential impacts of smaller releases foam fire-fighting systems may be tested without charging the system with AFFF (seawater only), or using a surrogate foam with similar physicochemical properties. However, this does not provide assurance that the aspiration system used will therefore perform (in terms of concentration delivered and rate of delivery) with the exact foam that would be used in an emergency and such substitution must be approved by the appropriate authority to ensure the adequacy of this testing method. During the CBA PRP there will be no testing of the system which may result in the release of AFFF to the marine environment.

Collection of foam solution from testing, or firewater from an actual event, with subsequent onshore disposal is not considered feasible as:

- This would require edge bunding of the areas that utilise foam, reducing personnel accessibility to these areas and introducing tripping hazards at stair entrances, compromising escape / evacuation routes.
- Piping would need to be retrospectively fitted to allow collection of the foam from the drain system, in addition to requiring large areas for temporary storage of collected foam on generally space constrained units. This can further compromise escape / evacuation routes.
- Additional lifting operations and additional vessel visits would be required, with associated dropped object risks, increased potential for vessel collision and increased consumption of diesel with associated atmospheric emissions.

Testing of the fire fighting system which may result in the release of AFFF to the marine environment will not be undertaken. In case of an emergency, such as a significant flammable fuel fire, safety considerations are the overriding factor. In such a situation the release of firewater directly to the marine environment may be unavoidable. Esso considers the risk to be ALARP.

5.3.3.6 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.3.4 Accidental Release - Hydraulic fluid from ROV operations (RA 18)

5.3.4.1 Hazard

Accidental release of hydraulic fluid to the marine environment could occur as a result of a leaking hose or failed seal during ROV operations. The volume of hydraulic oil that could be accidently released is less than 20L.

5.3.4.2 Impact Assessment

The discharge of a small volume of hydraulic fluid could cause localised, short term changes to water quality and acute or chronic impacts on marine organisms in the immediate vicinity.

Hydraulic fluid may be released from some ROV-operated hydraulic tools as part of normal operations such as tool changeover (estimated release of <2L) or maintenance. Such operations will be undertaken in a bunded area to ensure spills are contained.

Unplanned events, such as a hose leak or a seal failure, may result in a release to the marine environment. The ROV preventative maintenance system prevents the majority of these events and additionally the ROV has built-in safe guards (automatic shut downs) to shut systems down if there is a drop in the levels of the fluid tanks. Less than 20L is typically stored on the ROV unit itself.

It is a closed-loop system, with no planned release to the environment. However, should a spill occur, then an underwater release (maximum 20L) is rapidly diluted and dispersed in the high energy environment with minimal environmental impact.

Consequently the consequence level was rated a Level IV impact.

This risk has no impact on KEFs. No stakeholder concerns have been raised on RA18. No further evaluation against the principles of ESD is required.

- Controls
- Closed loop system – no planned release to the marine environment
- Secondary containment around ROV maintenance area
- Seven Eagle Preventative Maintenance System

5.3.4.3 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
C	IV	4

5.3.4.4 Demonstration of ALARP

To demonstrate that the impacts and risk associated with this hazard have been reduced to ALARP in accordance with Section 4.2 other controls and alternatives were considered. The use of compressed air or inert gas for ROV movement is not considered feasible for this application and introduces other safety risks for ROV operations.

ROV maintenance procedures are considered sufficient control measures to reduce the impacts and risks associated with this hazard to ALARP, in accordance with Section 4.2, as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

There were no further controls identified. On this basis Esso considers the risk to be ALARP.

5.3.4.5 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.3.5 Loss of Containment of Hydrocarbons or Marine Diesel Oil (MDO) (RA 19)

5.3.5.1 Hazard

The credible hazards associated with fuel and oil spills during the planned CBA PRP program (that are considered most credible) are:

- On-deck leak or spill of small quantities (up to 50 L) of hydraulic oil or lubricating oil
- Larger volume (up to 220 000 L) loss of marine diesel oil (MDO) from a ruptured fuel storage tank, resulting from vessel collision.

Refuelling at sea is not planned due to the short duration of the project program.

The maximum credible spill volume as a result of a vessel collision is the volume of the largest fuel tank (AMSA 2015). In addition to the Seven Eagle DSV an HRV will be required to support the CBA PRP. The largest fuel tank on the Seven Eagle is 185 m^3. . MDO spill modelling was undertaken on the volume of the largest fuel tank, 220 m^3, of any of the support vessels (including supply vessels currently operating in Bass Strait) which may be required.

5.3.5.2 Modelling Methodology

Quantitative hydrocarbon spill modelling was undertaken by RPS APASA (APASA 2018), on behalf of Esso, using a three-dimensional hydrocarbon spill trajectory and weathering model, SIMAP (Spill Impact Mapping and Analysis Program), which is designed to simulate the transport, spreading and weathering of specific hydrocarbon types under the influence of changing meteorological and oceanographic forces.

Quantitative spill modelling was undertaken for a surface release of 220m^3 of MDO from a vessel collision at Halibut platform, tracked over 20 days. Halibut platform was selected as the release site as it is the closest CBA PRP location to the coastline. Quantitative modelling from this release site provides a conservative estimate of worst case shoreline impacts in the event of a 220 m^3 MDO spill.

Diesel properties

MDO is a light, refined petroleum product with a relatively narrow boiling range. When spilled on water, most of the oil will evaporate or naturally disperse within a few days or less. The MDO used in spill modelling has API of 37.6, density of 829 kg/m^3 (at 25 ºC) and a low viscosity of 4.0 cP at 25ºC, classifying it as a Group II oil according to the International Tankers Owners Pollution Federation

(ITOPF 2014) and USEPA/USCG classifications. MDO is characterised by a large mixture (95%) of low and semi- to low-volatiles and contains 5% persistent hydrocarbons. It is important to note that some heavy components contained in MDO have a strong tendency to physically entrain into the upper water column in the presence of moderate winds (i.e. >12 knots) and breaking waves, but can re-float to the surface if these energies abate. MDO properties are summarised in Table 5-8.

Table 5-8 Properties of MDO used in the model

Initial density (kg/m³) at 25ºC	Viscosity (cP) (25ºC)	API	Component	Volatiles (%)	Semi-volatiles (%)	Low volatility (%)	Residual (%)
			BP (ºC)	<180	180-265	265-380	>380
				Non- persistent			Persistent
829.1	4.0	37.60	% of total	6.0	34.6	54.4	5

Stochastic modelling

As spills can occur during any set of wind and current conditions, SIMAP's stochastic model was used to quantify the probability of exposure to the sea surface, in-water and shoreline contacts for a hypothetical spill scenario over a 5-year period (2008–2012).
For this assessment, a total of 100 single spill trajectories were run for the hypothetical scenario

Each simulation had the same spill information (i.e. spill volume, duration and oil type) but with varying start times, and in turn, the prevailing wind and current conditions. Once all the spill trajectories have been run, the model then combines the results from the individual simulations to produce maps or tabulated results at sensitive receptor locations, showing multiple parameters, including the probability of exposure above nominated shoreline, sea-surface and in-water thresholds, and minimum time before sea-surface contact, presented on an annualised basis.

The potential for sensitive receptors to be exposed to surface and in-water hydrocarbons has been assessed by the application of assessment thresholds. Assessment thresholds for hydrocarbon exposure (sea surface, shoreline and in-water i.e. entrained and dissolved aromatics) are described below.

Deterministic modelling

The number of deterministic analyses undertaken is dependent on the stochastic modelling results and there are several metrics that are used to select the single trajectories for analysis. Where no shoreline contact is predicted by stochastic modelling, only deterministic modelling for the single trajectories that result in the largest swept area of 'actionable' oil on the sea surface and largest zone of in-water hydrocarbon exposure is undertaken.

5.3.5.3 Thresholds

Sea surface exposure thresholds

A surface hydrocarbon level of 0.5 g/m^2 equates approximately to an average thickness of ~0.5 µm (Table 5-9). Oil of this thickness is described as a silvery to rainbow sheen in appearance, according to the Bonn Agreement Oil Appearance Code (Bonn Agreement, 2009) is considered the practical limit of observing oil in the marine environment (AMSA 2012). This threshold is considered below levels which would cause environmental harm and it is more indicative of the areas perceived to be affected due to its visibility on the sea surface and potential to trigger temporary closures of areas (i.e. fishing grounds) as a precautionary measure. Hence, the 0.5 g/m^2 threshold has been selected to define the zone of potential low exposure on the sea surface.

Table 5-9 The Bonn Agreement Oil Appearance Code

Code	Description Appearance	Layer Thickness Interval (g/m^2 or µm)	Litres per km^2
1	*Sheen (silvery/grey)*	0.04 – 0.30	40 – 300
2	*Rainbow*	0.30 – 5.0	300 – 5,000
3	*Metallic*	5.0 – 50	5,000 – 50,000
4	*Discontinuous True Oil Colour*	50 – 200	50,000 – 200,000
5	*Continuous True Oil Colour*	200 –>	200,000 –>

Table 5-10 Hydrocarbon exposure thresholds in surface waters

Threshold	Range	Basis	Receptors*
Low Impact	0.5 – 10 g/m^2	Socio-economic impact. $0.5g/m^2$ considered the practical limit of observing oil in the marine environment (AMSA 2012) (French-McCay (2016) concluded $1g/m^2$ was an appropriate threshold for sub-lethal effects on water birds, marine mammals and turtles.)	**Social** • Coastal Settlements • Recreation and Tourism • Heritage
Moderate Impact	10 – 25 g/m^2	Lethal threshold for water birds, marine mammals and turtles. $10g/m^2$ derived by French-McCay (2016) based on observations made by the Deep Water Horizon Trustees (2015).	**Ecological** • Seabirds and Shorebirds • Marine Reptiles • Marine Mammals **Social** • Commonwealth Areas, Parks and Reserves • State Parks and Reserves
High Impact	>25 g/m^2	Scholten *et al*. (1996) and Koops *et al*. (2004) indicated that a concentration of surface oil equal to 25 g/m^2 or greater would be harmful for all birds that contact the slick.	

* *Based on available information, concentration thresholds for use in the impact assessment have been defined for the different exposure types (surface, in-water, shoreline). These impact thresholds and exposure pathways are then applied at a receptor level for use in the consequence evaluations.*

Shoreline contact thresholds

There are many different types of shorelines, ranging from cliffs, rocky beaches, sandy beaches, mud flats and mangroves, and each of these influence the volume of oil that can remain stranded ashore and its thickness before the shoreline saturation point occurs. For instance, a sandy beach may allow oil to percolate through the sand, thus increasing its ability to hold more oil ashore over tidal cycles and various wave actions than an equivalent area of water; hence oil can increase in thickness onshore over time. A sandy beach shoreline was assumed as the default shoreline type for the modelling herein, as it allows for the highest carrying capacity of oil (of the available open/exposed shoreline types). Hence the results contained herein would be indicative of a worst case scenario, where the highest volume of oil may be stranded on the shoreline (when compared to other shoreline types, such as exposed rocky shores). The thresholds for shoreline impacts are summarised in Table 5-11.

Table 5-11 Hydrocarbon exposure thresholds used to classify the zones of shoreline contact

Threshold	Range	Basis	Receptors*
Low Impact	10-100 g/m^2	French-McCay *et al* (2005a, 2005b) $10g/m^2$ used to define regions of socio-economic impact (e.g. temporary closure of fisheries, need to clean up man-made structures or amenity beaches)	
Moderate Impact	100 – 1000 g/m^2	AMSA's Foreshore Assessment Guide (2012) defines $100g/m^2$ as the minimum thickness that does not inhibit recovery and is best remediated by natural processes alone. Sub-lethal and lethal impacts for shorebirds and wildlife (French *et al*, 1996).	**Ecological** • Shoreline (e.g. sandy, rock etc.) • Soft Sediment • Marine Invertebrates • Seabirds and Shorebirds • Marine Reptiles • Marine Mammals **Social** • Commonwealth Areas, Parks and Reserves • State Parks and Reserves

			• Coastal Settlements • Recreation and Tourism • Heritage
High Impact	>1000g/m^2	Significant impact on marsh plants (Lin & Mendelssohn, 1996) and mangroves (Grant *et al*, 1993; Suprayogi & Murray, 1999).	**Ecological** • Mangroves • Saltmarshes **Social** • Wetlands

* *Based on available information, concentration thresholds for use in the impact assessment have been defined for the different exposure types (surface, in-water, shoreline). These impact thresholds and exposure pathways are then applied at a receptor level for use in the consequence evaluations.*

Water column exposure thresholds

Dispersed oil are small, discrete insoluble dispersed oil droplets, suspended in the water column. In essence the oil has been partitioned (naturally separated) from gas/oil/water mixture by solubility (water washing) and vapour pressure (evaporation) based on the individual hydrocarbon chemical properties.

While dissolved aromatics are the largest contributor to the toxicity of solutions generated by mixing hydrocarbons into water, it is still important to model the fate of entrained hydrocarbons because they are the mechanism of delivering soluble aromatics to the water column.

The threshold value for species toxicity in the water column is based on global data from French *et al*. (1999) and French-McCay (2002, 2003), which showed that species sensitivity (fish and invertebrates) to dissolved aromatics exposure >4 days (96-hour LC_{50}) under different environmental conditions varied from 6 to 400 ppb, with an average of 50 ppb. This range covered 95% of aquatic organisms tested, which included species during sensitive life stages (eggs and larvae). Thresholds for dissolved aromatic hydrocarbons, and their rationale are summarised in Table 5-12.

Table 5-12 Hydrocarbon exposure thresholds for dissolved aromatic hydrocarbon exposure

Exposure level	Threshold	Basis	Receptors
Low Exposure (99% species protection)	6 ppb for 96 hours (576 ppb.hrs)	LC_{50} from French-McCay (2002, 2003), using lower limit of sensitivity range (6 ppb). Exposure of 96 hours chosen as conservative for acute effects (acute studies generally observe toxicity over 48-96 hours).	
Moderate Exposure (95% species protection)	50 ppb for 96 hours (4,800 ppb.hrs)	LC_{50} from French-McCay (2002, 2003), using average of reported sensitivity values (50 ppb). Species sensitivity (fish and invertebrates) to dissolved aromatics exposure >4 days (96-hour LC_{50}) under different environmental conditions varied from 6 to 400 µg/l (ppb), with an average of 50 ppb. An average 96 hr LC50 of 50 ppb could serve as an acute lethal threshold to 5% of biota.	**Ecological** • Seagrass • Algae • Coral • Plankton • Marine Invertebrates • Fish & Sharks • Marine Mammals **Social** • Commonwealth Areas, Parks and Reserves • State Parks and Reserves • Commercial and Recreational Fisheries • Recreation and Tourism
High Exposure (50% species protection)	400 ppb for 96 hours (38,400 ppb.hrs)	LC_{50} from French-McCay (2002, 2003), using upper limit of sensitivity range (400 ppb). An average 96 hr LC_{50} of 400 ppb could serve as an acute lethal threshold to 50% of biota.	

* *Based on available information, concentration thresholds for use in the impact assessment have been defined for the different exposure types (surface, in-water, shoreline). These impact thresholds and exposure pathways are then applied at a receptor level for use in the consequence evaluations.*

There has been a considerable amount of dialogue among scientists on which entrained hydrocarbon levels represent realistic thresholds. The selected thresholds for entrained hydrocarbons are summarised in Table 5-13.

Appropriate low, moderate and high threshold values can be extrapolated from the NOECs examined in Smit *et al*. (2009) which are represented by: 7 µg/l (7 ppb) (for 1% affected fraction of species), 70.5µg/l (70 ppb) (for 5% affected fraction of species) and 804 µg/l (804 ppb) (for 50% affected fraction of species). Utilising methodologies contained in ANZECC (2000), which is based upon USEPA Guidelines, PNECs can be used to back-calculate LC_{50} values by applying a conservatively small factor of 100 to the NOEC values. This approach is supported by assessment factor criteria contained within the European Chemicals Agency (2008) and the OECD Existing Chemicals Programme 2002 (OECD, 2002). Employing this method, the following conservative threshold values for entrained hydrocarbons are applied:

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

The OSPAR PNEC for PFW is 70 ppb for protection of 95% of species to total hydrocarbons (THC) (Smit *et al*., 2009). This PNEC represents an acceptable long term (or chronic) exposure level from continuous point source discharges in the North Sea, which is one of the most concentrated areas in the world for oil and gas production.

There are practical limitations to OSTM as a tool to assess spill risk, and thresholds, no matter how carefully chosen, are a simplification of the actual situation because:

- Thresholds do not distinguish between the various marine species. Instead, a conservative scientifically defensible value is selected, allowing for the generally agreed species protection levels.
- Thresholds do not distinguish between life stages (eggs, larvae, juveniles, adults).
- Thresholds do not distinguish between the wide range of chemicals that may comprise released hydrocarbons.
- Thresholds do not take into further account the various levels of exposure times, but instead choose between acute (96 hrs) or chronic exposure levels (168 hrs).
- Additionally, there are limitations on the model itself (e.g. McKay *et al.*, 1999, French-McCay 2004):
- Available temperature, wind, wave and current data,
- Grid resolution and bathymetry simplification,
- Tidal forcing,
- Assumptions made around weathering and fate,
- Limitations to the number of computations which restricts the number of particles that are traced during each run, and which in turn limits the lowest concentrations that can be reliably traced.

A further complication is that modelled volumes and composition of hydrocarbons are conservatively chosen based on theoretical values and the available reservoir data. Released volumes and actual duration of the release is likely to be substantially less.

In order to take above considerations into account, model assumptions and selection of thresholds are conservative. Nonetheless, low level impacts may extend beyond the lowest impact thresholds defined above. The geographical extent of such impacts was determined by applying the ANZECC (2000) reference criteria for total petroleum hydrocarbons to entrained hydrocarbons.

Table 5-13 Hydrocarbon exposure thresholds for entrained hydrocarbons exposure

Exposure level	Threshold	Basis	Receptors
ANZECC reference criteria	7 ppb for 96 hrs (672 ppb.hrs)	ANZECC (2000) derived a final chronic value of 7 µg/L total petroleum hydrocarbons (TPH), based on Tsvetnenko (1998), who used the USEPA methods (Stephan *et al.* 1985, USEPA 1994d). The threshold is applied for acute exposure (i.e. 96 hrs). This threshold is applied to provide a geographical limit to low level impacts, below the 95%-ile PNEC threshold.	Possible sub-lethal effects to the most sensitive organisms Below limit of detection using standard laboratory techniques
OSPAR PNEC	70 ppb for 96 hours (6720 ppb.hrs)	The OSPAR PNEC for PFW is 70 ppb for protection of 95% of species (median estimate at 50% confidence and at 5% of the hazardous concentration (HC5)) and is based on biomarker and whole organism testing to total hydrocarbons (THC) (Smit *et al.*, 2009). The functioning of any ecosystem in which that species exists is protected provided that the ecological structure is not distorted. The working but arbitrary hypothesis is that protection of the most sensitive species with a 95% confidence limit should protect ecosystem structure and hence function (WHO 1999). This PNEC represents an acceptable long term (or chronic) exposure level from continuous point source discharges in the North Sea, which is one of the most concentrated areas in the world for oil and gas production. The final time-integrated exposure (or dosage) thresholds adopt a continuous exposure period of 96 hours.	**Ecological** • Seagrass • Algae • Coral • Plankton • Marine Invertebrates • Fish & Sharks • Marine Mammals **Social** • Commonwealth Areas, Parks and Reserves • State Parks and Reserves • Commercial and Recreational Fisheries • Recreation and Tourism
Fish Tainting	240 ppb for 96 hours (23,040 ppb.hrs)	Davis *et al* (2002) studied the effect of the exposure of fish to petroleum products, and resulting tainting (oily taste) and rate of depuration (return to normal flavour when returned to clean water). Davis *et al* (2002) showed that acute exposure to oil in seawater is detectable at between 100 – 330 ppb, and that a lower level of exposure to medium fuel at 240 ppb is an acceptable lower limit for finfish. Tainting thresholds for trout varied from 0.10 mg/L for crude and 0.33 mg/L for medium fuel oil, to 0.25 mg/L for diesel exposure (98 – 331 ppb), and that the rate of update and rate of depuration depended on the petroleum product. Diesel-derived taint persisted for over 10 weeks, much longer than both the medium fuel oil (47 days) and the crude oil (35 – 45 days for finfish) derived taints. However, fish tainting is temporary, and fish returns to natural flavour after 1-2 months in uncontaminated seawater. The lower level concentration for exposure to medium fuel (0.241 mg/L - 241 ppb) formed the basis for this threshold.	**Social** • Commercial and Recreational Fisheries
Low Impact (99% species protection)	700 ppb for 96 hours (67,200 ppb.hrs)	LC_{50} for 99% of species. Exposure thresholds used to assess entrained hydrocarbon exposure were based on OSPAR guidelines. OSPAR has published a PNEC for PFW, which accounts for the dispersed fractions of oil that is more representative of entrained oil droplets. Exposure of 96 hours chosen as conservative for acute effects (acute studies generally observe toxicity over 48-96 hours).	
Moderate Impact (95% species protection)	7,050 ppb for 96 hours (676,800 ppb.hrs)	LC_{50} for 95% of species protection. Exposure thresholds used to assess entrained hydrocarbon exposure were based on OSPAR guidelines. OSPAR has published a PNEC for PFW, which accounts for the dispersed fractions of oil that is more representative of entrained oil droplets. Exposure of 96 hours chosen as conservative for acute effects (acute studies generally observe toxicity over 48-96 hours).	
High Impact (50% species protection)	80,400 ppb for 96 hrs (7,718,400 ppb.hrs)	LC_{50} for 50% of species protection. Exposure thresholds used to assess entrained hydrocarbon exposure were based on OSPAR guidelines. OSPAR has published a PNEC for PFW, which accounts for the dispersed fractions of oil that is more representative of entrained oil droplets. Exposure of 96 hours chosen as conservative for acute effects (acute studies generally observe toxicity over 48-96 hours).	

5.3.5.4 Modelling Results

The quantitative spill modelling results were used to determine:

- Weathering and fate of diesel in the marine environment
- Shoreline contact
- Sea surface exposure zones
- In-water exposure zones

Weathering and fate

Figure 5-3 shows weathering graphs for 5, 10 and 15 knots spill trajectories, each spill trajectory represents the release of 220 m^3 of MDO over 6 hours tracked for 20 days. The model results illustrated prevailing weather conditions influenced the weathering and fate of the MDO. Under lower wind-speeds (5-10 knots), oil remained on the surface longer, spread quicker and in turn increased the evaporative process. Conversely, sustained stronger winds (>12 knots) will generate breaking waves at the surface, causing a higher amount of MDO to be entrained into the water column and reducing the amount available to evaporate.

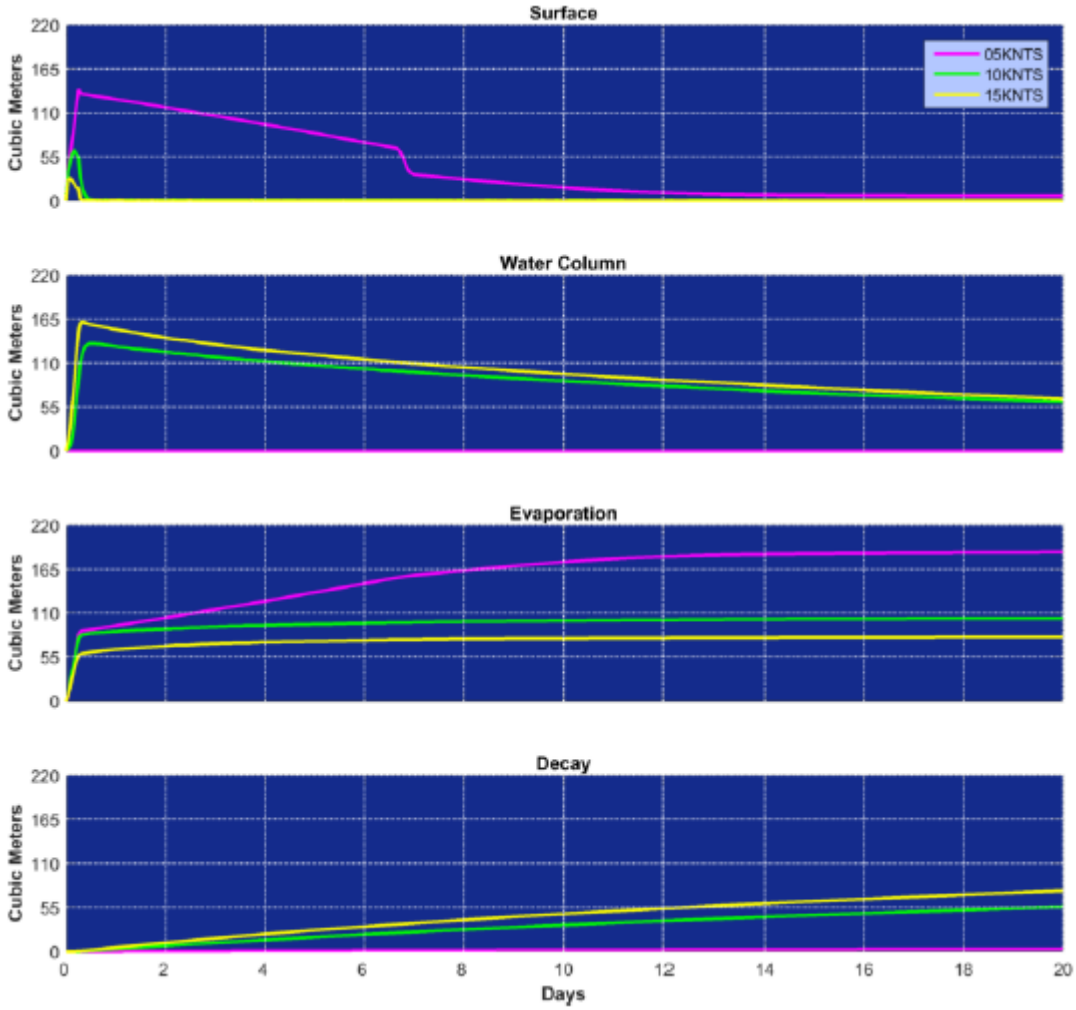


Figure 5-3 **Predicted weathering of MDO based on a 220 m^3 surface release of MDO at Halibut over 6 hours and tracked for 20 days (APASA 2018)**

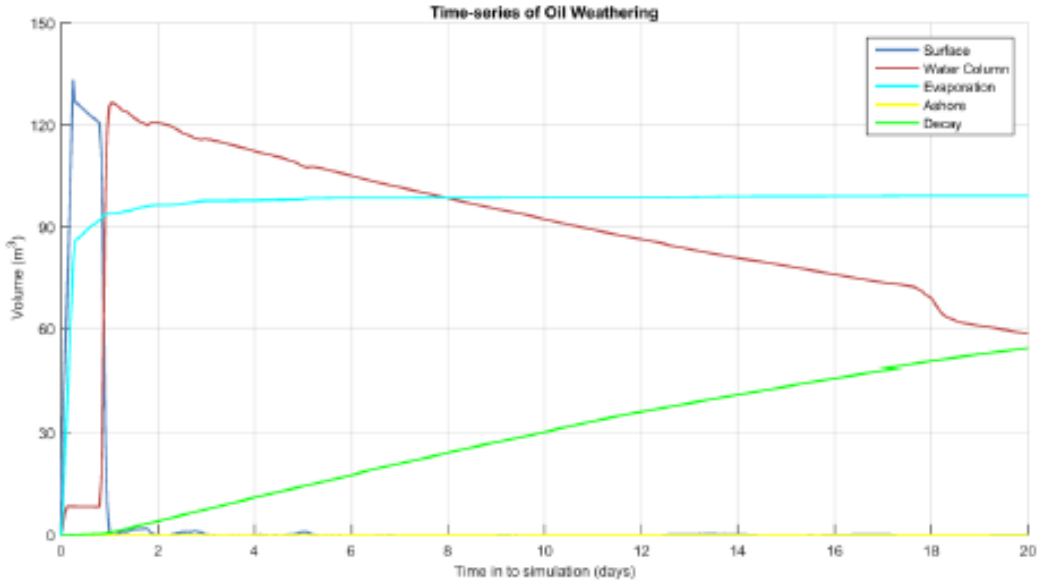


Figure 5-4 **Predicted weathering and fates graph for the single spill trajectory with the largest sea surface swept area at the 10 g/m^2 threshold. Results are based on a 220 m3 surface release of MDO over 6 hours following a vessel collision, tracked for 20 days, 4pm 11th of February 2010 (APASA 2018)**

Figure 5-4 presents the fates and weathering graph for the single spill trajectory with the predicted largest sea-surface swept area (commencing at 4pm on 11th February 2010). Visible oil did not persist on the sea surface beyond 1 day nor was 'actionable' oil predicted on the sea surface beyond 1 day.

At the conclusion of the simulation period, approximately 99 m^3 (45%) of the spilled MDO was lost to the atmosphere through evaporation. Approximately 54 m^3 (25%) of the MDO was predicted to have decayed by the end of the simulation, while approximately 58 m^3 (27%) was predicted to remain within the water column.

Sea surface exposure and shoreline contact

Each spill trajectory was tracked to a minimum thickness of 0.5 g/m^2 on the sea surface, and 10 g/m^2 on the shoreline. No shoreline contact was predicted for this scenario, consequently no predicted shoreline contact results are presented.

The maximum distance from the release site predicted for low (0.5–10 g/m^2), moderate (10–25 g/m^2) and high (>25 g/m^2) exposure was 195 km (east-northeast), 16 km (east-northeast) and 6 km (west), respectively (at 99th percentile).

The modelling predicted that minimum time before sea-surface exposure at or above the low threshold in Victorian waters (approximately 3 NM south east of Mallacoota) is 65 hours (at the 1th percentile). The Foraging BIA for the Little penguin located offshore from Mallacoota is also predicted to be reached, at or above the low exposure threshold, in 65 hours (at the 1th percentile). These 'outlying' occurrences of sea-surface exposure at or above the low threshold are thought to be caused by a storm event that drives oil subsurface and carries it north east, then when the storm ceases the oil floats to surface in calm water (pers. comm. APASA, July 2018).

The deterministic spill trajectory starting on 11th February 2010 at 4pm was identified to have the largest sea surface swept area at the moderate or 'actionable' (≥ 10 g/m^2) threshold extending approximately 20km south west from the release location.

In-water exposure

Predicted dissolved aromatic concentrations were not observed to persist in the water column long enough to trigger the relevant exposure thresholds (i.e. low (576 ppb.hrs), moderate (4,800 ppb.hrs) or high (38,400 pb.hrs)). Consequently, no results are presented.

The geographical extent of potential impacts from entrained hydrocarbons beyond the OSPAR PNEC, based on the ANZECC reference criteria (672 ppb.hrs) may reach into NSW, Victorian and Tasmanian waters, extending as far west as the Curtis, Hogan and Kent Group islands of Bass Strait. Entrained hydrocarbons may also reach the shoreline of eastern Victorian between Cape Howe and the Gippsland Lakes. However, it is unlikely that entrained hydrocarbons could be measured in the water column at these levels with standard laboratory methods, while impacts on even the most sensitive biota and ecosystems would most likely not be detectable with conventional scientific methods.

Entrained oil concentrations were not predicted to persist below 10 m above any of the reporting thresholds.

The deterministic spill trajectory starting on 28th September 2008 at 5pm was identified to have the largest area od entrained hydrocarbon exposure above the ANZECC reference level threshold (672 ppb.hrs) extending approximately 150 km north east from the release location.

5.3.5.1 Impact Assessment

Surface MDO Exposure

Hydrocarbons on the sea-surface will only impact those receptors that are exposed to the sea-surface. Only those receptors predicted to be exposed to hydrocarbon levels above the threshold value for that receptor are evaluated further in Table 6-7 below. There is a 28% probability that surface hydrocarbons will reach the Upwelling East of Eden at or above the low threshold, but not at the moderate threshold. In addition, whales, seabirds, seals and marine turtles may be affected by surface hydrocarbon exposure at variable levels.

In-water MDO Exposure

In-water hydrocarbons (from dissolved and entrained hydrocarbons) may impact those receptors that are exposed to the water column. Only those receptors predicted to be exposed to hydrocarbon levels above the threshold value for that receptor are evaluated further in Table 6-7 below.

Exposure above the in-water (entrained) OSPAR PNEC impact threshold (70 ppb) was predicted to extend up to 10 km around the release site, and is restricted to the surface (0-10 m) layer. The water depth in the area predicted to be exposed above the impact threshold is approximately 60 - 70 m which generally precludes the more sensitive benthic flora and fauna. No Commonwealth Marine Parks or State marine protected areas were predicted to be exposed to entrained oil above the impact threshold.

Consequence determined to be III

Table 5-14 Summary of predicted likelihood of spill impacts

Partition	CBA PRP operational area	Commonwealth waters	Victorian waters	Shoreline impact	Biologically Important Areas (BIA) (APASA 2018)	Key Ecological Features (KEF) (APASA 2018)
220 m^3 MDO Spill	**Distance from release site**				**Probability of hydrocarbon exposure**	
Surface hydrocarbons	6 km W (high threshold; 99%-ile)	16 km ENE (moderate threshold; 99%-ile)	195 km ENE (low threshold: 99th -ile	NC	Probability (at high threshold); whales, sea birds:36%	Probability (at low threshold): Upwelling East of Eden: 28%
>50% probability of surface oil exposure at low threshold	Immediately around release site only		-	-		
1-10% probability of surface oil exposure at low threshold	Up to 195 km from release site			-		
Time to reach outer limit for low sea surface threshold	<6 hours	2-5 days	2-5 days	-		
Dissolved aromatic hydrocarbons	NE	NE	NE	NE	NE	NE
Vertical distribution	-	-				
Entrained hydrocarbons	Up to 10 km from release site (OSPAR PNEC threshold)		At ANZEC reference level threshold entrained hydrocarbons may reach the Victorian coastline, the BIA for whales, Grey nurse shark and seabirds, as well as KEFs (including Upwelling East of Eden, Big Horseshoe Canyon)			
Vertical distribution	0-10 m layer					
Deterministic modelling (worst case swept surface area)	Moderate exposure <10 km SW from release site	Low exposure up to 20 km SW from release site		-	-	-
Deterministic modelling (worst case in-water exposure)	At ANZECC reference level threshold entrained hydrocarbons may reach up to 150 km NE from release site					
Duration of visible sea surface film	1 day after release	1 day after release	May 'resurface' after several days	-	-	-
'Actionable' sea surface oil	1 day after release	1 day after release	-	-	-	-

NE=No exposure; NC= No contact; - = not applicable

5.3.5.2 Controls

- Compliance with Marine Orders 21 and 30 relating to safety of navigation and prevention of collisions.
- DSV DP / station keeping system
- HRV station keeping system maintained and tested in accordance with PMS
- ATBA, existing PSZs around CBA and HLA.
- HRV stationed outside PSZ
- Pre-start notifications:
    - The Australian Hydrographic Society (AHS) will be notified no less than four working weeks before operations commence to enable generation of navigational warnings, including Notice to Mariners (NTM), to be published.
    - AMSA's Joint Rescue Coordination Centre (JRCC) will be notified 24–48 hours before operations commence to enable AMSA to distribute Auscoast warning.
    - Relevant Stakeholders will be notified of activities approximately one month and again one week prior to commencement
- Emergency response capability will be maintained in accordance with EP, OPEP and related documentation. Esso shall maintain a full time emergency response capability for the duration of the pipeline repair activities
- Emergency response activities will be implemented in accordance with the vessel SOPEP
- Under the OPGGS(E) Regulations 2009, the petroleum activity must have an accepted Oil Pollution Emergency Plan (OPEP) in place before the activity commences. In the event of a loss of containment, the OPEP will be implemented. The OPEP shall be tested in accordance with the OPGGS(E) Regulations 2009.
- The OSMP details the arrangements and capability in place for operational monitoring (to inform response activities) and scientific monitoring (of environmental impacts of the spill and response activities). Operational monitoring will allow adequate information to be provided to aid decision making to ensure response activities are timely, safe, and appropriate. Scientific monitoring will identify if potential longer-term remediation activities may be required.

5.3.5.1 Risk Assessment and Ranking

Likelihood	Consequence	Risk Ranking
E	III	4

Table 5-15 Potential impacts of MDO on sensitive receptors

Receptor		Exposure Evaluation	Consequence Evaluation
Surface water			
Ecological	Marine turtles	Four species of marine turtles listed as Threatened or Vulnerable may occur in the area exposed to moderate surface thresholds. However, this area is not identified as critical habitat and there are no spatially defined aggregations, or BIA.	Marine turtles are vulnerable to the effects of oil at all life stages. Harmful effects may occur through ingestion of oil, inhalation of toxic vapours (i.e. close to the spill source) or irritation to the head, neck and flippers due to oil contact with the skin. MDO is unlikely to stick to turtles in large amounts since it has a low stickiness and would likely wash off skin surfaces. Ingestion and inhalation of hydrocarbons is only expected to occur to animals in the immediate vicinity of the release location given the weathering characteristics of marine diesel. Given the very small predicted spill area, short duration of potential exposure and the mobile nature of turtles this is unlikely to affect significant numbers. The potential impacts and risk to marine turtles are Category 4 (Low).
	Seabirds and shorebirds	Several bird species which are listed as Threatened or Migratory may occur in the area exposed to moderate surface thresholds. There are foraging BIA's for some species of petrels and albatrosses throughout the area. However, there are no breeding BIAs as the majority of known breeding habitats are along the coastline or on the islands of Bass Strait.	Oil spills can have a variety of effects including fouling of the plumage, ingestion of oil, effects on reproduction and physical disturbance. Many of the species that occur offshore are surface-feeding or plunge-diving pelagic birds, so that oil slicks would potentially interfere with feeding and increase exposure risk. Seabirds are expected to be present within the area but their presence is transient and sporadic. Hence population level impacts are unlikely but mortality of protected seabirds may occur. Oil-coated birds can suffer hypothermia, dehydration, drowning and starvation, and become easy prey. Toxicity from ingested diesel could occur as a result of toxic hydrocarbons such as PAHs present within weathered diesel. Given the dispersive nature of MDO, the small predicted spill area and the fact that the majority of bird species are highly mobile, significant impacts as a result of an MDO spill are unlikely. The potential impacts and risk to seabirds are Category 4 (Low).
	Seals (Pinnipeds)	Seals are likely to occur within the area exposed to moderate surface thresholds. However, these areas are not identified as critical habitat, and there are no spatially defined aggregations, or BIA.	Exposure to surface oil can result in skin and eye irritations and disruptions to thermal regulation. Fur seals are particularly vulnerable to hypothermia rom oiling of their fur. Since MDO is a light oil, such impact is unlikely. Seal exposure is expected to be low, with impacts

Receptor		Exposure Evaluation	Consequence Evaluation
			restricted to individuals rather than colonies. Due to the rapid weathering of MDO, the potential duration of exposure is limited. The potential impacts and risk to seals is considered Category 4 (Low).
	Whales & Dolphins (Cetaceans)	A total of eleven marine mammals listed as Threatened or Migratory may occur within the area exposed to moderate surface thresholds The area is within the Pygmy blue whale foraging and Southern right whale migration BIAs. CBA PRP activities are planned to overlap with the migration of Blue whales, however this species is rarely sighted in the Gippsland Basin.	Whales and dolphins could potentially ingest dissolved or entrained oil when feeding in open water or become coated with diesel while surfacing to breathe. Ingestion of oil at the quantities required to induce direct toxic effects is considered unlikely in a spill scenario (Geraci,1998). MDO has a low stickiness and would likely quickly wash-off the dorsal surfaces of cetaceans as they dive into deeper waters. Exposure of eyes and mucous membranes may result in irritation. There is the potential for volatile hydrocarbons to be inhaled if cetaceans were to surface within a MDO surface slick especially if this occurred close to the spill area where the hydrocarbons would be relatively fresh (i.e. have a greater concentration of volatile monocyclic aromatic hydrocarbons (MAHs) such as benzene, toluene, ethylbenzene and xylene). As the zone of sea surface contact above the impact threshold is relatively small and MDO undergoes rapid dispersion and evaporation, impacts to marine mammals as a result of hydrocarbon inhalation are highly unlikely. Given the mobility of whales, only a small proportion of the migrating population would surface in the affected area, resulting in a Category 4 (Low) risk.
Social	Recreation and tourism	Marine pollution can result in impacts to marine-based tourism from reduced visual aesthetic. The modelling predicts no shoreline impact at the low contact threshold. There is a very low (1%) probability of visible sheen (low surface impact threshold: (0.5 - 10 g/m^2) extending into a very small area of Victorian waters approximately 3NM off the coast of Mallacoota.	Visible sheen has the potential to reduce public amenity. However, because of distance from shore, impacts and risk is ranked as Category 4 (Low).
	Heritage	The modelling predicts no shoreline impact at the low contact threshold. There is a very low (1%) probability of visible sheen (low surface impact threshold: (0.5 - 10 g/m^2) extending into a very small area of Victorian waters approximately 3NM off the coast of Mallacoota.	Visible sheen has the potential to reduce public amenity at heritage locations. However, because of distance from shore, impacts and risk is ranked as Category 4 (Low).
Subsurface			

Receptor		Exposure Evaluation	Consequence Evaluation
Ecological	Macroalgae	No dissolved aromatic hydrocarbon exposure above the low threshold (576 ppb.hrs), was predicted. The potential zones of entrained exposure at the OSPAR PNEC (≥ 6720 ppb.hrs) threshold may occur within 10 km of the operational area. Since the operational area is too deep for macroalgae, no impacts on macroalgae from a LOC event are predicted.	Given the lack of macroalgae habitat within the area affected above the OSPAR PNEC threshold, the potential impacts and risk to macroalgae is considered to be less than a Category 4 (Low).
	Seagrass	The potential zones of entrained exposure at the OSPAR PNEC (≥ 6720 ppb.hrs) threshold may occur within 10 km of the operational area. Seagrass may be present in shallower waters adjacent to the coast as it is largely restricted to water depths <35 m. Abundance rapidly declines below 10m water depth, especially in high turbulence areas, where light penetration is limited (Cambridge and Kuo 1979). Since the operational area is too deep for seagrasses, no impacts from a LOC event are predicted.	Because much of the seagrass biomass is in the rhizomes below the substrate (Zieman et al 1984), exposure to in-water hydrocarbons is more likely to result in sub-lethal impacts, rather than lethal impacts. The potential impacts and risk to seagrass is considered to be less than a Category 4 (Low).
	Temperate corals, ascidians, bryozoans and sponges	Soft corals may be present on hard substrate, such as intertidal rocky shores or exposed rocky headlands. They may also be found on hard substrate in deeper waters further offshore, including Big Horseshoe Canyon and Beagle Marine Park where adequate food is available in the water column. Their presence in the near vicinity of the operational area is unlikely due to the lack of hard substrate, and low levels of suspended organic matter in the water column (Butler *et al* 2002). Six sponge beds were reported in Bass Strait, in an arc along the 65-75 m contour near Tasmania. Ascidians and bryozoans occupy a similar habitat (Butler *et al* 2002). Sponges and ascidians are also found on soft-bottom substrate (see below). However, most barnacle and ascidian species inhabit hard substrates and are generally infrequent in soft bottoms (e.g. Yakovis *et al* 2005).	Exposure of shallow subtidal corals to entrained hydrocarbons has the potential to result in lethal or sublethal toxic effects (Shigenaka 2001). This may lead to reduced growth rates, tissue decomposition and localised mortality (NOOA, 2001). Because of the water depth at the operational area, and entrained hydrocarbons being restricted to surface waters (<10m), impacts on temperate reefs are unlikely. Therefore, the potential impacts and risk to hard substrate communities are considered to be less than a Category 4 (Low).

Receptor		Exposure Evaluation	Consequence Evaluation
	Plankton	Plankton is likely to be exposed to entrained hydrocarbons above the OSPAR PNEC threshold in an area within 10 km of the operational area. Although surface hydrocarbons at the low threshold are predicted to extend to the Upwelling East of Eden, no impacts from in-water exposure to any KEFs are predicted at or above the OSPAR PNEC threshold.	Relatively low concentrations of hydrocarbons are toxic to plankton (including zooplankton, fish eggs and larvae) through ingestion, contact and inhalation. Plankton is widespread and abundant, and forms the basis for the marine food web. A spill is unlikely to have long-lasting impacts on plankton populations at a regional level. Plankton recovers within weeks to months after water quality has returned to normal (ITOPF 2011) Therefore, the potential impacts and risk to plankton communities are considered to be less than a Category 4 (Low).
	Soft-bottom invertebrates	Soft bottom communities occur throughout the waters around the operational area and along much of the Gippsland coastline. As vertical impact resulting from a LOC is largely restricted to the top 10 m of the water column, and no shoreline impact is predicted below the lowest thresholds, direct impact to soft-bottom benthic communities is not expected. Invertebrates include squid, crustaceans (rock lobster and crabs) and molluscs (scallops and abalone), as well as filter feeding benthic invertebrates such as sponges bryozoans abalone and hydroids. Sponges attach to hard bottom using a basal disc or anchoring spicules, or to soft sediment by means of root-like structures. Several soft-bottom invertebrates are targets for commercial fisheries, including squid, abalone, rock lobster and crabs.	Acute or chronic exposure through contact and/or digestion can result in toxicological effects The hard shell of many invertebrates protects them from absorption. Since impacts from a LOC are restricted to the water surface or the top 10 m of the water column, impact from a MDO spill on soft-bottom benthic communities is unlikely. Therefore, the potential impacts and risks to soft bottom invertebrates is considered to be less than a Category 4 (Low).
	Fish, sharks, rays	Entrained hydrocarbon droplets can physically affect fish exposed for an extended duration (weeks to months). Effects will be greatest in the upper 10 m of the water column and areas close to the spill source where hydrocarbon levels are highest. No exposure at or above the tainting threshold was predicted. Furthermore, many fisheries target fish species are demersal, in deeper waters away from the water surface.	Pelagic free-swimming fish and sharks are unlikely to suffer long-term impact from oil spill exposure because entrained hydrocarbons in the water column are predicted to be below lethal thresholds. Although exposure above the tainting threshold was not predicted, tainting effects if they occur are reported to be short-term and reversible. Juvenile fish, including larva and zooplankton are more susceptible to hydrocarbons in the water column (see above under "plankton"), although impacts are not expected to cause population levels impacts. Impacts in eggs and larvae are not expected to be significant given the

Receptor		Exposure Evaluation	Consequence Evaluation
		The known distribution BIA for the Great white shark overlaps the area potentially exposed above the OSPAR PNEC entrained threshold.	relatively short duration and the limited extent of the spill. As eggs and larvae are widely distributed in the upper water column it is expected that nearby populations will rapidly drift away from affected parts of the water column. Therefore, the potential impacts and risk o fish communities are considered to be less than a Category 4 (Low).
	Seals	Localised areas of the foraging range for New Zealand and Australian fur-seals may be temporarily exposed to concentrations of hydrocarbons above the OSPAR PNEC entrained threshold. Low levels of entrained hydrocarbons may be experienced immediately around the operational area, with OSPAR PNEC thresholds limited to an area <10 km from the spill location for MDO LOC event. No dissolved aromatic hydrocarbon exposure is predicted.	Exposure to low levels of hydrocarbons in the water column or consumption of affected prey may cause sub-lethal impacts. However, given the temporary and localised nature of a spill and the wide geographic distribution of seals impacts at a population level are considered unlikely. The potential impacts and risk to seals are considered to be less than a Category 4 (Low).
	Whales and dolphins	Nine marine mammals listed as Threatened or Migratory may occur within the area exposed to entrained hydrocarbons above the OSPAR PNEC threshold. The area, restricted to within 10km of the release location, is within the Pygmy blue whale foraging and Southern right whale migration BIAs. CBA PRP activities are planned for December which to overlaps with the migration of Blue whales, however this species is rarely sighted in the Gippsland Basin. No dissolved aromatic hydrocarbon exposure is predicted for an MDO spill.	Whales and dolphins could potentially ingest dissolved or entrained oil when feeding in open water. Ingestion of oil at the quantities required to induce direct toxic effects is considered unlikely in a spill scenario (Geraci 1998). In the event of an MDO spill, the environmental impact would be limited to a relatively short period following the release and would need to coincide with migration to result in exposure to a significant number of individuals. CBA PRP activities are planned to overlap with the Blue whale migration however this species is rarely sighted in the Gippsland Basin. Activities do not overlap with the migration of the Southern right or Humpback whales. The potential impacts and risk to cetaceans are considered to be less than a Category 4 (Low).
Social	Commercial and recreational fisheries	In-water exposure to entrained hydrocarbon may result in a reduction in commercially targeted marine species, resulting in impacts to commercial fishing and aquaculture. Actual, or potential, contamination of seafood can affect commercial and recreational fishing and can impact seafood markets, which can have economic impacts to	Any acute impacts resulting from entrained hydrocarbon exposure above the OSPAR PNEC threshold is expected to be limited to small numbers of juvenile fish, larvae, and planktonic organisms, which are not expected to affect population viability or recruitment. Impacts from entrained exposure are unlikely to manifest at a fish population viability level. Any exclusion zone established around the spill location would be limited to the immediate vicinity of the release point, and due to the

Receptor		Exposure Evaluation	Consequence Evaluation
		the industry. No exposure above the tainting threshold is predicted.	rapid weathering of MDO would only be in place 1-2 days after release, therefore physical displacement of fishing vessels is unlikely to cause a significant impact. The potential impacts and risk to fisheries are considered to be less than a Category 4 (Low).
	Recreation and tourism	Recreation and tourism in the region is linked to the presence of marine fauna (e.g. whales), the numerous nature reserves/National Parks and recreational fishing.	Any adverse impact to receptors that are of interest to nature-based tourism (e.g. whales, recreational fishing, nature reserves/National Park) may in turn cause a subsequent negative impact on recreational and/or tourism activities. The potential impacts and risk to these receptors are described above and were assessed to be less than a Category 4 (Low).

5.3.5.2 Demonstration of ALARP

All activities will occur inside the ATBA minimising the risk of collision with large commercial shipping vessels, and the majority of time the DSV will be stationed within the existing PSZ around the Halibut or Cobia platforms minimising the risk of a collision with any vessels not involved in petroleum activities. All vessel entries into the PSZ require permission from, and are logged by, the platform.

Adequate procedures and plans (a vessel SOPEP) are in place on the vessel to respond to a spill. Esso also maintains spill response capability for responding in the event of a spill, which is outlined in the OPEP, and considers timeframes to mobilise and stage a response.

There are no KEFs within affected area. No stakeholder concerns were received in relation to this risk. No further evaluation against the principles of ESD is required.

To demonstrate that the impacts and risk associated with this hazard have been reduced to ALARP other controls and alternatives were considered, including not replacing the pipeline however clamping has previously been unsuccessful.

The control measures described above are considered sufficient to reduce the impacts and risks associated with this hazard to ALARP as the nature of this risk is well understood, the activity is a well-established practice and the residual risk resulting from this activity is considered to be low (Category 4).

In the unlikely event of a spill, Esso's well-practiced oil spill response systems would be activated (per the OPEP) and the impacts minimised. On this basis Esso considers the risk to be ALARP.

5.3.5.3 Demonstration of Acceptability

For this hazard the residual risk was assessed at Category 4 low risk. As all relevant standards (Esso, Australian Standards and Industry best practice) have been met and there were no valid claims or objections to this risk from relevant persons, Esso considers the impacts and risk are acceptable in accordance with the criteria defined in Section 4.3.

5.3.6 Spill Response Strategies (RA 20)

5.3.6.1 Hazard

Table 5-16 lists the values and sensitivities within and near the Operational ZPI based upon the modelling outcomes for the worst-case spill event described in Section 5.3.5 (loss of containment of hydrocarbons or MDO) to support response planning in the event of a spill. No shoreline contact is predicted, so no formal protection priorities were identified. However, Esso has sufficient capability to respond to the worst-case shoreline as part its Gippsland Basin operations. The information provided in Table 5-16 would support activation of operational and scientific monitoring programs in the event of a worst-case spill event.

5.3.6.2 Impact Assessment

The sensitivities within and near the Operational ZPI that may be impacted by spill response activities are summarised in Table 5-16. Associated impacts are as described for planned CBA PRP activities:

Monitoring, Evaluation and Surveillance (MES)

Specific risks associated with MES include:

- Localised and temporary fauna behavioural disturbance that significantly affects migration or social behaviours;
- Auditory impairment, Permanent Threshold Shift (PTS).
- Physical interaction with marine fauna.

Oiled Wildlife Response (OWR) Impact Evaluation

Although OWR activities have the potential to generate environmental aspects, the potential impacts and risks associated with physical interaction with marine fauna are evaluated in Section 5.1.7 (Vessel Presence and Movements - Interaction with fauna). Based upon the nature and scale of the activities, and the low likelihood for OWR, the evaluation is considered appropriate for any physical interaction with marine fauna, and thus has not been considered further in this Section.

5.3.6.3 Controls

Emergency response planning is outlined in Chapter 8. The potential impacts and risks associated with performing these activities is covered under the aspects evaluated in this EP (Sections 5.1.1 to 5.3.5), and thus are not considered further.

Source control arrangements for LOC from vessel tank failures includes:

- Closing water tight doors;
- Checking bulkheads;
- Determining whether vessel separation will increase spillage;
- Isolating penetrated tanks;
- Tank lightering, etc.

Implementation of source control for vessels is detailed within the documents listed below, and therefore is not discussed further in this EP:

- Vessel-specific Shipboard Oil Pollution Emergency Plan (SOPEP)
- National Plan for Maritime Environmental Emergencies (NationalPlan)

The controls that relate to response strategies are summarised in Table 5-17 and include:

- Esso maintains capability to implement operational monitoring in a Level 2 or 3 spill event.
    - Agreements: AMOSC membership, AMSA MoU, Aviation support, Marine support services
    - Oil Spill Tracking Buoys
- As requested by the relevant CA, Esso implements operational monitoring to inform spill response (Level 2 or 3 spill only). Key tools include:
    - Oil Spill Tracking Buoy Deployment
    - Response - Observation
    - Oil Spill Trajectory Modelling
    - Response – Oil Spill Vector Calculation
- Esso maintains capability to support oiled wildlife management in a Level 2 or 3 spill event. Esso provides resources to support oiled wildlife response strategies as directed by DELWP.

Table 5-16 List of values and sensitivities identified within and near the Operational ZPI

Area	Distance and direction from operational area	Actionable thresholds (Operational ZPI Figure 4-1)	Environmental Monitoring ZPI* (Figure 4-2)	Values and Sensitivities
Upwelling East of Eden (KEF)	~20 km E	Y	Y	• KEF associated with high productivity and aggregations of marine life • Dynamic eddies of the East Australian Current cause episodic productivity events when they interact with the continental shelf and headlands. The episodic mixing and nutrient enrichment events drive phytoplankton blooms that are the basis of productive food chains including zooplankton, copepods, krill and small pelagic fish. • The upwelling supports regionally high primary productivity that supports fisheries and biodiversity, including top order predators, marine mammals and seabirds. • This area is one of two feeding areas for Blue Whales and Humpback Whales, known to arrive when significant krill aggregations form. • The area is also important for seals, other cetaceans, sharks and seabirds
Big Horseshoe Canyon (KEF)	~80 km E	Y	Y	• KEF associated with high productivity and aggregations of marine life • The Big Horseshoe Canyon is the easternmost arm of the Bass Canyon systems • The steep, rocky slopes provide hard substrate habitat for attached large megafauna. • Sponges and other habitat forming species provide structural refuges for benthic fishes, including the commercially important Pink Ling • It is the only known temperate location of the stalked crinoid *Metacrinus cyanea*
Beware Reef Marine Sanctuary	150 km NE	N	Y	• State marine protected area, IUCN Category II • Indigenous heritage associated with the Bidwell and Gunai-Kurnai Indigenous people • Maritime heritage including three steamship wrecks (Auckland, Ridge Park and Albert San) • The sanctuary is in Tourism Victoria's Destination Gippsland marketing and promotion for the East Gippsland region • Range of habitats, including subtidal and intertidal reefs, exposed reefs and subtidal soft sediment; with coverage including soft corals, sponges and Bull Kelp • Haul-out area for Australian and New Zealand Fur-seals • Diverse range of fish, invertebrate, mammal and bird species

Area	Distance and direction from operational area	Actionable thresholds (Operational ZPI Figure 4-1)	Environmental Monitoring ZPI* (Figure 4-2)	Values and Sensitivities
Point Hicks Marine National Park	100 km NE	N	N	• State marine protected area, IUCN Category II • Indigenous heritage associated with the Bidwell and Gunai-Kurnai Indigenous people • Maritime heritage including two steamship wrecks (Kerangie and Saros) Range of habitats, including subtidal and intertidal reefs, subtidal soft sediment and sandy beaches; with coverage including brown macroalgae, sponges, and soft corals • Very high diversity of fauna, including intertidal and subtidal invertebrates, marine mammals (whales, dolphins, pinnipeds), birds
Beagle CMR	150 km SW	N	Y	• Beagle CMR is a shallow reserve that surrounds a collection of Bass Strait islands. T • Supports a rich array of life, • Provides homes and feeding grounds for seabirds, Little penguins and Australian fur seals. • Located near the Hogan, Curtis and Kent island groups which is an important breeding area for the Fairy prion, Shy albatross, Silver gull, Short tailed shearwater, Black faced cormorant, Australian gannet, Common diving petrel and Little penguins.
Great white shark BIA breeding	75 km W	N	Y	• The nearshore region from Corner Inlet to Lakes Entrance is one of three identified residency regions in Australia for juvenile Great White Sharks • Sharks will aggregate in this area seasonally
East Gippsland CMR	175 km E	N	Y	• Commonwealth marine protected area, IUCN Category VI • Ecosystems, habitats and communities associated with the Southeast Transition, and associated with the sea-floor features including abyssal plain/deep ocean floor, canyon, escarpment and knoll/abyssal hillslope • Features with high biodiversity and productivity: Bass Cascade; Upwelling East of Eden • Important foraging area for the Wandering, Black-browed, Yellownosed and Shy Albatrosses, Great-winged and Cape Petrels, and the Wedge-tailed Shearwater • Important migration area for the Humpback Whale
Gabo Island	225 km NE	N	Y	• Significant breeding colony (possibly largest in world) for the Little Penguin • Breeding colony for Short-tailed Shearwaters • Foraging area for a number of birds including the White-belled Sea Eagle • Marine mammals regularly sighted off Gabo Island, including Southern Right Whales, Humpback Whales and Killer Whales; and the Common and Bottlenose Dolphins

Area	Distance and direction from operational area	Actionable thresholds (Operational ZPI Figure 4-1)	Environmental Monitoring ZPI* (Figure 4-2)	Values and Sensitivities
				• Australian and New Zealand Fur-Seals are also often seen basking on the rocks surrounding the island
Cape Howe Marine National Park	225 km NE	N	Y	• State marine protected area, IUCN Category II • Indigenous heritage associated with the Bidwell Indigenous people • The sanctuary is in Tourism Victoria's Destination Gippsland marketing and promotion for the East Gippsland region • Range of habitats, including subtidal and intertidal reefs, subtidal soft sediment and sandy beaches; with coverage including kelp forests, sponges, and soft corals • Foraging area for significant colony of Little Penguins • Humpback Whales pass by Cape Howe on their migration from Antarctica • Diverse range of invertebrates, mammals (whales, dolphins, pinnipeds) and birds
Croajingolong National Park (specifically The Skerries)	200 km NE	N	Y	• Together with Nadgee Nature Reserve (NSW) is a designated UNESCO World Biosphere Reserve • The Skerries, offshore from Wingan Inlet, is a major seal breeding colony with an estimated population of 11,500 representing approximately 12% of the national population. • The near-coastal areas are significant breeding and foraging habitat for the Eastern bristlebird and seabirds such as the Short-tailed shearwater, Crested tern and Gannet.
Australian Whale Sanctuary (Commonwealth Protected Area) Southern right whale BIA Pygmy Blue whale BIA	overlaps overlaps overlaps	Y	Y	• Whale BIAs, including calving and aggregation areas, within the South-east Marine Region have been identified. • Southern right whales regularly aggregate for breeding and calving off Warrnambool, Victoria, with calving areas tending to be very close to the shore. • The South-east Marine Region is an important migratory area for the Pygmy blue whale. The Bonney Upwelling and adjacent waters off South Australia and Victoria provide one of the most significant feeding aggregation areas for Blue whales in Australian waters (November to May). Pygmy blue whales predominately occupy the western area of the Bonney Upwelling from November to December, and then move south-east during January to April.
Humpback whale BIA	250 km NE	N	Y	• Humpback whale feeding has been observed close to shore off Eden, New South Wales, from late September until late November (SPRAT 2013a).
Seabirds BIAs	overlaps	Y	Y	

5.3.6.4 Risk Assessment and Ranking

The risks evaluation for emergency response tools are outlined in Chapter 6. The environmental risks associated with emergency response are largely addressed under the risks for planned pipeline repair operations.

- Table 6-2: Response technique evaluation for MDO Spill Risks are as per project activities: noise, vessel collisions, spills etc. (as described in Chapter 5).

5.3.6.5 Demonstration of ALARP

To demonstrate that the impacts and risk associated with response strategies have been reduced to ALARP other controls and alternatives were considered as summarised in Chapter 6.

Modelling shows that shoreline contact is not expected to occur as a result of a MDO spill from a vessel collision. Therefore no specific shore-based contingencies will be in place for the CBA PRP campaign, other than those already in place as part of Esso operations in Bass Strait.

There were no further alternatives identified to the response strategies as they are defined in in Chapter 6 and the OPEP. On this basis Esso considers the risk to be ALARP.

5.3.6.6 Demonstration of Acceptability

Details of Esso's capability to mount a suitable spill response is included in Chapter 6, the OPEP and OSMP.

The response strategies, as detailed in Section 6.2 are consistent with standard industry practice. This includes:

- Having a well-resourced response team, equipment, resources and logistics for industry to consult with relevant authorities on spill plans in line with the "Polluter pays" principle in the OPGGS Act and 'consultation' principles in the OPGGS(E) Regulations 2009.
- Establishing exclusion zones (which are commonly established for any emergency operations).

Esso considers the impacts and risks of response strategies are acceptable in accordance with the criteria defined in Section 4.3.

5.4 Environmental Performance Outcomes, Performance Standards and Measurement Criteria

This section outlines:

- The environmental performance outcomes against which the performance in protecting the environment can be measured
- The performance standards that are applied to ensure control measures implemented in order to manage environmental impacts and risks to ALARP and acceptable levels
- The measurement criteria that will define how environmental performance is measured against performance outcomes and performance standards.

Table 5-17 provides the full list of performance outcomes, performance standards and measurement criteria that have been developed for the CBA PRP. The responsibility for each performance standard has been assigned and accepted by the person in the designated role.

Every control listed in the Chapter 5 is listed again below with the corresponding Environmental Performance Outcomes, Environmental Performance Standards and Measurement Criteria.

Table 5-17 List of performance outcomes, performance standards and measurement criteria

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
Routine Offshore Activities							
1	Vessel sewage, greywater and food waste discharge	Sewage, greywater and food waste disposal to the marine environment.	Sewage discharges comply with Martine Order 96 (Marine pollution prevention – sewage) 2018 (MARPOL Annex IV) requirements.	MARPOL-compliant sewage treatment plant	A MARPOL-compliant sewage treatment system will be fitted to the DSV and HRT	Valid International Sewage Pollution Prevention certificate.	Vessel Master
				Sewage discharges in line with MARPOL conditions	Discharge of comminuted and disinfected sewage using a MARPOL-compliant sewage treatment plant at a distance of no less than 3NM from nearest land. Discharge of untreated sewage at a distance of no less than 12 NM from nearest land.	Daily report to confirm treated or untreated sewage discharged no less than 3NM or 12NM distant from nearest land, respectively.	Vessel Master
				Planned Maintenance System	Sewage treatment plants are maintained in accordance with the corrective and preventative maintenance program.	Pre-mobilisation inspection confirms the on-board sewage treatment plant is maintained as per equipment maintenance schedules	Vessel Master
						Daily report to confirm availability of sewage treatment plant	
			Putrescible waste discharges comply with Martine Order 95	Food waste macerated	Food waste macerated to ≤25 mm (using an onboard macerator) before discharge	Garbage Record Book shows that putrescible waste is macerated before discharge	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
			(Marine pollution prevention – garbage) 2018 (MARPOL Annex V) requirements.	Food waste discharges	Macerated putrescible waste is only discharged overboard when the vessel is greater than 3 NM from the coastline and while proceeding en-route. Un-macerated putrescible waste is only discharged overboard when the vessel is more than 12 NM from the coastline and while proceeding en-route. Un-macerated putrescible waste is not discharged within the existing 500m PSZ of offshore platforms	Discharge log verifies location of vessel is >3 NM from the coast (if waste is macerated) or >12 NM (and not within offshore platform PSZ) at time of discharge (if waste is not macerated).	
				Planned Maintenance System	Macerators are maintained in accordance with the corrective and preventative maintenance program.	Pre-mobilisation inspection confirms the on-board macerator is maintained and operational as per equipment maintenance schedules	Vessel Master
				Environmental induction	All personnel have completed an environmental induction covering the requirements for food waste discharges	Induction records verify that all personnel have completed an environmental induction which includes garbage management arrangements.	
2	Underwater noise from vessels	Underwater noise from vessels affecting marine fauna or cetacean behaviour	All personnel are aware of marine mammal/vessel interaction regulations	Environmental Inductions	All personnel have completed an environmental induction covering the requirements for marine mammal/vessel interaction consistent with EPBC Regulations – Part 8 Division 8.1 and are familiar with the requirements. This includes a requirement to notify the bridge and EAPL personnel if marine mammals are sighted in the caution zone.	Induction records verify that all personnel have completed an environmental induction which includes requirements for marine mammal/vessel interaction	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
			Reporting of megafauna sighting	Fauna observation	Crew members on active duty will report observations of megafauna located within the caution zone to the vessel master (or their delegate) and EAPL personnel, as soon as it is safe to do so.	Daily vessel reports note when cetaceans were sighted in the caution zone and if interaction management actions were implemented.	Vessel Master
			No injuries or death of macrofauna resulting from vessel strike within operational area.	'Caution' zones and 'no approach' zones	Vessel masters will be briefed on 'caution' and 'no approach' zones and interaction management actions as defined in the EPBC Regulations – Part 8 Division 8.1	Training records confirm that vessel masters have been briefed on 'caution' and 'no approach' zones and interaction management actions as defined in the EPBC Regulations – Part 8 Division 8.1.	Vessel Master
					A vessel master (or delegate) will be on duty at all times	Bridge watch records confirm vessel master (or delegate) on duty at all times.	Vessel Master

				Fauna interaction management actions - vessels	Where practicable vessels adhere to the distances and vessel management practices of EPBC Regulations - Part 8 Division 8.1: • Vessels will travel at less than 6 knots within the caution zone of a cetacean and minimise noise (Caution zone is defined as 150m radius for dolphins, 300 m for whales and 50 m for seals). • The vessel must not drift closer than 50 m (dolphins and seals) and 100 m (whale); • If whale comes within above limits, the vessel master will, if practicable, disengage gears and let the whale approach or reduce the speed of the vessel and continue on a course away from the whale; • The vessel must not restrict the path of a marine mammal. • The vessel must not separate any individual from a group of marine mammals or come between a mother whale and calf or a seal and pup; • If the vessel is within the caution zone of a marine mammal the vessel must move at a constant speed that does not exceed 5 knots, avoids sudden changes in speed or direction and manoeuvres the vessel to outside the caution zone if the marine mammal shows any sign of disturbance; • Additionally, if a vessel is within the caution zone of a marine mammal, the vessel shall not approach a marine mammal from head on, from the rear or be in the path ahead of a marine mammal at an angle closer than 30° to its observed direction of	Daily operations reports note when cetaceans were sighted in the caution zone and if interaction management actions were implemented, and the reasoning for lack of action if none taken.	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
					travel.		
			Minimise noise	Preventative Maintenance System (PMS)	PMS ensures that engines and propulsion systems are maintained in accordance with manufacturer specifications to reduce noise radiated from vessels to as low as possible.	Pre-mobilisation inspection record shows routine completion of maintenance in accordance with manufacturer specifications or preventative maintenance system	Vessel Master
	Lighting from vessels	Light affecting marine fauna and sea birds	Lighting will be limited to that required for safe navigation and work requirements	Lighting will be limited	Lighting will be limited to that required for safe navigation and work requirements by minimising light spill to sea.	Premobilisation Inspection verifies light spill to sea is minimised, except where required for safe work/navigation.	Vessel Master
3	Vessel deck drainage	Discharge of oil and/or chemical contaminated deck drainage into marine environment.	Deck drainage discharges comply with Marine Order 95 (Marine pollution prevention – garbage) 2018 (MARPOL Annex V) requirements.	Scupper plugs	Vessels have scupper plugs fitted for use in overboard drains.	Pre-mobilisation inspections confirm presence of scupper plugs.	Vessel Master
				Secondary containment for fuel, oil and chemical storage	Fuel, oil and chemical stores are located within a deck bund.	Pre-mobilisation inspections confirm fuel, oil and chemicals are stored within secondary containment.	
				Secondary containment for hazardous liquid wastes	Hazardous liquid waste (i.e. waste oil and chemicals) stored within a deck bund	Pre-mobilisation inspections confirm hazardous liquid wastes stored within secondary containment.	

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Environmental awareness induction	All personnel have completed an environmental induction covering the requirements for storage and handling of oil and chemicals.	Induction records verify that all personnel have completed an environmental induction which oil and chemical storage and handling.	
			Use of deck cleaning products which are not harmful to the aquatic environment	Selection of deck cleaning products which are not harmful to the aquatic environment	Deck cleaning product selected is not "harmful substance" in accordance with criteria in Appendix to MARPOL Annex III or contains a component that is carcinogenic, mutagenic or reprotoxic.	SDS available which provides information that the chemical/product meets the criteria for not being harmful to the aquatic environment	
4	Vessel oily water (bilge) discharge	Discharge of oily water to the marine environment	Bilge discharges from vessels comply with Marine Order 91 (Marine pollution prevention – oils) 2018 (MARPOL Annex I) requirements.	Oily-water separation equipment	For vessels > 400 tonnes, bilge water passes through a MARPOL-compliant Oily Water Separator (OWS).	International Oil Pollution Prevention (IOPP) certificate or equivalent documentation appropriate to vessel class.	Vessel Master
				Comply with MARPOL Annex I bilge discharge requirements.	For vessels > 400 tonnes, treated bilge water discharge permitted if: • Vessel is proceeding en-route • Treatment is via a MARPOL compliant OWS; • The discharged oil-in-water (OIW) content is < 15 ppm; • Oil Detection Monitoring Equipment (ODME) and control equipment are operating. For vessels < 400 tonnes bilge discharge permitted if: • Vessel is proceeding en-route; • MARPOL-compliant equipment ensures OIW content< 15 ppm. • If the above is not met the bilge must be retained in on-board storage tanks for onshore disposal or further treatment.	Pre-mobilisation inspection confirms that an OWS is in place, that an ODME is operational, and certification demonstrates compliance with MARPOL Annex I for bilge discharge requirements.	Vessel Master
						Vessel Oil Record Book shows all discharges met <15ppm OIW requirements	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				OWS system reliability	OWS and ODME (appropriate to vessel size) are routinely maintained and system elements calibrated to ensure reliable discharge concentrations are being met.	Preventative Maintenance System (PMS) records confirm OWS and ODME are routinely calibrated and maintained	Vessel Master
						Daily report to confirm availability of OWS.	
				Onshore disposal of residual oil	The residual oil from the OWS is pumped to tote tanks and disposed of onshore.	The Oil Record Book verifies that residual oil is transferred to shore.	Vessel Master
5	Ballast water discharge	Unplanned introduction and transmission of invasive species.	No introduction of non-endemic marine species through ballast water.	No discharge of ballast water while conducting petroleum activities	No planned discharge of ballast water while conducting petroleum activities. Discharge is only acceptable in the event of an emergency scenario threatening the safety of the vessel.	Daily reports include details of any ballast water uptake or discharge.	Vessel Master
				Maritime Arrivals Reporting System (MARS)	DAWR clearance is obtained to enter Australian waters through pre-arrival information reported through MARS no later than 12 hours prior to arrival.	Records confirm pre-arrival report submitted to DAWR no later than 12 hours prior to arrival.	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Ballast Water Management Plan (BWMP) and Certificate (BWMC)	Ballast Water Management Plan approved in accordance with IMO Ballast Water Management Convention - Guidelines for Ballast Water Management and Development of Ballast Water Management Plans including • vessel name and IMO number • rank(s) of the responsible officer and crew • ballast water management method and pumping rates Ballast Water Management Certificate approved in accordance with Regulation E-1 of the Ballast Water Convention including • vessel name and IMO number • principal ballast water method(s) used • end date up to five years from time of inspection	Vessel holds an approved BWMP and BWMC	
				Exchange of ballast water outside Australian waters	In accordance with the IMO BWM convention Annex B-4 • International ballast water will be exchanged in >200m of water and >200Nm from land prior to the vessel arriving in Australian waters.	Reports of ballast water discharges and the Ballast Water Record System demonstrate that ballast water was managed through an approved method.	Vessel Master
				Report ballast water discharges	Vessels that are intending to discharge internationally sourced ballast water must submit a Ballast Water Report through MARS at least 12 hours prior to arrival in Australian waters. Vessels not intending to discharge should also submit a Ballast Water Report.	Daily reports include details of any ballast water uptake or discharge and records confirm all ballast water discharges were reported through MARS.	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Maintain a Ballast Water Record System	A Ballast Water Record System will be maintained in accordance with Regulation B-2 of the Annex to the IMO Ballast Water Management Convention including • start and finish coordinates • start and finish times for pumping water during an exchange • actual pumping times (these should not be affected by the crossing of time zones) • residual volume remaining in the tank at the end the empty cycle prior to refill (empty refill method only) • signature of the officer in charge of the operation.	Review of the Ballast Water Record System confirms it is being maintained.	Vessel Master
6	Vessel biofouling & biosecurity	Unplanned introduction and transmission of invasive species.	No introduction of non-endemic marine species through hull fouling or quarantine breaches	Anti-fouling Certificate	For vessels >400 tonnes, International Anti-fouling System Certification is current in accordance with Marine Order 98 (Marine pollution - anti-fouling systems) 2013 Ships of 24 m or more in length but < 400 tonnes (engaged in international voyages) will have a valid Declaration on Anti-fouling Systems in accordance with Marine Order 98 (Marine pollution - anti-fouling systems) 2013	Pre-mobilisation inspection confirms that the vessel's International Anti-fouling System Certificate (or Declaration) is valid	Vessel Master
				IMS Risk Assessment Procedure (IMS-RAP)	Vessels will undertake IMS Risk Assessment in accordance with Esso IMS-RAP to confirm that IMS risk is low / acceptable.	Pre-mobilisation inspection confirms that IMS Risk Assessment confirming low / acceptable IMS risk has been undertaken and is still valid.	Esso Project Manager

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Biofouling record book	A biofouling record book will be maintained in accordance with Appendix 2 Guidelines for the Control and management of Ships' Biofouling to minimise the Transfer of Invasive Aquatic Species (IMO, 2011) including • details of anti-fouling systems and operational practices used, where and when installed, areas of ship coated, its maintenance and, where applicable, its operation • dates and location of dry dockings/slippings including refloat date and any measures to remove biofouling or renew or repair the anti fouling system • dates and location of in-water inspections, the results of inspection and any corrective action taken • dates and details of inspection and maintenance of internal seawater cooling systems, results of inspections and any corrective actions taken • details of when ship operating outside of normal operating profile.	Review of the record books confirm they are in place and maintained.	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Biofouling management plan	A biofouling management plan will be maintained in accordance with Appendix 1 Guidelines for the Control and management of Ships' Biofouling to minimise the Transfer of Invasive Aquatic Species (IMO, 2011) including • description of anti-fouling system • description of operating profile • description of areas susceptible to biofouling and management actions for each area • operation and maintenance of the ant-fouling system • safety procedures • waste disposal procedures • recording requirements (Biofouling Record book) • crew training	Review of the biofouling management plans confirm they are in place and maintained.	Vessel Master
				In-water Equipment Cleaning	All in-water equipment has been removed from the water, inspected and cleaned (where required) prior to deployment within Australian territorial sea (<12 NM from nearest shore).	Records verify in-field equipment does not present an IMS risk.	Vessel Master
			No introduction of non-endemic terrestrial species into Australia	Customs clearing for all international goods	All international goods are cleared through Customs prior to mobilisation to DSV in accordance with DAWR requirements	Records confirm that all international goods have been cleared through Customs prior to mobilisation	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
7	Vessel presence and movements	Unplanned interference and/or collision with marine fauna	No injuries or death of marine mammals resulting from vessel within operational area.	Caution and 'no approach zones	Vessel masters will be briefed on caution and 'no approach zones' and interaction management actions as defined in the EPBC Regulations 2000 – Part 8 Division 8.1	Training records confirm that vessel masters have been briefed on caution and 'no approach zones' and interaction management actions as defined in the EPBC Regulations 2000 – Part 8 Division 8.1.	Vessel Master
					A vessel master (or delegate) will be on duty at all times	Bridge watch records confirm vessel master (or delegate) on duty at all times.	Vessel Master
				Fauna interaction management actions	Vessels adhere to the distances and vessel management practices of EPBC Regulations (Part 8) and Wildlife (Marine Mammals) Regulations 2009 (Part 3(9)) where practicable: • Vessels will travel at less than 5 knots within the caution zone of a cetacean and minimise noise (Caution Zone is 150m radius for dolphins, 300 m for whales and 50m for seals). • The vessel must not drift closer than 50 m (dolphins and seals) and 100 m (whale); • If whale comes within above limits, the vessel master will, if practicable, disengage gears and let the whale approach or reduce the speed of the vessel and continue on a course away from the whale; • The vessel must not restrict the path of a marine mammal. • The vessel must not separate any individual from a group of marine mammals or come between a	Daily operations reports note when cetaceans were sighted in the caution zone, interaction management actions implemented, and the reasoning for lack of action if none was taken.	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
					mother whale and calf or a seal and pup; • If the vessel is within the caution zone of a marine mammal the vessel must move at a constant speed that does not exceed 5 knots, avoids sudden changes in speed or direction and manoeuvres the vessel to outside the caution zone if the marine mammal shows any sign of disturbance; Additionally, if a vessel is within the caution zone of a marine mammal, the vessel shall not approach a marine mammal from head on, from the rear or be in the path ahead of a marine mammal at an angle closer than 30° to its observed direction of travel.		
				Fauna observation	Crew members on active duty will report observations of megafauna located within the caution zone to the vessel master (or their delegate) and EAPL personnel, as soon as it is safe to do so.	Daily vessel reports note when cetaceans were sighted in the caution zone and if interaction management actions were implemented.	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
					EAPL Vessel personnel will have training in EPBC Regulations - Part 8 Division 8.1 and will investigate / report any megafauna observation using a cetacean sighting form	Training records confirm that EAPL vessel personnel have been briefed on caution and 'no approach zones' and interaction management actions as defined in the EPBC Regulations 2000 – Part 8 Division 8.1.	Esso Project Manager
				Environmental Induction	All personnel have completed an environmental induction covering the requirements for marine mammal/vessel interaction consistent with EPBC Regulations – Part 8 Division 8.1 and are familiar with the requirements. This includes a requirement to notify the bridge and EAPL representatives if marine mammals are sighted.	Induction records verify that all personnel have completed an environmental induction	Esso Project Manager
				Tunnel thrusters designed to minimise the risk of injury to marine mammals	DSV tunnel thrusters designed to minimise the risk of injury to marine mammals	Pre-mobilisation inspection confirms that DSV tunnel thrusters have been fitted with grills.	Vessel Master
8	Vessel fuel combustion equipment and incinerator	Air emissions	Fuel combustion equipment complies with the requirements of Marine Order 97 (Marine pollution prevention- air pollution) 2013	IAPP Certification	Vessels > 400 tonnes hold valid IAPP	Certification documentation verified via pre-mobilisation inspection	Vessel Master
				Use of low sulphur diesel	Only low-sulphur (<3.5% m/m) marine-grade diesel will be used in order to minimise SOx emissions.	Manifests for fuel transfers will record that diesel was received; MDO SDS confirms low sulphur.	

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
			(MARPOL Annex VI)			Daily report details volume and type of fuel burnt	
				Equipment Maintenance (PMS)	All combustion equipment on vessels are maintained in accordance with the vessel PMS (or equivalent).	PMS records verify that combustion equipment is maintained to schedule.	
				Ship Energy Efficiency Management Plan	Vessels > 400 tonnes are operating in accordance with Ship Energy Efficiency Management Plan	Pre-mobilisation inspection confirms that vessel operators are operating in accordance with certified emission standards as per Ship Energy Efficiency Management Plan	Vessel Master
				Vessels with diesel engines>130 kW must be certified to emission standards	Valid EIAPP certification	Certification documentation verified via pre-mobilisation inspection	Vessel Master
					Vessel engine NOx emission levels will comply with Regulation 13 of MARPOL Annex VI.	Records verify compliance with Regulation 13 of MARPOL Annex VI.	
			Incinerator in compliance with Marine Order 97 (Marine pollution prevention- air pollution) 2013 (MARPOL Annex VI)	Certification	Valid IMO Type Approval Certificate (or exclusion from that requirement)	Certification documentation verified via pre-mobilisation inspection	Vessel Master
				Operator training	Operators trained in the requirements of the manufacturer's operating manual.	Manufacturer's operating manual available and training records confirm incinerator operators have been trained in its requirements.	
				Operation in accordance with MARPOL Annex VI	Operation in accordance with MARPOL Annex VI:	Garbage Record Book records all incineration.	

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
					• No incineration of prohibited materials • Combustion chamber outlet temperature >850°C	Daily report includes details of waste incineration and confirms no incineration of prohibited materials.	
						Records confirm incinerator temperature requirements achieved.	
9	Vessel presence – interference with other marine users	Disruption to fishing or shipping activities	All relevant marine users will be notified of activities prior to operations	Stakeholder notification	All relevant stakeholders will be notified of activities approximately 4 weeks and 1 week prior to operations commencing	Stakeholder consultation records database confirm that pre-start notices were sent to all relevant stakeholders	Offshore Risk, Environment & Regulatory Supervisor
				Ongoing consultation with fishing and shipping groups.	Consultation with marine users to minimise disruption.	DSV daily report to include log of events / interactions with commercial fishing.	Vessel Master
						Stakeholder consultation records show that relevant commercial fishers have been informed of activities and their concerns addressed	Offshore Risk, Environment & Regulatory Supervisor
						SMS alerts issued to SETFIA fishing contacts to raise the awareness of the project activities, including when and where they are taking place	

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Vessel Crew and Navigational Equipment	Vessels will meet the requirements of Marine Order 30 (Prevention of collisions) 2016 including: • adherence to steering and sailing rules including maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar) • adherence to navigation light display requirements, including visibility, light position/shape appropriate to activity • adherence to navigation noise signals as required.	Training and competency records indicate that vessels meet the crew competency, navigation equipment, and radar requirements of the AMSA Marine Orders Daily reports confirm availability of vessel navigation systems	Vessel Master
					Vessels will meet the requirements of Marine Order 21 (Safety and emergency arrangements) 2016 including: • adherence to minimum safe manning levels • maintenance of navigation equipment in efficient working order (compass/radar) • navigational systems and equipment required are those specified in Regulation 19 of Chapter V of SOLAS • Automatic Identification System (AIS) that provides other users with information about the vessel's identity, type, position, course, speed, navigational status and other safety-related data.		

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Pre-start notifications	AMSA JRCC notified 24-48 hours before operations commence to enable AMSA to distribute an AUSCOAST warning.	Stakeholder consultation records confirm that information to distribute an AUSCOAST warning was provided to the JRCC	Offshore Risk, Environment & Regulatory Supervisor
					AHS notified no less than 4 working weeks before operations commence to allow generation of navigation warnings (including Notice to Mariners).	Stakeholder consultation records confirm a Notice to Mariners was provided to the AHS at least four weeks before operations commenced	
					Relevant Stakeholders will be notified of activities approximately one month and again one week prior to commencement	Stakeholder consultation records confirm that information was distributed to relevant stakeholders in required timeframes.	
Pipeline Repair Operations							
10	Riser Cutting	Discharge of inhibited seawater to the marine environment	Impact of discharged inhibited water assessed and minimised	Dispersion modelling conducted and risk determined to be low	Dispersion study completed and risks shown to be low.	Dispersion study issued for use.	Esso Project Manager
				CBA300 end plugs	Ends of CBA300 plugged to prevent ingress of seawater	Post pipeline repair ROV survey confirms ends of CBA300 have been plugged.	Esso Project Manager
11	Connection of new flexible pipeline	Discharge of inhibited demineralised water / dye to the marine environment	Use inhibitor and dye that minimises environmental impact of discharge	Low impact inhibitor and dye used	Only CHARM gold / silver or OCNS E / D rated chemicals or equivalent are approved for use where discharge may occur in accordance with Esso Chemical Selection Procedure (Section 8.9.1).	Manufacturer's records confirm chemicals approved in accordance with Esso Chemical Selection Procedure.	Esso Project Manager
12	Installation of new flexible pipeline	Seabed disturbance	Installation procedures minimise seabed disturbance	Approved lifting / installation procedures	The DSV will apply approved lifting / mattress installation procedures	Lift plan is in place for vessel unloading.	Vessel Master
				Planned Maintenance System	Lifting gear is maintained in accordance with manufacturer specifications	Lifting gear service and maintenance records.	

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Number of mattresses installed limited to 10	Maximum of ten mattresses to be laid	Post-pipeline repair ROV survey confirms number of mattresses laid	Esso Project Manager
				Pipeline placement minimises seabed disturbance during pull-in.	Pipeline ends laid within 25m of the platforms to minimise seabed disturbance during pulling-in.	Pipeline installation records and post-pipeline repair ROV survey confirms pipeline placement.	
			No seabed disturbance from anchoring	No anchoring	No anchoring of DSV or HRT during normal operations unless in an emergency	Daily report confirms no anchoring	Vessel Master
13	Presence of new flexible pipeline – interference with other marine users	Disruption to commercial / recreational fishing and shipping	All relevant marine users will be notified of new flexible pipeline location	No change to pipeline route	New flexible pipeline adjacent to existing CBA300 pipeline	Post pipeline repair ROV survey confirms location of new flexible within 25m of CBA300	Esso Project Manager
				AHS Nautical Charts	CBA pipeline location shown on AHS nautical charts	Stakeholder engagement records show AHS notified of any necessary changes to location of CBA(300 and 150) pipeline	Offshore Risk, Environment & Regulatory Supervisor
			No new snagging hazards outside of existing platform PSZs	Pipeline design and installation – mattress placement confined to PSZ	No mid point join in pipeline	Post pipeline repair ROV survey confirms no mid point join	Esso Project Manager
					All mattresses placed within existing platform PSZs.	Post pipeline repair ROV survey confirms all mattresses placed in existing platform PSZs.	
14	Presence of redundant CBA300 pipeline	Release of inhibited seawater to the marine environment	Discharge of inhibited water assessed and minimised by use of end plugs.	CBA300 end plugs	Ends of CBA300 plugged to prevent ingress of seawater / egress of inhibited water	Post pipeline repair ROV survey / as left status confirms ends of CBA300 have been plugged	Esso Project Manager
				Dispersion modelling conducted and risk determined to be low	Dispersion study completed and risks shown to be low.	Dispersion study issued for use.	Esso Project Manager

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
			Pipeline maintained in a condition to enable surface retrieval, if required, at field decommissioning	Implement equipment strategy for pipeline with the objective to maintain pipeline in a condition to enable surface retrieval, if required, at field decommissioning.	OIMS System 6-2 Facility Integrity Management System (FIMS), Program 03 [Pipelines] Equipment Strategy with the objective to maintain pipeline in a condition to enable surface retrieval, if required, at field decommissioning including a 5 year ROV visual inspection	The maintenance workorder management system shows pipeline has been maintained in accordance with the equipment strategy for pipelines defined under FIMS Program 03 [Pipelines].	Pipelines Supervisor
						The maintenance workorder management system shows a 5 year ROV visual inspection has been undertaken.	
Unplanned Events							
15	Loss of hazardous and non-hazardous waste	Unplanned release of hazardous or non-hazardous waste to the marine environment	No unplanned release of hazardous or non-hazardous waste to the environment.	Garbage Management Plan.	Vessel contractors will have a Garbage Management Plan in place which outlined procedures for handling storing, processing and disposing of garbage.	Review of the Garbage Management Plan confirms it is in place and maintained.	Vessel Master
				Garbage Record Book	A Garbage Record Book / log will be in place and maintained in accordance with Marine Order 95 (MARPOL Annex V).	Review of the Garbage Record Book confirms it is in place and maintained	Vessel Master
				Environmental inductions.	All personnel have completed an environmental induction covering the correct waste management procedures.	Induction records verify all personnel have completed and environmental induction which included correct waste management procedures.	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Waste handling and storage	Handling of solid and hazardous wastes on-board will comply with the requirements of Marine Order 95 (MARPOL Annex V). Including measures such as; • All hazardous and non-hazardous wastes generated at sea during the activity will be retained on the vessel and disposed of onshore by a licensed Waste Management Contractor (excluding bilge water, putrescible waste and sewage). • All waste material that could reasonably be lost overboard is stored securely (e.g. lidded bins). • All wastes including hazardous wastes and chemicals will be segregated into clearly marked containers. • Any liquid waste storage on deck must have at least one barrier (i.e. bunding) to prevent leakage or spillage entering the marine environment.	Inspection verifies that waste is stored and handled according to its waste classification and waste receptacles are properly located, sized, labelled, covered and secured for the waste they hold.	Vessel Master
16	Accidental release - dropped and overboard objects	Accidentally dropped / lost overboard objects cause seabed disturbance	Prevent loss of containment due to dropped objects	Installation procedures and Permit-to-Work	HLA100 fuel gas pipeline shut down and depressurised while the vessel is alongside CBA or HLA, or above the pipeline crossing.	Permit-to-Work confirm HLA fuel gas pipeline shut down and depressurised while the vessel is alongside CBA or HLA, or above the pipeline crossing.	Operations Superintendent Offshore Oil
			Prevent dropped objects to the marine environment.	Approved lifting procedures	The DSV will apply approved lifting / installation procedures	Lift and installation procedures reviewed and approved and in place for vessel campaign	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Compliance with weather limitations during petroleum activities and DSV to seek shelter in the event of extreme weather	Weather conditions reviewed for acceptability prior to PSZ entry and prior to installing flexible pipeline in line with the installation procedures.	Daily Progress Reports (DPR) show weather conditions recorded and reviewed against weather limitation and task duration criteria during vessel mobilisation prior to PSZ entry and on a 6 hourly basis during the execution of the works. DPR shows criteria applied in accordance with outcome of weather conditions review, and records weather downtime.	
					In the event of extreme weather vessel seeks shelter as per vessel procedures and marine guidelines	Daily report includes weather and forecast conditions and vessel status / location.	
				Planned Maintenance System	Lifting gear is maintained in accordance with manufacturer specifications	Lifting gear service and maintenance records.	
				Securing on deck of materials and equipment	All materials and equipment on deck will be adequately secured to avoid loss overboard during storm, swell or heavy wind conditions	Vessel inspections confirm that deck items are adequately secured.	Vessel Master
				Inductions include dropped object prevention	All personnel will complete a vessel induction which includes a prevention of dropped objects component to increase awareness of requirements.	Induction records show all personnel have completed an induction which includes dropped object training.	Vessel Master
				Remove dropped objects at completion of project	ROV inspection of the seafloor post pipeline repair confirms that no unplanned CBA PRP equipment has been abandoned on the seabed and if so that it is removed where practicable.	Records confirm that a post-project ROV survey was completed and that any identified dropped objects are removed where practicable	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
17	Accidental release – foam deluge system	Unplanned release of foam	No release of fire-fighting foam to the marine environment.	No testing of foam deluge system resulting in release of foam to the marine environment.	No release of fire fighting foam to the marine environment.	Daily report to confirm no release of fire fighting foam to the marine environment.	Vessel Master
18	Accidental release – hydraulic fluid from ROV operations	Unplanned release of hydraulic fluid	No release of hydraulic fluid to the marine environment	Closed loop system	The ROV and tools system are a closed loop system, designed not to release fluid to the marine environment during operation	Records confirm that there are no hydraulic fluid discharges to the marine environment	Vessel Master
				Equipment maintenance	Equipment maintenance in accordance with manufacturer specifications. Hoses checked and hose register in place. Bunding and containment around maintenance area	Records confirm equipment maintenance in accordance with supplier specifications	Vessel Master
19	Loss of containment of hydrocarbons or MDO	Unplanned release of hydrocarbons or MDO to the marine environment as a result of vessel collision or human error / equipment failure	No unplanned release of hydrocarbons or MDO to the marine environment	Vessel Crew and Navigational Equipment	Vessels will meet the requirements of Marine Order 30 (Prevention of collisions) 2016 including: • adherence to steering and sailing rules including maintaining look-outs (e.g. visual, hearing, radar etc.), proceeding at safe speeds, assessing risk of collision and taking action to avoid collision (monitoring radar) • adherence to navigation light display requirements, including visibility, light position/shape appropriate to activity • adherence to navigation noise signals as required.	Training and competency records indicate that vessels meet the crew competency, navigation equipment, and radar requirements of the AMSA Marine Orders	Vessel Master

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
					Vessels will meet the requirements of Marine Order 21 (Safety and emergency arrangements) 2016 including: • adherence to minimum safe manning levels • maintenance of navigation equipment in efficient working order (compass/radar) • navigational systems and equipment required are those specified in Regulation 19 of Chapter V of SOLAS • Automatic Identification System (AIS) that provides other users with information about the vessel's identity, type, position, course, speed, navigational status and other safety-related data.		
				DSV DP / station keeping system	DSV meets the Exxon Mobil requirements for a vessel operating near a platform (GP30-01-01)	Pre-mobilisation vessel audit confirms vessel acceptability	Vessel Master
					Vessel complies with IMCA requirements	Valid Annual IMCA FMEA Audit	
					DSV DP / station keeping system procedures are implemented	Daily report confirms availability of DP system and Incident report raised for any loss of DP while engaged in project activities	
				DSV design of fuel storage	DSV main MDO storage tanks are located inboard	Pre-mobilisation inspection confirms inboard location of main MDO storage tanks	

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Attending HRV station keeping systems maintained	Attending HRV station keeping systems are maintained and tested in accordance with PMS	PMS records confirm that HRV station keeping systems are maintained and tested in accordance with PMS and EAPL requirements	Vessel Master
				HRV stationed outside PSZ	HRV stationed outside PSZ during normal operations unless in an emergency	Daily report confirms HRV stationed outside PSZ	Vessel Master
				Petroleum Safety Zone (PSZ)	PSZ at HLA and CBA in accordance with section 616 of the Offshore Petroleum and Greenhouse Gas Storage Act 2006.	PSZs gazetted and in place for the duration of the campaign.	Esso Project Manager
				Pre-start notifications	AMSA JRCC notified 24-48 hours before operations commence to enable AMSA to distribute an AUSCOAST warning.	Stakeholder consultation records confirm that information to distribute an AUSCOAST warning was provided to the JRCC	Offshore Risk, Environment & Regulatory Supervisor
					AHS notified no less than 4 working weeks before operations commence to allow generation of navigation warnings (including Notice to Mariners).	Stakeholder consultation records confirm a Notice to Mariners was provided to the AHS at least four weeks before operations commenced	
					Relevant Stakeholders, including commercial fishers, will be notified of activities approximately one month and again one week prior to commencement	Stakeholder consultation records confirm that information was distributed to relevant stakeholders in required timeframes.	
			Minimise the impact on the environment as a	Emergency Response Preparedness	Emergency response capability will be maintained in accordance with EP, OPEP and related documentation.	Outcomes of internal audits and exercises demonstrate preparedness.	Esso Project Manager

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
			result from a loss of containment	SOPEP (or equivalent)	Emergency response activities will be implemented in accordance with the vessel SOPEP	Records confirm that emergency response activities have been implemented in accordance with the vessel SOPEP	Vessel Master
				OPEP	Under the OPGGS(E) Regulations, the petroleum activity must have an accepted Oil Pollution Emergency Plan (OPEP) in place before the activity commences. In the event of a LOC, the OPEP will be implemented.	An approved OPEP is in place before the start of field activities.	Esso Project Manager
						Records confirm that emergency response activities have been implemented in accordance with the OPEP	SSHE Manager
					The OPEP shall be tested in accordance with the OPGGS(E) Regulations.	Records indicate tests undertaken in accordance with the exercises according to the schedule given in the approved EP (Section 7.6).	SSHE Manager
					Esso shall maintain a full time emergency response capability for the duration of the pipeline repair activities	IMT roster. Training records current in relation to oil spill response.	SSHE Manager

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
					In the event that initiation criteria for MES activities are triggered, MES shall be undertaken within the timeframes specified. MES activities shall continue until termination criteria are met.	Pre-commencement oil spill response audit confirms that minimum performance standards are achievable. Pre-mobilisation audit and ongoing audits confirm that measures identified in Section 10: Emergency Response Planning are met for the duration of the pipeline repair campaign. In the event of an incident, Daily Logs of response activities prepared by IMT show that minimum time frames for response are met.	SSHE Manager
				OSMP	Operational and scientific monitoring will be implemented in accordance with the OSMP	Records confirm that operational and scientific monitoring have been implemented in accordance with the OSMP	SSHE Manager
20	Monitor and Evaluate	MDO LOC emergency event may include Monitor and Evaluate	Esso maintains capability to implement operational monitoring in a Level 2 or 3 spill event.	Agreements/pre-qualifications	Esso maintains the following agreements (or contractor pre-qualifications) to maintain operational response capabilities: • AMOSC membership (Aerial Observers, RPS-APASA Contract). • AMSA MoU. • Aviation support (prequalification assessment) • Marine support services	Contracts/ memberships/ Memorandum of Understanding (MoU) and pre-qualification records are current.	SSHE Manager

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				Oil Spill Tracking Buoys	Oil spill tracking buoy is available at heliport as well as instructions for deployment.	Records confirm that tracking buoy is available at heliport	SSHE Manager
			Esso implements operational monitoring to inform spill response (Level 2 or 3 spill only).	Oil Spill Tracking Buoy deployment	Oil spill tracking buoy is launched in the event of a Level 2/3 spill as soon as practicable but within 2 hours of the spill.	Incident management records verify that tracking buoy is deployed within suitable timeframe in the event of a Level 2 spill.	Incident Commander
				Response – Observations from aircraft/vessels	Operational monitoring is initiated during daylight hours within 24 hrs for aircraft observation and 24 hrs for additional vessel. Observation to be undertaken in accordance with OSMP O1 (Oil Spill Surveillance).	Spill response log notes that aircraft are deployed within 24 hours of spill (or nearest daylight hours immediately post 24 hours). Completed Aerial Observation Logs (as per OSMP O1) emailed to IMT.	Incident Commander
				Oil Spill Trajectory Modelling	RPS-APASA provides OSTM results within four hours of spill notification in accordance with OSMP O1 (Oil Spill Surveillance).	Incident records verify operational monitoring timeframes met.	Incident Commander
				Response – Oil Spill Vector Calculation	Manual vector calculations identify spill impact areas utilising oil spill tracking buoy information within 1 hr of spill incident notification.	Spill response log verifies manual trajectory calculation is provided within 1 hr of spill notification.	Incident Commander
			Esso implements scientific monitoring in accordance with OSMP to monitor impacts (Level 2 or 3 spill only)	Scientific monitoring capabilities	Scientific monitoring is executed in accordance with the modules laid out in OSMP implementation strategy	Records confirm that execution of scientific monitoring is accordance with the modules laid out in OSMP implementation strategy.	Incident Commander
				OSMP Module S2	Module S2 ‘reactive’ baseline data collection for intertidal sediments and water is commenced within 7 days, if initiation criteria are triggered.	Records confirm ‘reactive’ baseline data collection commenced within 7 days	Planning Section Chief

RA	Activity	Hazard/Aspect	Performance Outcomes	Controls	Performance Standards	Measurement Criteria	Responsible Person
				OSMP Module S3	Module S3 'reactive' baseline data collection for offshore sediments is commenced within 7 days, if initiation criteria are triggered.	Records confirm 'reactive' baseline data collection commenced within 7 days	Planning Section Chief
	Oiled Wildlife Response (OWR)	MDO LOC emergency event may include Oiled Wildlife Response	Esso maintains capability to support oiled wildlife management in a Level 2 or 3 spill event.	OWR capabilities	Esso maintains the following agreements to maintain OWR response capabilities: • AMOSC membership (equipment, personnel). • Waste management contract. • Vessel Contract; Vessel of Opportunity listing	Contracts/memberships verify currency of membership.	SSHE Manager
			Esso provides resources to support OWR strategies as directed by DELWP.	Notifications	DELWP is notified as soon as possible after the sighting of oiled wildlife has occurred.	Incident management records verify that verbal and/or written notification was provided to DELWP as soon as possible after the sighting was noted.	Incident Commander
				OWR kits availability	AMOSC OWR kits are deployed to site within timeframes as directed by DELWP.	Incident records verify oiled wildlife response kits are deployed to site as directed by DELWP.	Incident Commander
				OWR resourcing	Esso meets DELWP resourcing needs throughout the response, meeting IAP performance outcomes.	Incident log verifies resources requested by DELWP met required IAP outcomes for oiled wildlife response.	Incident Commander
			Wildlife is only approached or handled by DELWP trained oiled wildlife responders.	Wildlife interaction inductions	Esso personnel are inducted into wildlife interaction restrictions.	Incident records verify no interaction by Esso personnel and wildlife.	Incident Commander

6 Emergency Response Planning

6.1 Oil Spill Planning Scenario Development

For the purposes of response planning, a worst case credible (Level 2) scenario, described in Table 6-1 below, was selected for further analysis.

Table 6-1 Credible spill scenario identified for response planning

Spill Scenario	Max. Spill Volume	Duration	Oil Type	Level
Vessel collision resulting in fuel tank rupture and release of diesel	220 m^3	6 hrs	MDO	2

A loss of containment of MDO from a vessel collision represents the worst-case discharge scenario for the CBA PRP and is used to demonstrate that all reasonable practicable measures to reduce oil pollution risk will be implemented and the adopted oil pollution response control measures and response arrangements detailed in the OPEP will be effective in reducing impacts and risks to ALARP.

6.2 Response Strategy Options

Spill response strategies for the scenario were evaluated and the results are summarised in Table 6-2. As MDO is highly volatile and neither of the spills are predicted to contact the shoreline at the lowest thresholds (except at the ANZECC reference level threshold for entrained hydrocarbons), the primary response strategies for are limited to:

- Source Control,
- Natural Recovery, and
- Monitoring, Evaluation and Surveillance (MES).

Table 6-2 Response technique evaluation for a 220 m^3 MDO spill

Response Option*	Benefits	Effectiveness on MDO spill	Viable Response?	Net Benefit?
Source Control	Limit flow of hydrocarbons to environment.	Only viable option to stop flow of oil to the marine environment.	**Yes**	✓
Natural Recovery	Non-intrusive so no impact to the environment.	MDO degrades rapidly in the open ocean. Natural recovery is therefore a viable option.	**Yes**	✓
Monitor, Evaluate and Surveillance	Although surveillance is not an active intervention to treat or remove oil pollution, it is critical to effective response both in the initial stages of an incident and during ongoing response operations.	Monitoring, Evaluation and Surveillance used to observe the natural break-up and dissipation of MDO spill without the need for active intervention.	**Yes**	✓
Dispersant Application	Dispersants act by allowing hydrocarbons to be mixed into the upper layers of the water column, which accelerates the biodegradation process. Removes oil from the water surface, protecting leeward shorelines and providing benefit to sea-surface /air breathing animals.	Dispersant application is not recommended for MDO as it spreads rapidly to a thin layer. Dispersant droplets are known to penetrate through the thin oil layer and cause 'herding' of the oil. This creates areas of clear water but is not successful dispersion (see The International Tanker Owners Pollution Federation [ITOPF] Technical Information Paper No. 4: The Use of Chemical Dispersants to Treat Oil Spills). Application of dispersant can contribute to water quality degradation through chemical application without removing surface oil.	**Not viable**	**x**

Response Option*	Benefits	Effectiveness on MDO spill	Viable Response?	Net Benefit?
		Considered not to add sufficient benefits.		
Contain & Recover	Booms and skimmers to contain surface oil where there is a potential threat to environmental sensitivities. Relies on calm sea conditions, thicknesses >10µm to collect and adequate deployment timeframes.	MDO spreads rapidly to a thickness of less than 10 µm. Containment is ineffective at these thicknesses.	**Not viable**	-
Protect & Deflect	Booms and skimmers deployed to protect environmental sensitivities. Environmental conditions (e.g., current, waves) limit application	The field is sufficiently far from shore that coastline impact is not predicted.	**Not required**	-
In-situ burning	In-situ burning (burning oil in place) can quickly eliminate large quantities of spilled oil.	MDO spreads rapidly to a thickness of less than 10 µm. Containment is ineffective at these thicknesses.	**Not viable**	-
Oiled wildlife Response (OWR)	Consists of capture, cleaning and rehabilitation of oiled wildlife. May include hazing or pre-spill captive management.	Given limited size and rapid spreading of the spill, OWR is unlikely to be required. OWR may be implemented if required. To be assessed on case-by-case basis.	**Not required**	-
Shoreline Clean-up	Last line of defence to remove oil from the marine environment.	The field is sufficiently far from shore that coastline impact is not predicted.	**Not required**	-

* *At the ANZECC reference level threshold for entrained hydrocarbons (Environmental Monitoring ZPI), there is the potential for shoreline impact at below the OSPAR PNEC. However, these concentrations are too low for any controls, except MES, natural recovery and source control to be effective.*

6.3 Tactical Response Planning

Anticipated response for the scenario is presented in Table 6-3. In the following sections the response strategy is analysed in more detail with the objective of:

(1) ensuring sufficient resources are available to meet the needs of the response;

(2) evaluating effectiveness of each response strategy and level of performance required;

(3) developing environmental performance standards;

(4) exploring options to improve the effectiveness and/or determine the need for any further resources.

Table 6-3 Tactical response for Level 2 spill scenario

Spill Location:	**Halibut**
Duration of spill:	6 hours
Spill description:	Vessel spill
Volume of oil discharged	220 m^3
Oil Type:	MDO
Activity	**Anticipated response actions**
Source control	Source control is initiated in accordance with the vessel operating procedures.
Incident management	Incident Command and response team is established under the leadership of the Vessel Master. Notifications are made to onshore headquarters and external agencies in conformity with the vessel SOPEP and CBA PRP OPEP. A supporting Incident Management Team is established at Esso's onshore headquarters to aid coordination of response and handle media enquiries.
Surveillance and assessment	**As per OPEP:** **Day 1** • A crew transfer helicopter is released from duties and a trained observer liaises with the pilot to undertake surveillance activities. • A tracking buoy is deployed either by a vessel or helicopter).

	• Weather forecast is obtained from the Bureau of Meteorology • Desktop trajectory modelling is undertaken • A proprietary oil spill trajectory model is run to provide prediction of slick movement under prevailing and forecast weather conditions. • Water and oil sampling is undertaken in accordance with OSMP **Day 2** A schedule of ongoing twice-daily overflights is agreed. After two days the spill is no longer visible and aerial surveillance is stood down.

6.3.1 Emergency Management and Response System (EMRS)

The chain of command, including roles and responsibilities of vessel personnel, and how these personnel will interface with the incident management team detailed in the OPEP is summarised in the *"Emergency Preparedness and Response Bridging Document: CBA PRP".*

This document has been developed to ensure that emergency support responsibilities are defined and agreed between Esso Australia Pty Ltd (EAPL - Emergency Support Group and Incident Management Teams), in support of Subsea 7 (DSV Seven Eagle). The ExxonMobil Emergency Response Model (Figure 6-1) illustrates how tactical response escalates from a Level 1 to a Level 2 then Level 3 response, each level being absorbed into the next level during transition.

Esso's emergency management and response system is based on the simplified diagram in Figure 6-2. The response structure is designed to cater for any size emergency. The extent to which this structure is used in practice depends on the nature of the particular emergency that may arise. Guidelines are used to help classify the emergency and determine the extent to which the response structure is mobilized.

Esso's Emergency Support Group (ESG) structure is detailed in Figure 6-2. Esso's Incident Management Team (IMT) structure is based on Figure 6-3.

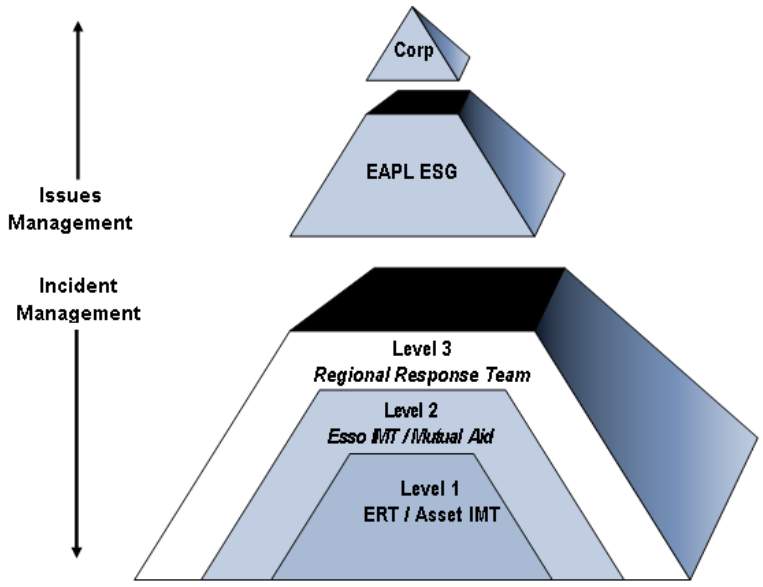


Figure 6-1 Esso emergency management and response system

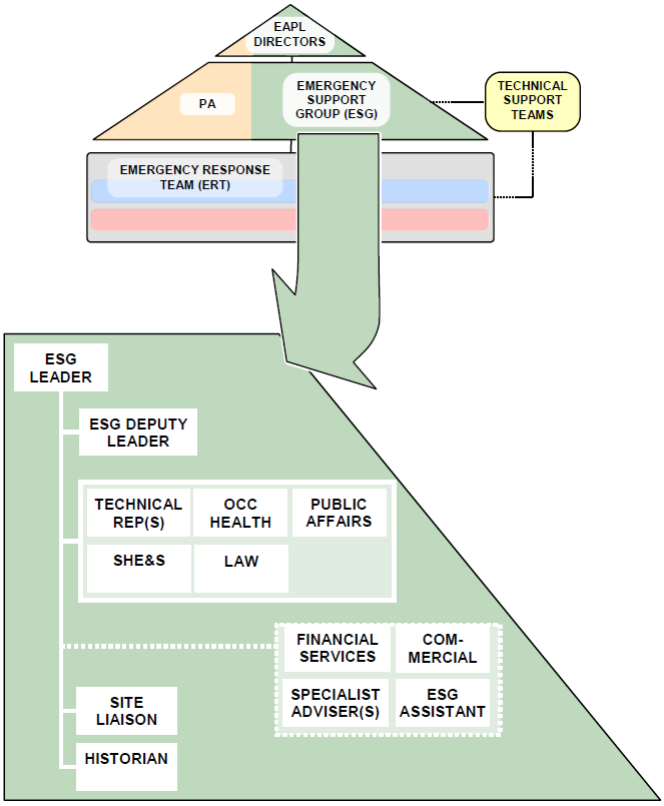


Figure 6-2 Esso Emergency Support Group (ESG) structure

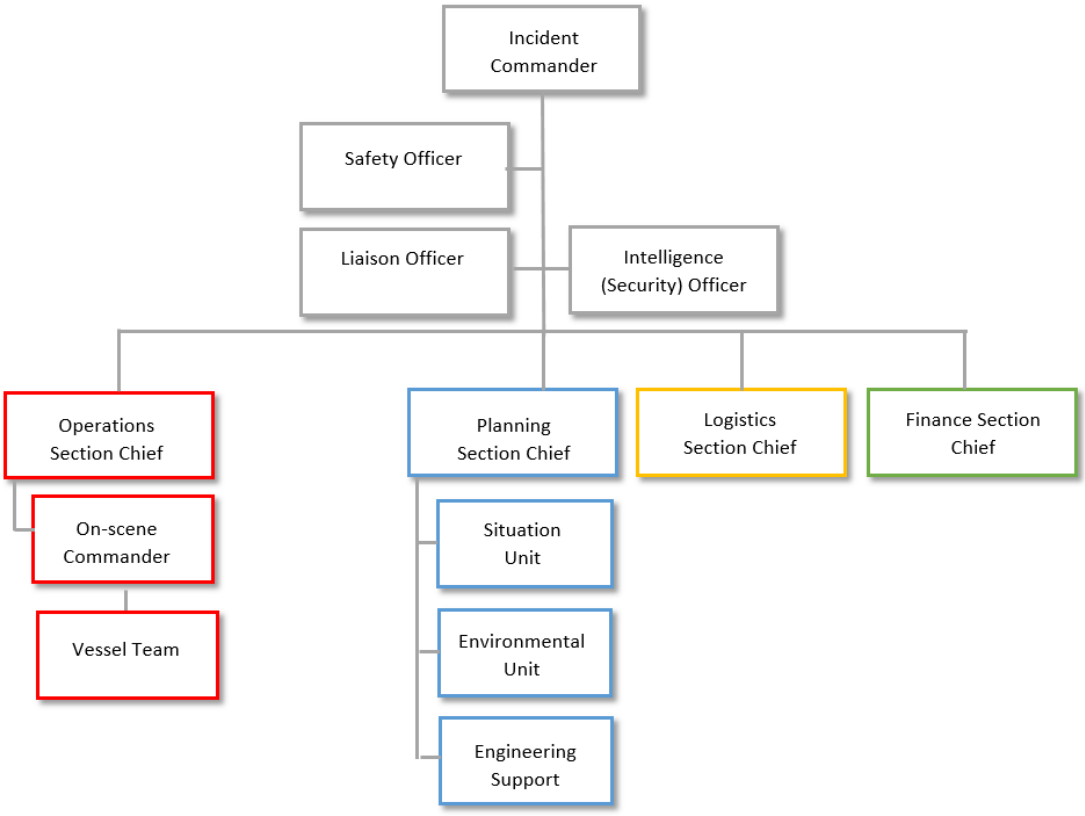


Figure 6-3 Esso Incident Management Team (IMT) structure

6.3.2 Incident Management Team (IMT)

The structure of the IMT (Figure 6-3) is based on the Incident Command System detailed in the Incident Management Handbook (The Response Group, 2015). The structure is consistent with the Australasian Inter-Service Incident Management System (AIIMS), which ensures that any interface between Commonwealth and State incident and emergency response organisations are aligned.

The structure of the team is scalable and flexible such that, if the incident dictates, not all roles need to be filled or one person can fill multiple roles. The role holders can also evolve over time. As the responsibility for the response moves from one organisation to another, a role may be replaced with a more suitable or more competent individual or the incident may be of such duration that shift change is required.

The IMT Leader (or Incident Commander (IC)), assisted by the IMT, is responsible for command, control and coordination of the response to incidents and for supporting the OC in the tactical response to any incident. Responsibilities and checklists for IMT members are provided in the Incident Management Handbook (The Response Group, 2015).

6.4 Monitoring, Evaluation and Surveillance (MES)

Monitoring and evaluating the oil spill is essential for maintaining situational awareness and assessing the environmental impact. This is fundamental to putting in place an effective oil spill response strategy. The key methods are:

- Aerial observation;
- Vessel-based observation;
- Computer-based tools:
    - Oil spill trajectory modelling;
    - Vector analysis (manual calculation); and
    - Automated Data Inquiry for Oil Spills (ADIOS) (a spill weathering model).
- Utilisation of satellite tracking drifter buoys;
- Remote sensing from aircraft;
- Remote sensing from satellite; and
- Water quality and oil sampling.

6.5 OSMP Implementation Framework and Strategy

In the event of a significant hydrocarbon release incident during the CBA PRP a number of environmental monitoring studies will be implemented to inform spill response (operational monitoring) and to evaluate the potential environmental impacts to the marine environment (scientific monitoring).

The potential impacts of a MDO spill have been assessed in Section 5.3.5 of this EP, with management and response measures provided in the associated Oil Pollution Emergency Plan (OPEP) (Appendix D). The content of the Operational and Scientific Monitoring Program (OSMP) is aligned with the values and sensitivities described in Chapter 3: Description of the Environment.

A consolidated list of OSMP studies and references to each study's strategy and implementation plan are provided in Table 6-4

Table 6-4 OSMP Studies and Monitoring Performance Objectives and reference to OSMP Sections for each study's strategy and implementation

Study ID	Study Name	OSMP Section	Implementation Plan
Operational (response phase) monitoring modules			
O1	Oil spill surveillance	3.1	O1
O2	Water and oil sampling	3.2	O2
O3	Shoreline assessment	3.3	O3
O4	Fauna observations	3.4	O4
O5	Air quality	3.5	O5
Scientific (recovery phase) monitoring modules			
S1	Ecotoxicity	4.1	S1
S2:	Hydrocarbon monitoring of intertidal sediments and water	4.2	S2
S3:	Hydrocarbons in offshore sediments	4.3	S3
S4	Fish and shellfish taint and toxicity for human consumption	4.4	S4
S5	Short-term impacts to oiled fauna and flora	4.5	S5
S6	Long-term impacts to commercial and recreational fisheries	4.6	S6
S7	Long-term impacts to fauna	4.7	S7
S8	Long-term impacts to subtidal and intertidal benthic habitat	4.8	S8
S9	Long-term impacts to coastal flora	4.9	S9
S10	Long-term impacts to Ramsar values	4.10	S10

Table 6-5 Sensitivities which may be monitored as part of the OSMP in the event of a Level 2 or 3 oil spill

Environmental Sensitivity	General Offshore	Shoreline impact	OSMP Monitoring Studies	Applicable OPEP response measure
General Offshore				
Plankton	Yes		O2: Water and oil sampling S1: Ecotoxicology	MES
Fish/Shellfish	Yes		S1: Ecotoxicology S4: Fish and Shellfish Taint	MES
Cetaceans/ Seals/Turtles	Yes		O4: Fauna observations S7: Long-term impacts to fauna	MES
Sub-tidal Zone				
Sub-tidal rocky reefs		Yes	S3: Hydrocarbons in offshore sediments S8: Long-term impacts to subtidal and intertidal benthic habitat	MES
Intertidal Zone				
Sandy beach		Yes	O3: Shoreline assessment S2: Hydrocarbon monitoring of intertidal sediments and water	MES Shoreline Clean-up
Mixed sand beach / platform		Yes	O3: Shoreline assessment S2: Hydrocarbon monitoring of intertidal sediments and water	MES
Seagrass		Yes	O3: Shoreline assessment S8: Long-term impacts to subtidal and intertidal benthic habitat	MES
Kelp-dominated reefs		Yes	O2: Water and oil sampling S8: Long-term impacts to subtidal and intertidal benthic habitat	MES
Saltmarsh/wetlands		Yes	O2: Water and oil sampling O3: Shoreline assessment S8: Long-term impacts to subtidal and intertidal benthic habitat S9: Long-term impacts to coastal flora S10: Long-term impacts to Ramsar values	MES, P&D Protect & Deflect
Upper Shore				
Seabird/shorebird breeding, feeding and resting area		Yes	O2: Water and oil sampling O3: Shoreline assessment S8: Long-term impacts to subtidal and intertidal benthic habitat S5: Short-term impacts to oiled fauna and flora	MES, Oiled wildlife response
Seal Colonies/Haul-out		Yes	O4: Fauna observations S7: Long-term impacts to fauna	MES
Fishing				
Commercial and recreational fishing	Yes	Yes	S4: Fish and Shellfish Taint	MES

Note. Studies O1: Oil spill surveillance & O2: Water and oil sampling are considered to be general and therefore apply to all environmental sensitivities.

7 Implementation Strategy

The implementation strategy described in this section identifies systems, practices and procedures to be used to ensure that the environmental impacts and risks of the activity are reduced to As Low As Reasonably Practicable (ALARP) and acceptable levels, and that the environmental performance outcomes and standards in the EP are met.

7.1 Esso Operations Integrity Management System (OIMS)

Esso is committed to conducting business in a manner that is compatible with the environmental and economic needs of the communities in which it operates, and that protects the safety, security, and health of its employees, those involved with its operations, its customers, and the public. These commitments are documented in the Safety, Security, Health, Environmental, and Product Safety policies.

These policies are put into practice through a management system called the OIMS. Esso's OIMS Framework establishes common worldwide expectations for addressing risks inherent in the business. The term Operations Integrity (OI) is used by Esso to address all aspects of its business that can impact personnel and process safety, security, health and environmental performance.

The CBA PRP will operate in accordance with the proprietary ExxonMobil Operations Integrity Management System (OIMS). OIMS is adopted by all ExxonMobil affiliates worldwide.

7.2 Subsea 7 Environmental Management Framework

This project is being implemented under the umbrella of the ExxonMobil Environmental Policy and OIMS which the drilling contractor, supply vessels and any other contractors, must abide by. The drilling contractor and supply vessels and contractors have in place formal, written systems, practices and procedures for management of HSE.

Through the Third Party Services Element of OIMS (Element 8), third party systems practices and procedures are reviewed and assessed for acceptability by Esso prior to commencement of operations/activities. Third party services and systems are subject to regular audits throughout the program, at a minimum these are conducted annually as part of the critical contractor's evaluation program.

The Subsea 7 Business Management System (BMS) is the online platform for information management and incorporates the requirements of the management systems for all functions. This includes management of Health, Safety, Security and the Environment. The Subsea 7 BMS is available at all worksites and externally through the intranet to ensure all procedures and policies are current and up to date and can be implemented uniformly across locations.

The purpose of the Vessel Safety Management System (VSMS) (including the Vessel Safety Case) is to document the structure and systems which enable the safe management of vessel operations.
VSMS consists of the following applicable documents:

- Standard operations procedures;
- Safety procedures;
- Emergency procedures;
- Other vessel related documents.

In addition to the above, a number of project specific plans and procedures will be developed as required to address project specific information to support the Seven Eagle activities on the project scope of work. The aim of a Project Management System is to interface the BMS with various aspects of the project to provide sufficient confidence and assurance that the necessary controls and communications are in place to successfully execute the project scope and achieve the project objectives.

7.2.1 Project documentation

The following documents apply to the CBA PRP and set the standards and requirements to be met for the repair project by all parties (Esso and contractors):

- The CBA PRP Environment Plan
- The CBA PRP Oil Pollution Emergency Plan
- The Bridging Emergency Response Plan
- A project specific Subsea 7 Emergency Response Plan
- A project-specific Subsea 7 HSE Management Plan

The content of these documents is introduced as part of the induction process for personnel on-board the DSV and HRV, and copies are made available to crew members prior to the commencement of any work.

7.3 Training and Competency

Esso requires that all personnel be trained in accordance with their respective contractor- established training requirements as well as Esso contractually specified requirements.

Subsea 7 has implemented onshore and offshore HSE Training matrices to ensure that personnel engaged on the project are appropriately trained and have the relevant, skills and competencies to carry out their assigned tasks. A training gap review will be undertaken to establish basic competencies in accordance with contractual requirements. The training gap review includes the relevant “familiarisation” required on the project including:

- Vessel equipment familiarisation;
- Project specific equipment familiarisation;
- Facility specific training and familiarisation requirements.

Each third party service provider is also required to maintain training files for their personnel. These records are verified as part of initial contract requirements and then audited at a minimum of annually for critical contractors.

7.4 Reporting and Inspections

7.4.1 Environmental performance report

While this EP will remain in force to cover the operation of the pipelines until the five-yearly revision of the Central Fields EP has been accepted, an interim project specific environmental performance report, in accordance with OPGGS(E) Regulations 2009 (Reg 14(2) and Reg. 26C) will be prepared at the completion of the pipeline repair campaign. The performance report will detail the outcomes of each performance standard in the EP. The report will be submitted to NOPSEMA within 3 months of the end of the campaign in accordance with the OPGGS(E) Regulation 14(2).

Once the Central Fields EP has been accepted, including the CBA redundant pipeline, a final environmental performance report will be developed and issued to NOPSEMA within 3 months of the acceptance of the Central Fields EP.

7.4.2 Other External stakeholder reporting

The following table provides a summary of the external notifications and reporting arrangements.

Table 7-1 External Notification and Reporting Requirements

Notification	Timing	Reference/Comments
All relevant non-government stakeholders	At least 1 month and 1 week prior to planned activity commencement	All relevant stakeholders listed in the stakeholder register (email)

	Within 10 days of activity completion	
NOPSEMA	At least 10 days prior to activity	OPGGS(E) Reg 29 (submissions@nopsema.gov.au)
	Within 10 days of activity completion	
	At activity finalisation and obligation completion	OPGGS(E) Reg 25A
AHS - commencement date and duration	At least 4 weeks prior to activity	AHS issues a Notice to Mariners (datacentre@hydro.gov.au).
Transport Safety Victoria (TSV) - commencement date and duration.	At least 2 weeks prior to activity commencement.	TSV to issue Notice to Mariners (information@transportsafety.vic.gov.au).
AMSA	24-48 hrs before start of activity. Reconfirm on activity commencement	AMSA issues AusCoast Warnings for activity (rccaus@amsa.gov.au)
	On vessel demobilisation from field	
Provide cetacean observation data to the DoEE.	Within 3 months of activity completion	Upload information to: https://data.marinemammals.gov.au/csa
Suspected or known introduction of IMS to DELWP	Per occurrence during pipeline repair activity.	Report a pest (as per marinepests.gov.au website) 13 6186

7.4.3 Monitoring and recording emissions and discharges

7.4.3.1 Routine Monitoring

Table 7-2 provides a summary of the environmental risk monitoring requirements for the project activities. This should be considered along with the Performance Standards, Objectives and Criteria in Chapter 5. The DSV Vessel Master and Esso Vessel Lead are responsible for ensuring the monitoring is undertaken as per the EP.

Table 7-2 Summary environmental monitoring/recording and reporting requirements

Environmental Risk	Criteria to be Monitored	Frequency of Monitoring and Reporting
Release of hazardous/non-hazardous waste	Type and volume	Each incident (IR)
Diesel usage	Volume	Ongoing (EPR)
Release of fire fighting foam	Volume	Each incident (IR)
Release of hydraulic fluid	Volume	Each incident (IR)
Oil spills	Type and volume	Each incident (IR)
Chemical spills	Type and volume	Each incident (IR)
Chemical inventory	Type	Ongoing (EPR)
Fuel use (DSV/HRV)	Volume	Ongoing (EPR)
Vessels entering safety zone	Per incident	Ongoing

Oily water (bilge) discharge	Discharge volume; Compliance with MARPOL (oil-in-water concentration, vessel moving or stationary)	Continuous during discharge (EPR)
Discharge of putrescible waste	Discharge volumes; Compliance with MARPOL (macerated or not macerated, vessel moving or stationary, and distance from nearest land)	Ongoing (EPR)
Waste to shore from DSV	Volume and type	Event/consignment (EPR)
Sewage discharge	Discharge volumes; Compliance with MARPOL (treated or untreated, vessel moving or stationary, and distance from nearest land)	Ongoing (EPR)
Incinerated waste	Volume and type; Incineration temperature	Ongoing (EPR)
Ballast water discharges	Exchanged volume; Distance from nearest land	Ongoing (EPR)
Sightings of, and impacts to, wildlife	Type	Ongoing (EPR/IR)

EPR: Environmental Performance Report
IR: Incident Report

7.4.4 Incident Notification and Reporting

The OPGGS(E) Regulations define "*Recordable Incidents*" and "*Reportable Incidents*", and also defines reporting requirements for each type of incident.

All environmental incidents and near misses are reported by Subsea 7 to Esso. Esso notifies and reports incidents to NOPSEMA in accordance with OPGGS(E) Regulations.

Incidents are managed internally by Esso in accordance with OIMS System 9-1 (Incident Management) to ensure valuable information and lessons learned are available to improve operations and prevent the recurrence of similar incidents.

In addition to the OPGGS(E) Regulations 2009 requirements, unplanned releases of hydrocarbon liquid or non-approved chemicals exceeding 80 litres into the marine environment (while performing a petroleum activity) are to be reported to AMSA.

Other vessel incidents (while not performing a petroleum activity) must also be reported in accordance with the Navigation Act 2012 and other regulations (Table 7-3).

Table 7-3 Reporting to AMSA and other government agencies - marine pollution incidents/injuries

Petroleum Activity: Actual or potential unplanned releases of hydrocarbon liquid or non-approved chemicals exceeding 80 litres into the marine environment (while performing a petroleum activity). https://www.amsa.gov.au/contact-us/index.asp#report POLREP: https://amsa-forms.nogginoca.com/public/	• **Verbally at the first available opportunity** • **POLREP report within 3 days** AMSA 24 Hour Emergency Contact Numbers 1800 641 792 (Maritime) 1800 815 257 (Aviation) or +612 6230 6811 (Maritime) +612 6230 6899 (Aviation)	Vessel Master outside 500m petroleum safety zone OIM within the 500m petroleum safety zone

Outside 500m petroleum Safety Zone: AMSA will be notified by the Vessel Master if any of the following incidents occur (while not performing a petroleum activity): • An oil pollution incident from a vessel has occurred in Commonwealth waters (Marine Notice 1/1996); • The vessel has sustained or caused an accident occasioning loss of life or serious injury; • The vessel has received damage or is defective affecting its seaworthiness; or • There is a serious danger to navigation resulting from a vessel (e.g. a sizable piece of equipment likely to float is lost overboard). https://www.amsa.gov.au/environment/regulations/marpol/reporting-pollution/index.asp	• **Verbally at the first available opportunity** • **POLREP report within 2 hours** AMSA 24 Hour Emergency Contact Numbers 1800 641 792 (Maritime) 1800 815 257 (Aviation) or +612 6230 6811 (Maritime) +612 6230 6899 (Aviation)	Vessel Master
Notify port and government agencies in the event of a Level 1 (Port Authority) or Level 2 (Port Authority & DEDJTR) vessel spill	• **Immediately** DEDJTR (Transport) - 0409 858 715 (24 hrs). semdincidentroom@transport.vic.gov.au NOPSEMA: 08 6461 7090. (Commonwealth waters) Port of Portland: (03) 5525 0900	Vessel Master
Notify DEDJTR EMD in the event of oiled wildlife. DEDJTR will coordinate response with DELWP	• **Immediately** 1300 134 444 (24 hrs).	Vessel Master/OIM
Notify DELWP of any incidents of injury or death to native fauna including whales and dolphins.	• **Immediately.** Whale & Dolphin Emergency Hotline: 1300 136 017. Seals, Penguins or Marine Turtles: 136 186 (Mon-Fri 8am to 6pm) or AGL Marine Response Unit: 0447 158 676.	Vessel Master/OIM
Notify the DoEE of any impacts to MNES, specifically injury to or death of EPBC Act-listed species.	• **Within 7 days** Phone 1800 110 395; Email: compliance@environment.gov.au	Vessel Master/OIM

7.4.5 Incident Investigation

Investigations into environmental incidents are conducted in accordance with Esso's incident investigation procedures and guidelines. Investigation teams may include Subsea 7 or vessel representative(s) as agreed in consultation with the Subsea 7 Operations Manager and the Esso Operations Superintendent; the team leader for investigations will be either an Esso investigator or Esso appointed objective third party. Investigations are reported using the Esso reporting format.

7.4.6 Auditing and Inspections

Requirements for compliance with the EP under OPGGS(E) Regulation 14(3) are met through ongoing monitoring and reporting and auditing and inspections (outlined below).

Table 7-4 Summary of Audits and Inspections

Task	Party/Responsibility	Status/Plan
Dive Audit	Esso CBA PRP Project Manager / dive specialist	Completed prior to start up. Corrective actions closed out prior to the start of operations.
Vessel Audit	Esso CBA PRP Project Manager / vessel specialist	Prior to start up. Corrective actions closed out prior to the start of operations.
Pre-mobilisation Environmental Inspection	Esso Environmental Advisor (or delegate)	Prior to start up. Corrective actions closed out prior to the start of repair activities
EP Compliance Audit	Esso Offshore Risk, Environment and Regulatory Supervisor (or delegate)	During pipeline repair activities
Weekly vessel area inspections (e.g. waste management, equipment inspections)	Esso Vessel Lead & Vessel Master/ Subsea 7 Offshore Manager	During pipeline repair activities

7.5 Environmental Performance Review

7.5.1 Daily Vessel Briefings

Daily vessel briefings are undertaken to keep all personnel involved up to date with the activities that are planned for the day and allows for input from the Management team to assist with work planning.

7.5.2 Toolbox meetings

Toolbox meetings are conducted twice daily to plan for any events that are occurring during the shift. This allows for relevant permits and Job Safety Analyses to be undertaken and to make sure that personnel completing the tasks understand all the safety and environmental risks associated.

7.6 Emergency and Oil Spill Preparedness and Response

7.6.1 Emergency Response Responsibilities

Responsibilities for the purposes of emergency response are outlined as follows:

- Subsea 7 is the “operator” of the facility (the vessel) and has legislative responsibilities for all operations on the DSV, including response to emergencies, in accordance with DSV Emergency Procedures.
- Esso’s role in dealing with emergencies is to provide the necessary resources to support a Subsea 7 emergency response. Esso’s CBA PRP project team will operate from the company’s Melbourne office. Additional management, technical and emergency response support will be provided from the Melbourne and, if required, Houston offices.

7.6.2 Oil Pollution Emergency Plan and Testing

Esso has a project Oil Pollution Emergency Plan (OPEP) that outlines how spills will be managed. For a Level 1 spill inside the 500m exclusion zone, the DSV SOPEP is the primary response plan. It is supported by the CBA PRP OPEP. For Level 2 or 3 spills the CBA PRP OPEP is the primary document and this will outline the resources and response strategies to be implemented, depending on the size and nature of the spill. It also outlines which the lead organisations and responders are and any notification requirements.

In all cases, Esso, as nominated operator under the OPGGS(E) Regulations 2009, will retain control and responsibility for managing spill response.

In accordance with the Commonwealth OPGGS(E) Regulation 14 (8C) and in accordance with OIMS System 10-2: Emergency Preparedness and Response, the OPEP will be tested:

- Prior to the commencement of the activity;
- When there is a significant amendment to the OPEP;

The effectiveness of response arrangements will be measured by the performance standards of each exercise type. These exercises may be externally or internally facilitated.

7.7 Operational Control

7.7.1 Esso Chemical Selection Procedure and Approval for Discharge

Any chemical that is discharged to the marine environment is selected based on their lowest toxicity. All chemicals selected for planned discharge meet OCNS Gold or non-CHARMable Category E (lowest toxicity). Where any of the chosen chemicals needs to be substituted, the lowest toxicity substitute is chosen, in accordance with Esso's chemical selection procedure (Workplace Substances Manual, Form WSM2). Any chemical that is the subject of a planned discharge to the marine environment must meet the requirements under the Esso chemical selection procedure.

7.7.2 Management of Change

The objective of the Esso MoC process is to ensure that additional risks are not introduced by changes that could increase the risk of harm to people, assets or the environment.

Environmentally relevant changes include:

- New activities, assets, equipment, processes or procedures proposed to be undertaken or implemented that have the potential to impact on the environment and have not been:
    - Assessed for environmental impact previously, in accordance with the relevant standard, or
    - Authorised in the existing management plans, procedures, work instructions or maintenance plans.
- Proposed changes to activities, assets, equipment, processes or procedures that have the potential to impact on the environment or interface with the environmental receptor; and
- Changes to the requirements of an existing external approval (e.g. changes to conditions of environmental licences).

For any MoC with identified environmental impacts or risks, an impact/risk assessment will be undertaken to consider the impact of the proposed change on the environmental impacts/risks and the adopted control measures.

7.7.3 Review and update of the Environment Plan

In the event that a proposed change, including new stages or significant modifications identified under MoC, triggers the requirement for a revision under OPGGS(E) Regulation 17, this EP will be revised for re-submission to NOPSEMA.

Note all changes to the accepted EP will be traceable via ‘track-changes’ within the revision document and any changes made are fully justified. This process, including information around changes that trigger a formal revision, are documented.

In accordance with Regulation 17 of the OPGGS(E) Regulations 2009, a revision of the EP will be submitted to NOPSEMA where any significant new environmental impact or risk, or significant increase in an existing environmental impact or risk, has been identified, not provided for in the EP.

8 Stakeholder Consultation

Esso has undertaken consultation with all relevant stakeholders potentially affected by the CBA PRP.

The principles of stakeholder engagement are to:

- Provide meaningful information in a format and language that is readily understandable and tailored to the needs of the target stakeholder group(s).
- Provide information in advance of consultation activities and decision-making.
- Disseminate information in ways and locations that make it easy for stakeholders to access it.
- Respect local timeframes and decision making processes.
- Establish two-way dialogue that gives both sides the opportunity to exchange views and information, to listen, and to have their issues heard and addressed.
- Adopt processes free of intimidation or coercion.
- Develop clear mechanisms for responding to people's concerns, suggestions, and grievances.
- Incorporate feedback into program design, and report back to stakeholders.
- Demonstrate that relevant stakeholders have been consulted in accordance with the requirements of the OPGGS(E) Regulations 2009

8.1 Identification of Relevant Stakeholders

Esso identified the stakeholders for the CBA PRP from the stakeholder database set up to manage base business and project consultation. A total of 86 relevant stakeholders were identified, listed in Table 8-1. Esso classified these stakeholders into three categories for this EP:

- **Primary stakeholders** are those expected to provide direct advice or collaborate on plans and who may be impacted by the project;
- **Secondary stakeholders** are those with functions, interests or activities in the Operational ZPI that could be potentially affected by the activities to be carried out under the environment plan; and
- **Tertiary stakeholders** are other persons and organisations who may have an interest in the activities, but are unlikely to be affected, or unknown stakeholders to whom Esso extended an opportunity to self-identify as having an interest in activities, by way of a public consultation forum in Lakes Entrance, which was promoted through various newspaper advertisements.

Table 8-1 Stakeholders identified as relevant for the CBA PRP activity

ID No.	Stakeholder Name
Primary Stakeholders	
	Department or agency of the Commonwealth to which the activities to be carried out under the EP may be relevant
02	• Australian Maritime Safety Authority (AMSA)
125	• Australian Hydrographic Service (AHS)
04	• Australian Fisheries Management Authority (AFMA)
09	• Department of Environment and Energy (DoEE) – Parks Australia
109	• DoEE
	Department or agency of a State (Victoria) to which the activities to be carried out under the EP may be relevant
39	• State Emergency Service
43	• Department of Economic Development, Jobs, Transport and Resources (DEDJTR) (Transport)
44	• Department of Primary Industries (Marine and Estuarine Fisheries)
46	• Department of Environment, Land, Water and Planning (DELWP)
	Department of the responsible State Minister (Victoria)
	• DEDJTR Earth Resources Regulation
45	

ID No.	Stakeholder Name
	Persons or organisations whose functions, interests or activities may be affected by the activities to be carried out under the EP
	Responders
01	• Australian Marine Oil Spill Centre (AMOSC)
03	• Asia Pacific Applied Science Associates (RPS APASA)
23	• Security Services
25	• Oil Response Company of Australia (ORCA)
55	• Wildlife Victoria
62	• Roads and Maritime Services, NSW
104	• Department of Defence (DoD)
42	• Maritime Safety Victoria
	Fishing Associations
17	• Lakes Entrance Fishermens' Co-operative Society Limited (LEFCOL)
33	• Seafood Industry Victoria (SIV)
37	• South East Trawl Fishing Industry Association (SETFIA)
Secondary Stakeholders	
	Department or agency of the Commonwealth to which the activities to be carried out under the EP may be relevant
103	• Director of National Parks (DoEE)
99	• Department of Agriculture and Water Resources (DAWR)
105	• Department of Foreign Affairs & Trade (DFAT)
85	• National Offshore Petroleum Titles Administrator (NOPTA)
	Department or agency of the State (Victoria) to which the activities to be carried out under the EP may be relevant
8	• Country Fire Authority
13	• Environment Protection Authority, Victoria (EPA Vic)
15	• Gippsland Ports
27	• Parks Victoria
29	• Phillip Island Nature Park
90	• Water Police
101	• Victorian Fisheries Authority
	Persons or organisations whose functions, interests or activities may be affected by the activities to be carried out under the EP
	Oil & Gas Industry Operators in Bass Strait
7	• BHP Billiton Petroleum
24	• Seven Group Holdings (Formerly Nexus)
26	• Origin Energy
34	• Cooper Energy (Formerly Santos)
57	• ROC Oil Limited
58	• Oil Basins Limited
61	• Carnarvon Hibiscus Pty Ltd
87	• Bass Oil Company Limited
100	• CarbonNet
122	• 3D Oil
	Fishing Associations
18	• Lakes Entrance Scallop Fishing Industry Association
40	• Sustainable Shark Fishing Association
51	• Victorian Recreational Fishing (VRFish)
52	• Victorian Scallop Industry Association
71	• Victorian Fishery Association Resource Management
76	• Commonwealth Fisheries Association (CFA)
77	• Southern Shark Industry Alliance
41	• Tasmanian Seafood Industry Council
120	• Tuna Australia Limited
121	• Australian southern Bluefin Tuna Industry Association
123	• Panama II Octopus fishing vessel
124	• Victoria Game Fishing Club
	Ports
14	• Geelong Ports
28	• Port of Hastings
Tertiary Stakeholders	
	Department or agency of the State (Victoria/Tasmania) to which the activities to be carried out under the EP may be relevant
10	• East Gippsland Catchment Management Authority
63	• Department of Primary Industries, Parks, Water and Environment (DPIPWE)
64	• Tasmanian Parks and Wildlife Service
	Persons or organisations whose functions, interests or activities may be affected by the activities to be carried out under the EP

ID No.	Stakeholder Name
	Responders
109	• Life Saving Victoria
84	• Port Phillip Sea Pilots
119	• Border Protection Command
	Fishing Associations
70	• Victorian Bays and Inlets Fisheries Associations
74	• Warrnambool Professional Fishermen's Association
66	• Apollo Bay Fishermen's Co-op
73	• Victorian Rock Lobster Association
79	• Eastern Victorian Sea Urchin Divers Association & Eastern Zone Abalone Industry Association
82	• East Gippsland Estuarine Fishermen's Association
83	• Corner Inlet Fisheries Habitat Association
	Ports
30	• Port Franklin Fisherman's Association
32	• Victorian Ports Corporation
115	• Port of Portland
112	• Victorian Regional Channels Authority
	Councils/Shires/Boards
11	• East Gippsland Shire Council
20	• Wellington Shire Council
38	• South Gippsland Shire Council
93	• Mornington Peninsula Shire
108	• Central Coastal Board
	Other person or organisation that the titleholder considers relevant
107	• Boating Industry Association of Victoria
111	• Yachting Victoria
116	• Gippsland Times
81	• Australian Oceanographic Services
88	• Alistair Mailer
117	• Lakes Post
118	• Australian Communications and Media Authority

8.2 Mechanisms for Consultation

A number of mechanisms to communicate with stakeholders have been used to ensure stakeholders can make an informed assessment of the possible consequences of the activity on their functions, interests or activities.

The following mechanisms were used to communicate with stakeholders:

- written communications:
- one-on-one discussions via telephone and in-person.
- community information session in Lakes Entrance (17 November 2017):
- Esso community news webpage

8.2.1 Written communications

Early in October 2017, an email update was sent to Esso's Public and Government Affairs existing offshore stakeholder database, informing them about upcoming activities in the Gippsland Basin and reason Esso was seeking to consult with the stakeholders. A three-page fact sheet (*Esso Offshore Projects*) was attached, providing details of the planned CBA PRP. Additionally, it included an invitation to attend the public consultation session in November 2017, or arrange an alternative meeting time at their convenience.

Personal invitations for the Lakes Entrance consultation forum went out to relevant stakeholders in October 2017. In addition to the letter drop and fact sheet, the Lakes Entrance consultation forum was promoted through a series of announcements in a local newspaper (Gippsland Times: "*Back in the hunt for Gippsland gas",* 26 September 2017), with ongoing communications in fishing trade magazines (SETFIA, LEFCOL).

Following the email and consultation session some stakeholders indicated they had received adequate information, had no comments, and would like to be 'considered consulted'. A greater number indicated

a general interest in being 'kept in the loop' without any specific comments or queries about the planned activity.

In December 2017, a revised fact sheet was sent to all relevant stakeholders further informing them of Esso projects including the consideration of a temporary Petroleum Safety Zone for the CBA PRP and planned timing.

A two page article on Esso's Offshore Projects, including the CBA PRP, was circulated in the May 2018 issue of PROFISH (SIV quarterly newsletter).

In August 2018 an Esso Offshore Projects fact sheet providing high level details about projects including the Cobia pipeline repair campaign, regulatory requirements and stakeholder consultation was again distributed to all relevant stakeholders.

8.2.2 One-on-one discussions via telephone and in person

Depending on the stakeholders' preference, telephone and in-person discussions were held to clarify and discuss the EP and OPEP.

The stakeholders consulted on the CBA PRP in one on one meetings and via phone calls include;

- SIV, SETFIA and LEFCOL
- AMSA
- DEDJTR
- DAWR
- NOPTA
- NOPSEMA

A number of other stakeholders have been consulted with in terms of oil spill response as part of EAPL's other projects (Baldfish Drilling and Blackback P&A) and the consultation associated with those are also considered to encompass the oil spill arrangements for the CBA PRP. These stakeholders include;

- AMOSC
- Tasmania DPIPWE
- NSW Maritime

8.2.3 Public consultation session in Lakes Entrance

The public consultation session was held in Lakes Entrance on 17 November 2017 and was intended to consult about the project, as documented in this Environment Plan and supporting OPEP, and provide an opportunity for both known stakeholders and unknown stakeholders to learn more about Esso's offshore operations. Invitations were announced widely, followed up by individual follow-up invitations by telephone in the week before the public consultation session.

The session was well attended, with 32 stakeholders confirmed, from a wide range of backgrounds, of which 27 attended on the day. Key stakeholders with particular relevance to the CBA PRP location included Johnathon Davey from Seafood Industry Victoria and Brad Duncan from LEFCOL. Esso was represented by the Offshore Operations Manager, the Offshore Risk, Environmental & Regulatory Supervisor, Public and Government Affairs (P&GA) and the Project SSHE Coordinator. A brief overview of planned activities, including the CBA PRP, was presented by the Esso Offshore Operations Manager. This was followed by a Q&A session and one-on-one conversations.

A series of informative posters were also presented at the session, which visitors were invited to read and discuss with Esso personnel. In addition, the flyer with information on the CBA PRP was available for visitors to take away.

No major concerns were raised with regards the CBA PRP. Areas discussed included the proximity to the Fishery Independent Survey (FIS) sites and the nature of the flexible repair. Further details summarised below.

Tourist Information: introduced the project and EAPL operations, minor issues raised included a request for additional information sheets and posters that they could provide to interested members of the public, introduced to the Esso P&GA Representative.

LEFCOL: informal talk about the various projects and what impact there could be on the local fishermen. CBA may be the closest to the FIS locations, estimated 6 NM from Shot Code 105 however the CBA PRP activities will occur well after the planned FIS survey. In addition the level of noise and discharges are unlikely to be significant and may be hard to differentiate from the passing marine traffic, hence the CBA PRP is unlikely to have any impact on the FIS locations. The flexible will be laid in one piece and there will be no snagging points on the pipeline repair. No major concerns raised.

8.2.4 Webpage

In August 2017, Esso updated its offshore webpage (www.exxonmobil.com.au/) with information about the acquisition of permit VIC/P70 and the hunt for new gas ("*Back in the hunt for Gippsland gas*", Richard Owen, Lead Country Manager, 3 August 2017).

Esso also created a portal of information throughout the consultation period (Esso community news webpage), which included:

- Downloadable PDF of the fact sheet ("*Esso Offshore Projects*") on CBA PRP and other planned activities in Gippsland Basin, which included an announcement about the upcoming consultation session (Oct. 2017).
- Information about Esso plans to extend field life of Gippsland basin:
    - "Back in the hunt for Gippsland gas" (Aug. 2017);
    - "Key gas fields nearing the end but news not all bad" (Oct. 2017);
    - "East coast gas supply Q&As"
- The webpage also features a clear "*contact us*" link for interested parties to email Esso.

An "Offshore Projects" page was created in November 2017, to provide ongoing updates on Esso offshore activities (http://www.exxonmobil.com.au/en-au/energy/natural-gas/natural-gas-operations/offshore-projects). This was updated in August 2018 with:

- Downloadable PDF of the most recent '*Offshore Projects Fact Sheet'* (Aug. 2018)
- Information about Esso's planned program of offshore work including the Cobia pipeline repair project to be undertaken by the Seven Eagle dive support vessel.

8.3 Consultation Outcomes

Much of the interaction with stakeholders during the consultative process was administrative in nature, rather than feedback about the Environment Plan. Common reasons for providing feedback throughout the process were to:

- Re-direct Esso's communication to another position in the organisation;
- Advise Esso the stakeholder would like to be kept updated about Esso's offshore operations;
- Notification they had received the information and considered themselves consulted.

A small number of stakeholders have either asked clarifying questions about, or provided comment on, the CBA PRP. These questions and Esso's assessments and responses are summarised in the following table.

Table 8-2 Summary of Key Issues raised, Merits and Measures Adopted

Issue	Raised by	Merit and Measures Adopted
Proximity to Fishery Independent Survey (FIS) locations and the potential to impact the quality of this survey	SETFIA	This has been discussed with LEFCOL and SETFIA. The timing of the FIS was uncertain, it was supposed to be mid-year but recent communication from SETFIA has stated that it has been delayed and is unlikely to occur before 2020. The CBA PRP is scheduled for December 2018 and hence there is no impact. Esso and SETFIA

		will continue to consult to manage any interactions. At this stage impacts with the FIS are not considered to be relevant to the CBA PRP.
Snagging points along the pipeline raised by LEFCOL and SETFIA	SETFIA	The flexible pipeline will be laid in one piece with no joints. The only potential snagging points will be adjacent to the CBA and HLA platforms and within their respective existing PSZs. No additional measures required or adopted
Consultation with fishermen	LEFCOL, SETFIA, SIV	All the main fishing organisations have expressed concern about how individual fishermen can be made aware of the various projects and the level of consultation. Through discussions with SIV, Esso is planning to publish information about its projects, including CBA PRP within the SIV quarterly newsletter PROFISH. Through discussions with SETFIA, Esso are also planning to have SMS alerts issued to SETFIA fishing contacts to raise the awareness of the project activities, including when and where they are taking place. Further means of consultation will also be assessed as and when they are identified. Given the level of fishing based on the ABARES data Esso consider that the consultation with SETFIA, LEFCOL and SIV and the use of the SIV newsletter and SETFIA SMS system should be sufficient. Monthly phone calls between Esso and SETFIA are scheduled and requirements for further consultation is discussed in these meetings.

A detailed summary of the consultation that has taken place (names and contact details deleted for privacy of information) is included in Appendix 1.

8.4 Ongoing Consultation

Esso will continue to consult with stakeholders on an ongoing basis. This will consist of:

- Maintaining the database of relevant stakeholders potentially affected by offshore production operations and records of consultation for each stakeholder.
- Follow up with stakeholders after the EP is accepted by NOPSEMA, to thank them for their involvement, update them of the outcome, notify them of next steps going forward, and make available to them the Environment Plan summary.
- Provide an update to stakeholders at the end of the campaign, which will contain an update about the pipeline repair activities, including information such as environmental performance data.
- Providing any new relevant information through the dedicated website content at https://www.exxonmobil.com.au/en-au/energy/natural-gas/natural-gas-operations/offshore-projects.
- An Esso offshore operations community information session to be held in Lakes Entrance in December 2018.

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Appendix 1 Consultation Log Summary

Organisation:	**Australian Fisheries Management Authority**				**ID 4**
Contact Name:	[redacted]				
Position:					
1160	26-Oct-17	[redacted] ad phone call with [redacted] regarding: [redacted] nquired if we had spoken with SEFTIA. I responded that we have provided written information by Email, that we will follow up with telephone conversations shortly, as well as face to face discussions and have invited them to Lakes Entrance Meeting. [redacted] re-stated previous, that data are confidential, that only info on an area with less than 5 boats can be released, and that this determines minimum area they can release info on. I confirmed that we have studied ABARE data, that these are very useful, but that they do not provide adequate resolution on fishing activity in Block VIC/P70 [redacted] stated that she will request info on 1 degree square as minimum (60 x 60 NM). I confirmed that we are happy to receive what every resolution they are comfortable releasing AFMA will independently advise regulators also on fishing activity in Block VICP70, as a matter of routine. [redacted] will get quote to us ASAP.	☐	No objections, claims or issues raised	
Organisation:	**Australian Maritime Safety Authority**				**ID 2**
Contact Name:	[redacted]				
Position:	[redacted]				
1285	08-Jan-18	Email received from [redacted] (AMSA) wanting to confirm whether Esso intends to conduct further consultation for the VIC/L1 development and Cobia pipeline project as this will determine whether AMSA provide a formal response at this time.	☑	ISSUE: [redacted] wanting to confirm whether Esso intends to conduct further consultation for the VIC/L1 development and Cobia pipeline project. MERIT: [redacted] sent email response: Esso will be conducting further consultation on both the VIC/L1 and Cobia pipeline projects. Both these are located within the Bass Strait Area to Be Avoided, so we don't envisage any significant impact to commercial shipping. Consultation directly with fishing industry groups will be undertaken to manage any interaction with their activities.	11-Jan-18

1742	12-Jun-18	Email sent from [redacted] (EAPL) to [redacted] (AMSA): Hi [redacted], We also sent information out last year on the Cobia pipeline repair project and given your email below, that the timeframe for Cobia is becoming firmer and we will be looking to establish a temporary petroleum safety zone I thought it sensible to re-contact AMSA. The Cobia pipeline repair project will install a flexible pipeline between the Cobia and Halibut platforms, all located with the Area to be Avoided. The timing of this is early December 2018 and will likely take 10-14 days. The pipeline will be installed by the Seven Eagle, a dive support vessel operated by Subsea7. Pipeline installation will involve the vessel laying pipeline between Halibut and Cobia, during which it will have limited maneuverability and there will be saturation diving at Halibut and Cobia to tie in the flexible to the existing facilities. To provide additional protection to the vessel and divers we are proposing to request NOPSEMA to gazette a temporary petroleum safety zone along the pipeline route. This should not have any impact on commercial vessels, given its location within the ATBA and we will be consulting further with the fishing industry in the area to understand and mitigate any impacts. As per the email below we will ask the vessel to notify AMSA's Joint Rescue Coordination Centre and the Australian Hydrographic Office. If you have any further questions please contact me.	☐	No objections, claims or issues raised
1743	13-Jun-18	Email received from [redacted] (AMSA) to [redacted] (EAPL): Thank you for providing information on the Cobia pipeline repair project between the Cobia and Halibut platforms in the ATBA offshore Gippsland, Victoria. Thank you for stating that you will ask the vessel to notify AMSA's JRCC for the promulgation of an Auscoast warning and the Australian Hydrographic Office for a NtM. AMSA also notes that you propose to request NOPSEMA to gazette temporary PSZs during the activities. I have attached a vessel traffic plot using the same 3 months (January to March 2018) for the area of interest. As you know, support craft will be encountered during your activities. Please let me know if you have any queries.	☐	No objections, claims or issues raised
2114	31-Aug-18	Email sent from [redacted] (EAPL) to [redacted] (AMSA): Just to keep you informed we applied for a temporary petroleum zone around the Cobia pipeline for installation but were informed by NOPSEMA that this can not be done. The risk is low and we will look to manage it via Auscoast warnings and NtMs. Installation date is still looking like early December.	☐	No objections, claims or issues raised

Organisation:	**Department of Agriculture and Water Resources**		**ID 99**
Contact Name:	[redacted]		
Position:	[redacted]		

2113	22-Aug-18	10.30am 22 August 2018 telephone conversation between [redacted] and the Maritime National Coordination Centre (MNCC) on [redacted]. Explained that in December 2018 Esso would be bringing a vessel from the North Sea via Singapore onto a petroleum title area approx. 70km offshore in Bass Strait for a period of approximately two weeks. MNCC stated that they did not need to be either consulted on, or informed of, movement of international vessels outside Australian territorial seas (i.e. beyond the 12NM territorial sea boundary). MNCC confirmed that should the vessel be planning to enter Australian waters the reporting requirement is submission of pre-arrival information through MARS no later than 12 hours prior to arrival (as applicable to all commercial vessels entering Australian waters) and any changes in circumstances during the voyage in Australian waters must be reported as soon as practicable.	☐

Organisation:	**Department of Agriculture and Water Resources**			**ID 127**
Contact Name:	[redacted]			
Position:	[redacted]			
2139	06-Nov-18	Phone discussion between [redacted] (EAPL) and [redacted] (DAWR): Record of phone call (6 Nov) with [redacted] The intent of the Cobia pipeline repair project was presented with [redacted] and the following discussed; The Seven Eagle is mobilizing from the North Sea, with the new flexible in the hold and will be submitting a MARS form on arrival in either Hastings or Port Melbourne. The vessel will be in port mobilizing for a couple of days and will then depart for the CBA project. This is 70km offshore and in about 76m of water. A vessel check using the WA guideline was undertaken and the result was an uncertain risk. This led to vessel inspection in Scotland conducted by [redacted]. The inspection found a single dead IMS species and concluded that the risk from IMS to Victorian state water was Low. The risk to the CBA pipeline area was also assessed to be Low. Supporting the Seven Eagle will be a domestic vessel the Bhagwan Dryden, she is currently working in the north west. The IMS risk from the Dryden will also be examined but is expected to be low. [redacted] indicated that this met best practice and that nothing else needed to be done. He suggested putting the information into an email and that he would discuss with his colleagues and provide a response to demonstrate consultation for NOPSEMA.	☐	No objections, claims or issues raised

2137	06-Nov-18	Email from [redacted] (EAPL) to [redacted] (DAWR): As discussed this afternoon Esso Australia are planning to repair the Cobia to Halibut pipeline in Bass Strait. The pipeline is about 65km offshore and in about 74-76m of water. To repair the pipeline a Dive Support Vessel (DSV), the Seven Eagle, has been mobilized from the North Sea. She has picked up the flexible pipeline (that will be used to repair the pipeline between the two platforms) in Denmark and will likely mobilize and demobilize in Victoria at Port Melbourne. The pipeline is being transferred as cargo and the vessel will be travelling at about 12knots. A stop in Limmasol and then in Singapore is also expected where additional equipment will be loaded on board, on the way to Australia. As part of arrival in Australia the Seven Eagle will comply with MARS requirements. Mobilization and demobilization are expected to both take about 48hrs and the offshore campaign is planned to be about 2 weeks, with a number of days at each platform and an allowance for weather. She is currently expected to leave Australia following the campaign. A Vessel Check was completed using the WA process and in line with the National Biofouling Management Guidance for the Petroleum Production and Exploration Industry, to determine the level of risk the Seven Eagle posed from an IMS perspective in Victorian waters. This result of this check was that it came out on the low side of "Uncertain". With the results of this assessment a vessel inspection was deemed necessary and this was conducted at the end of September in Scotland. The assessment and visual inspection was conducted and managed by Dr [redacted] of Biofouling Solutions. The in water inspection identified one dead Ivory barnacle, A. eburneus and involved over four hours of diving with good representative samples collected and processed. The IMS inspector achieved a high level of confidence that they would have detected IMS had they been present during the inspection. While there is possibly of more A. eburenus and/or other IMS being present in some of the areas not inspected, it is unlikely that they would be present in high abundance. Therefore, in light of the Seven Eagle's proposed operations in Bass Strait (i.e. between 3-7 day residency period in Hastings or Port of Melbourne and a further 8-15 days undertaking dive support operations out on the Cobia Pipeline Project) before departing Australian waters, such minimal exposure was determined unlikely to pose a biosecurity risk of introducing any IMS to Victorian waters. The Vessel Check was recompleted with the new information from the inspection and the result was that the vessel posed a low/acceptable level of risk. While there is potential for the vessel to become infected with IMS between the time of finishing the inspection and her arrival into Victorian waters, this was also considered to be a low risk. The likelihood of any IMS successfully transferring from the Seven Eagle to the Cobia or Halibut installations whilst she is conducting a petroleum activity was considered extremely low/unlikely and hence also deemed to be a low risk. The Seven Eagle will be supported by the Bhagwan Dryden a domestic offshore vessel that has previously worked in Bass Strait and that is currently working in the North / North West. The Dryden will also mobilize and demobilize in Port Melbourne and will also visit Barry Beach. The vessel check for the Dryden is yet to be fully completed but the risk is expected to be Low. As part of the project Esso has developed an Environment Plan and as part this we are consulting with relevant parties. A colleague of mine spoke to a DAWR	☐	No objections, claims or issues raised

representative in Perth a month or so ago and there were no concerns or issues raised at that stage. The project has now progressed and the results of the in-water inspection have provided further information to support the low assessed level of risk associated with IMS introduction.

If you would like any further information please let me know, note we are looking to resubmit the Plan this week and any feedback would be gratefully received.

Organisation:	[redacted]			**ID**	**43**
Contact Name:	[redacted], [redacted]				
Position:	**Manager, Marine Pollution - Emergency Management Division**				
1992	09-Jul-18	Email received by [redacted] (EAPL) from [redacted] (DEDJTR): Hi [redacted], I was just talking to [redacted] about the Baldfish work and arrangements more generally. [redacted] suggested a meeting between the three of us, and any other interested parties from state government (DELWP, Parks, EPA, TSV) to discuss the work you have coming up in the next year or so, and I think that would be useful, certainly from my point of view to get me up to speed. Could you please let me know what your availability is like in the next few weeks and I'll set something up?	☑	ISSUE: meeting to be arranged between EAPL, DEDJTR, DELWP, Parks, EPA, TSV MERIT: A meeting between EAPL base business, EAPL projects and Vic State departments was held on 23 August 2018.	23-Aug-18
2002	25-Jul-18	[redacted] (EAPL) received invitation to a meeting with EcoDev / DEDJTR / parks victoria and EPA on 21/08/18. Attendees will be [redacted] (EAPL), [redacted] (EAPL), and possibly the following (they have been invited by [redacted] (DEDJTR) who is organizing it). [redacted] DEDJTR / ecodev [redacted]	☐	No objections, claims or issues raised	

2117	23-Aug-18	DEDJTR Discussion – focusing on Offshore Operations 23rd of August 2018. Attendees [redacted] – DEDJTR [redacted]– DEDJTR [redacted] – DEDJTR [redacted] – DEDJTR [redacted] – Parks Victoria [redacted] – ExxonMobil [redacted] – ExxonMobil [redacted] – ExxonMobil Apologies [redacted] – DELWP [redacted] - EPA Stakeholder newsletter [redacted] presented a copy of the Offshore Stakeholder Newsletter and an update on upcoming offshore activities. The Baldfish drilling program is kicking off next week in the VIC P70 license, 70 k offshore. The regulatory plans are approved by NOPSEMA. The activity is on the edge of the shipping lane and AMSA has been engaged. There will be standby vessel on location during the program. The rig will then proceed to conduct P&A program at Blackback. Marine pollution response plans mirror Baldfish plans. We have one OPEP for base business and now specific EP and OPEP for projects including the Cobia pipeline replacement. In the next couple of years we have a number of plans we will be working on and will develop a new OPEP/OSMP to cover all activities. The OPEP/OSMP planned to be completed by year end will cover all our future operations over the next 5 years. Are there any pollution risks for P&A program? – Vessel collision, blow out scenario were modeled. The release were considerably smaller due to the end of life of the field. There was no predicted shoreline impact or state waters. Supply vessel is operating from Corner Inlet, and has two anchor handlers operating out of Port of Melbourne on location. Will the subsea equipment (Blackback) be removed – Not as this stage this will be evaluated to determine future actions. The subsea trees and well heads will be removed. Stakeholder engagement with fisheries has been completed. Cobia pipeline replacement. We suspended operations a few years ago and we are planning on repairing the Cobia pipeline. Timing is December 2018. A vessel is coming in from North Sea and will bring a flexible pipeline. Short operation (2 weeks) and will be at Cobia and Halibut locations. The operations include cutting and fitting adapter to the old pipeline. 5 ½ kilometers of pipeline is required to be repaired. The pipeline is only between platforms. The pipeline currently is filled with inhibited water. The vessel will come into Hastings and has met all regulatory requirements. Management arrangements regarding biofouling and ballast were discussed.	☐	No objections, claims or issues raised

Next year platform based Plug and Abandonment of well will commence.
Kipper drilling programs is planned for later next year. The revised OPEP will also cover these activities.
Reviews of response capabilities will be reviewed at this stage as the locations are closer to shore.
Increased supply vessel operations may occur in the future due to these projects.

PFW study has been conducted to understand the longer term impacts into the environment.

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[redacted] Energy are looking to align on the work we are doing in relation to Tactical Response Plans.
Do they form part of the OPEP? They will be an appendix. The draft TRP were provided to the state for their use. DEDJTR are very interested.

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Esso meet with [redacted] (DELWP) and [redacted] (DEDJTR) earlier this year to discuss oiled wildlife response (now referred to as wildlife impacted by marine pollution) arrangements. Esso has a commitment to test the arrangements in our plan this year where NOPSEMA have indicated they would like Esso to explore access to resources detailed. DEDJTR are interested to be involved in some way. We would like to discuss conducting a test to be mutual benefit. OWR arrangements are also being tested nationally through AMOSC, including access to trained industry personnel and vets. Something to consider in testing arrangements is what would the incident management look like?

Maritime Emergency sub plans have been finalized and can be found on the Vic Emergency Response Website. The Victorian wildlife plan is still in draft. [redacted] is the best person to talk to when he returns from leave.
[redacted] provided an update on the new structure of the State Maritime Emergency Working Group and the proposed sub groups.
Interest in conducting an exercise at Gellibrand from Mobil Altona Refinery SHE Manger. Still need to discuss with the port authority.
DEDJTR discussed the recent sheen offshore near golden beach. There was confusion with regards to the regulatory notification as DEDJTR had heard from NOPSEMA. DEDJTR queried if there was any follow up from Esso with regards to the sheen. Esso not aware of any follow up

Organisation: **Department of Economic Development, Jobs, Transport and Resources** **ID 126**
Contact Name: [redacted], [redacted]
Position: [redacted]

2140	06-Nov-18	Phone discussion between [redacted] (EAPL) and Dr [redacted] (DEDJTR): Record of consultation on 6th November with DEDJTR on IMS. Dr [redacted] [redacted] Called to confirm receipt of email and discuss Cobia project. [redacted] thanked us for our detailed email setting out the key IMS issues associated with the project. Based on the email and the results of the seven eagle IMS inspection he had no initial concerns. He will read it again and will contact [redacted] to discuss any issues directly. In terms of the HRV / support vessel he thought that if it had been cleared for work in W.A. it would be fine to work in Victoria. There are more IMS in Port Philip / Melbourne and it would typically be more of an issue if it was going from here to W.A. Based on the above assessments and inspections project is following best practice. He will call me if he has any further questions.	☐	No objections, claims or issues raised

2138	07-Nov-18	Email from [redacted] (EAPL) to [redacted] [redacted] (DEDJTR): Hi [redacted], [redacted] [redacted] suggested contacting you regarding consultation on IMS issues. Unfortunately I have been unable to contact you on the phone so am sending this message and hopefully we can discuss the issues when convenient. Esso Australia are planning to repair the Cobia to Halibut pipeline in Bass Strait. The pipeline is about 65km offshore and in about 74-76m of water. To repair the pipeline a Dive Support Vessel (DSV), the Seven Eagle, has been mobilized from the North Sea. She has picked up the flexible pipeline (that will be used to repair the pipeline between the two platforms) in Denmark and will likely mobilize and demobilize in Victoria at Port Melbourne. The pipeline is being transferred as cargo and the vessel will be travelling at about 12knots. A stop in Limmasol and then in Singapore is also expected where additional equipment will be loaded on board, on the way to Australia. As part of arrival in Australia, expected in early December, the Seven Eagle will comply with MARS requirements. Mobilization and demobilization are expected to both take about 48hrs and the offshore campaign is planned to be about 2 weeks, with a number of days at each platform and an allowance for weather. She is currently expected to leave Australia following the campaign. A Vessel Check was completed using the WA process and in line with the National Biofouling Management Guidance for the Petroleum Production and Exploration Industry, to determine the level of risk the Seven Eagle posed from an IMS perspective in Victorian waters. This result of this check was that it came out on the low side of "Uncertain". With the results of this assessment a vessel inspection was deemed necessary and this was conducted at the end of September in Scotland. The assessment and visual inspection was conducted and managed by Dr [redacted] [redacted] of Biofouling Solutions. The in water inspection identified one dead Ivory barnacle, A. eburneus and involved over four hours of diving with good representative samples collected and processed. The IMS inspector achieved a high level of confidence that they would have detected IMS had they been present during the inspection. While there is possibly of more A. eburenus and/or other IMS being present in some of the areas not inspected, it is unlikely that they would be present in high abundance. Therefore, in light of the Seven Eagle's proposed operations in Bass Strait (i.e. between 3-7 day residency period in Hastings or Port of Melbourne and a further 8-15 days undertaking dive support operations out on the Cobia Pipeline Project) before departing Australian waters, such minimal exposure was determined unlikely to pose a biosecurity risk of introducing any IMS to Victorian waters. The Vessel Check was recompleted with the new information from the inspection and the result was that the vessel posed a low/acceptable level of risk. While there is potential for the vessel to become infected with IMS between the time of finishing the inspection and her arrival into Victorian waters, this was also considered to be a low risk. The likelihood of any IMS successfully transferring from the Seven Eagle to the Cobia or Halibut installations whilst she is conducting a petroleum activity was considered extremely low/unlikely and hence also deemed to be a low risk. The Seven Eagle will be supported by the Bhagwan Dryden a domestic offshore vessel that has previously worked in Bass Strait and that is currently working in	☐	No objections, claims or issues raised

		the North / North West. The Dryden will also mobilize and demobilize in Port Melbourne and will also visit Barry Beach. The IMS assessment for the Dryden is yet to be fully completed but the risk is expected to be Low. As part of the project Esso has developed an Environment Plan and as part this we are consulting with relevant parties. A colleague of mine spoke to a DEDJTR representatives a few months ago and there were no concerns or issues raised at that stage. The project has now progressed and the results of the in-water inspection have provided further information to support the low assessed level of risk associated with IMS introduction. I have also been in touch with DAWR and from our phone call they indicated that we were doing everything required and had no immediate concerns. If you would like any further information please let me know.			
Organisation:	**Lakes Entrance Fishermans' Co-op**				**ID 17**
Contact Name:	[redacted], [redacted]				
Position:	[redacted]				
169	01-Nov-17	[redacted] (EAPL) spoke with [redacted] re the various Esso projects that are planned for the next 12 months – Baldfish Exploration drilling, Cobia pipeline repair and the West Barracouta development. [redacted] had received the flyer and the invite. [redacted] deferred the impact / interaction with fishers to [redacted] (SETFIA) and would welcome a joint meeting with [redacted] - mentioned that the 17th November would be good after the larger stakeholder meeting planned.	☐	No objections, claims or issues raised	
314	17-Nov-17	[redacted] attended the Lakes Entrance community session. The various projects were discussed with [redacted] and what impact there could be on the local fishermen. Cobia PRP will have virtually no impact, campaign is only a couple of weeks toward the end of the year and after the FIS survey. West Barracouta project is only at an early stage and the current campaign is only examining suitable locations for a rig and providing data for future project steps – further consultation will be undertaken as the project progresses. Baldfish drilling campaign may be the closest to the FIS locations, estimated about 20 min away but we are after the actual FIS coordinates to calculate the exact separation distances. The Baldfish drilling campaign is unlikely to have any impact on the FIS locations the level of noise and discharges is unlikely to be significant and may be hard to differentiate from the passing marine traffic. Explained [redacted] had been asked for details of the FIS locations and [redacted] said he would discuss with [redacted] next time when they met. [redacted] and [redacted] see each other regularly. No major concerns raised.	☑	ISSUE: Potential issue with proximity of Baldfish to FIS survey location. Merits and issue to be further reviewed. No objections, claims or issues raised for West Barracouta or Cobia. MERIT: Yes and the issue has been reviewed further. The FIS locations are a sufficient distance from Baldfish and this was discussed with LEFCOL & SEFIA in meeting 15/2/18. The well sites are 11 nm from the FIS locations and are also separated by the shipping lane. The additional noise levels from drilling are not expected to have any significant impact on fish densities. Esso and SETFIA will continue to liase to determin if supply vessel routing should be adjusted during the actual FIS timing.	15-Feb-18
1163	14-Dec-17	[redacted] (EAPL) sent email to [redacted] looking to confirm the location of the nearest FIS locations to next years drilling campaign, as discussed at the Lakes Entrance meeting in November.	☐	No objections, claims or issues raised	

1462	23-Jan-18	Email sent to [redacted] and SETFIA from [redacted]: Here is our review of the distance to the nearest FIS Locations from the Baldfish drilling and Cobia pipeline repair projects. The Cobia repair (between Halibut, HLA and Cobia CBA) is very unlikely to take place earlier than Dec this year so there will be no impact. (SEE ATTACHMENT) The Baldfish drilling campaign is still scheduled for early Q3. The Baldfish well is between 12 and 16 NM from the FIS location and Hairtail is between 11 and 15 NM. Both the wells are the other side of a shipping lane, so any noise impacts are likely to be low in comparison to the impact from passing vessels. Many thanks for the information on the SMS service, we will be looking to use it to advise fishermen of our activities and to minimise any impact. In the mean time I will keep you updated on the campaign and will look to arrange a meeting with you and [redacted] in the next couple of months.	☐	No objections, claims or issues raised
1475	09-Feb-18	Email sent from [redacted] (EAPL) to LEFCOL & SETFIA: Hi [redacted], [redacted], I'm in Lakes Entrance next Thursday 15th Feb, would be happy to pop in and give you an update on our planned activities on either the Thursday afternoon or Friday morning. Let me know if this is of interest. Response from [redacted] [redacted] (SETFIA): Thursday works for me Email from [redacted] (EAPL) to [redacted] [redacted] (SETFIA) and (LEFCOL): What time Thursday afternoon suits you - would 4pm at the LEFCOL offices work? If there is anything specific you want to know about please let me know or I can give you a general update and we can discuss things as they come up.	☐	No objections, claims or issues raised

Organisation: **National Offshore Petroleum Titles Administrator** **ID 85**

Contact Name: [redacted], [redacted]

Position: [redacted]

1833	30-Nov-17	Email from [redacted] [redacted] (EAPL) to [redacted] [redacted] (NOPTA): [redacted], Please find attached a request variation of conditions for pipeline licence Vic PL/1. The request is submitted under section 226 of the OPGGSA and covers variations per those previously discussed with NOPTA for the VIC/PL19 licence variation. This is the 2nd of 27 similar variations currently planned for submission. Note that payment will be provided once the request is available through NEATS – can you please inform when this will be available? Many thanks for your consideration of this request. Please feel free to ask with any questions or clarifications.	☐	No objections, claims or issues raised
1834	01-Feb-18	Email from [redacted] [redacted] (NOPTA) to [redacted] [redacted] (EAPL): Good afternoon [redacted], Please see attached request for further information re the VIC/PL1 pipeline variation application. Please let me know if you have any questions. FYI we are also finalising RFI letters for VIC/PL9, VIC/PL10, VIC/PL11 and VIC/PL20 and should hopefully have these to you next week.	☐	No objections, claims or issues raised

1848	04-Apr-18	Email sent from [redacted] [redacted] (EAPL) to NOPTA: Dear Sir / Madam Please find attached our submission for a variation to the pipeline licence for the VICPL15 pipeline The submission is 2 files: (a) Submission Form (b) Variation 226 report	☐	No objections, claims or issues raised
1847	04-Apr-18	Email from NOPTA: Submission - EAPL - VICPL15 Variation Thank you for emailing the National Offshore Petroleum Titles Administrator (NOPTA) Titles Team. Please accept this email as acknowledgement that your email has been received by NOPTA.	☐	No objections, claims or issues raised
1835	20-Apr-18	Email from [redacted] [redacted] (EAPL) to [redacted] [redacted] (NOPTA): Dear [redacted] Please find attached, Esso's responses to NOPTA's request for information related to the pipeline license condition variations requests for Vic PL1, PL9, PL10, PL11 and PL20. We've included location maps within the documents as requested. We've made comments as track changes alongside the comments made by NOPTA in the attached documents. [redacted] – can we suggest that we have meeting at NOPTA's office in the next week or so, to discuss our responses? We are available on Tuesday, April 24th afternoon or alternatively the afternoon of Friday, May 4th. Let me know if any of these times work, or if you'd like to suggest an alternative time. Thank you [redacted] and look forward to hearing from you.	☐	No objections, claims or issues raised
1837	30-Apr-18	Email from [redacted] [redacted] (NOPTA) to [redacted] [redacted] (EAPL):Good morning [redacted], Just letting you know that we are still in the process of finalising a request for further information in respect of the Cobia variation application, following which I will touch base with you to arrange a meeting as per your request. In the meantime, it appears that Esso's RFI responses in respect of VIC/PL1, 9, 10, 11 and 20 did not include an updated map/schematic of the pipeline as requested (including the commencement and termination co ordinates of the pipeline on the location map, the coastal waters three nautical mile limit (where applicable), labels for any nearby infrastructure and petroleum production licences). If you could please provide an updated map/schematic in respect of each of the licences above at your earliest convenience that would be appreciated.	☐	No objections, claims or issues raised
1853	07-May-18	Email from [redacted] [redacted] (NOPTA) to [redacted] (EAPL): Good afternoon, As per my discussion with [redacted] this afternoon, please see attached request for further information.	☐	No objections, claims or issues raised

1838	07-May-18	Email from [redacted] (EAPL) to [redacted] (NOPTA): Hi [redacted] Thank you for your email below. We reviewed the attachments to our email to you with the RFI responses, and can confirm that they included maps of each of the pipelines and updated coordinates of key points. So we're unsure why you are not able to view them. Or maybe, we do not understand your question. Is it worth a phone call to discuss? For completeness, I re-attach here the RFI responses, that I'd sent to you on 20 April.	☐	No objections, claims or issues raised
1839	09-May-18	Email from [redacted] (NOPTA) to [redacted] (EAPL): Hi [redacted], I tried to call you yesterday but you were away from your office. I understand you're away today and tomorrow so I'll respond to your query below by email – happy to follow up with a call when you're back in the office. As the pipeline route maps will form part of the pipeline licence once varied, and will therefore be publicly available via the NEAT's website, we are just seeking some minor additional detail be included on the maps to make them more readable/understandable to the general public. For example, on the VIC/PL1 map you've provided it would be useful to: • Label the Barracouta Platform as this is a key descriptor for the pipeline start point (the current 'BTA' label may not mean much to the lay person) • Draw in or label the 3 nm limit, as this is a key descriptor for the pipeline end point • Label the start and end points on the map with the relevant coordinates, which will help to link the map with the route coordinate table. It may also be useful to label some of the other nearby infrastructure on the maps (platforms/pipelines) where this may help to provide additional locational context (e.g. the maps for VIC/PL9 or VIC/PL11 don't have any geographical reference point such as a coastline, so labelling the surrounding platforms (e.g. VIC/PL9) or tie-in pipelines (e.g. VIC/P11) may assist to provide that additional locational context). I hope that assists/makes sense? If not, I'm happy to give you a call. Or, if you think that this is likely to cause you significant difficulties perhaps it's something we can discuss in more detail when we meet on the 18th May.	☐	No objections, claims or issues raised
1840	09-May-18	Email from [redacted] (EAPL) to [redacted] (NOPTA): Hi [redacted] Thank you for your email. Sorry I missed your call. I will be out of the office on Thursday as well. Your comments below make sense. I don't think they will be difficult to change/add. We'll make a first pass at changing the drawings and send it to you before the May 18 meeting, so we can discuss further if required at the meeting itself.	☐	Response: Great, thanks [redacted]!

1841	18-May-18	Email from [redacted] (EAPL) to [redacted] (NOPTA): Dear [redacted], Please find the updated drawings for VIC PL1, PL9, PL 10, PL11 and PL 20 with the features you'd requested for. If required, we can discuss later at our meeting at noon Melbourne time this afternoon. Talk to you then.	☐	No objections, claims or issues raised
1851	04-Jun-18	Email sent from [redacted] (EAPL) to [redacted] (NOPTA): Esso request an extension to the 4th June 2018 timeline for our response to your Request for Further Information: Application for Variation of Pipeline Licence VIC/PL15 (Cobia) NEATS Ref: 5B2191 to the 11th June 2018. Please note that this potential extension was raised with [redacted] last week and as agreed he has also been notified directly via email.	☐	No objections, claims or issues raised
1850	05-Jun-18	Email from [redacted] (NOPTA) to [redacted] (EAPL): Hi [redacted] Thank you, an extension to 11 June 2018 is fine.	☐	No objections, claims or issues raised
1852	07-Jun-18	Email from [redacted] (EAPL) to [redacted] (NOPTA): Hi [redacted], Please find attached our response to your request for further information, this consists of; A letter answering your specific questions. The marked up instrument. The revised drawing showing the pipeline route (both new DN150 flexible and the redundant DN300 steel pipeline) although at this scale some of the details requested are hard to see. A zip file containing the GIS data for the pipeline.	☐	No objections, claims or issues raised
1844	13-Jun-18	Email from [redacted] (NOPTA) to [redacted] (EAPL): Brilliant – thank you so much [redacted] for that quick turn-around!	☐	No objections, claims or issues raised
1843	13-Jun-18	Email from [redacted] (EAPL) to [redacted] (NOPTA): Hi [redacted], I believe that this is the one and we have updated it to correctly label the platforms.	☐	No objections, claims or issues raised
1842	13-Jun-18	Email from [redacted] (NOPTA) to [redacted] (EAPL): Good morning all, [redacted], sorry for the lateness of this but I think I have picked up one minor issue with the route map for VIC/PL20 Bream to West Kingfish. It looks like the platforms on the map have been labelled incorrectly – i.e. the platform to the far left should be West Kingfish and the one in the centre Kingfish A. If you agree, could you please send me revised map as soon as possible – ideally we are endeavouring to finalise our assessments of all of the applications and send them to the[redacted] this week. ([redacted], I understand that both [redacted] and [redacted] are out of the office currently, so if you are able to consider the above that would be greatly appreciated).	☐	No objections, claims or issues raised
1845	14-Jun-18	Email from [redacted] (EAPL) to [redacted] (NOPTA): Glad to help. With the Victorian election being at the end of November, do you see any potential impact on the VIC/PL15 pipeline licence variation or will we have it all wrapped up before then.	☐	No objections, claims or issues raised
1846	14-Jun-18	Email from [redacted] (NOPTA) to [redacted] (EAPL): Hi [redacted], My hope would be that we will have it well and truly wrapped up by then!	☐	No objections, claims or issues raised

2119	11-Sep-18	Phone call between [redacted] (EAPL) and [redacted] (NOPTA): Spoke with [redacted] at NOPTA yesterday 11 September 2018. They have recently been in touch with the Joint Authority who are fully aware of our project timeframes and that we need to have a good understanding of the licence status by early Oct. [redacted] understood that the Commonwealth minister had made a decision (didn't know what it was) and it was now with the Vic State department / minister. Once the Vic State minister has made a decision it will need to go back to the commonwealth minister for ratification. Time frame for all this is unclear. I said that if both departments have made the same decision and its just a paper exercise then we may be able to mobilise the vessel on the understanding it will be issued prior to the campaign. [redacted] believed the decision was just a formality and that the licence would be issued as requested by EAPL in due course. We also discussed modifications to the pipeline at Halibut and Cobia (removal of pig receiver / launcher for example) prior to the licence being varied. [redacted] suggested sending NOPTA an email outlining the work and asking if it could be done under an "Application to Alter pipeline". EAPL have recently applied for one of these for work on the HLA 100 isolation valve arrangements.	☐	No objections, claims or issues raised

Organisation: Parks Victoria **ID** 27

Contact Name: [redacted]

Position:

2118	23-Aug-18	DEDJTR Discussion – focusing on Offshore Operations 23rd of August 2018. Attendees [redacted] – DEDJTR [redacted] – DEDJTR [redacted] – DEDJTR [redacted] – DEDJTR [redacted] – Parks Victoria [redacted] – ExxonMobil [redacted] – ExxonMobil [redacted] – ExxonMobil Apologies [redacted] – DELWP [redacted] - EPA Stakeholder newsletter [redacted] presented a copy of the Offshore Stakeholder Newsletter and an update on upcoming offshore activities. The Baldfish drilling program is kicking off next week in the VIC P70 license, 70 k offshore. The regulatory plans are approved by NOPSEMA. The activity is on the edge of the shipping lane and AMSA has been engaged. There will be standby vessel on location during the program. The rig will then proceed to conduct P&A program at Blackback. Marine pollution response plans mirror Baldfish plans. We have one OPEP for base business and now specific EP and OPEP for projects including the Cobia pipeline replacement. In the next couple of years we have a number of plans we will be working on and will develop a new OPEP/OSMP to cover all activities. The OPEP/OSMP planned to be completed by year end will cover all our future operations over the next 5 years. Are there any pollution risks for P&A program? – Vessel collision, blow out scenario were modeled. The release were considerably smaller due to the end of life of the field. There was no predicted shoreline impact or state waters. Supply vessel is operating from Corner Inlet, and has two anchor handlers operating out of Port of Melbourne on location. Will the subsea equipment (Blackback) be removed – Not as this stage this will be evaluated to determine future actions. The subsea trees and well heads will be removed. Stakeholder engagement with fisheries has been completed. Cobia pipeline replacement. We suspended operations a few years ago and we are planning on repairing the Cobia pipeline. Timing is December 2018. A vessel is coming in from North Sea and will bring a flexible pipeline. Short operation (2 weeks) and will be at Cobia and Halibut locations. The operations include cutting and fitting adapter to the old pipeline. 5 ½ kilometers of pipeline is required to be repaired. The pipeline is only between platforms. The pipeline currently is filled with inhibited water. The vessel will come into Hastings and has met all regulatory requirements. Management arrangements regarding biofouling and ballast were discussed.	☐	No objections, claims or issues raised

Next year platform based Plug and Abandonment of well will commence.
Kipper drilling programs is planned for later next year. The revised OPEP will also cover these activities.
Reviews of response capabilities will be reviewed at this stage as the locations are closer to shore.
Increased supply vessel operations may occur in the future due to these projects.

PFW study has been conducted to understand the longer term impacts into the environment.

Preparing the revised EP and associated OPEP/OSMP and is required to be submitted in the second half of 2019. Likely to engage AMOSC or OSRL to write the OPEP. Engagement of stakeholder will be included in the process.

[redacted] Energy are looking to align on the work we are doing in relation to Tactical Response Plans.
Do they form part of the OPEP? They will be an appendix. The draft TRP were provided to the state for their use. DEDJTR are very interested.

Development of one regional OSMP. This has been looked at in WA. The participation has dropped away, however we will have further discussion with [redacted] to look at opportunities to collaborate. More sharing is occurring between title holders.

Esso meet with [redacted] (DELWP) and [redacted] (DEDJTR) earlier this year to discuss oiled wildlife response (now referred to as wildlife impacted by marine pollution) arrangements. Esso has a commitment to test the arrangements in our plan this year where NOPSEMA have indicated they would like Esso to explore access to resources detailed. DEDJTR are interested to be involved in some way. We would like to discuss conducting a test to be mutual benefit. OWR arrangements are also being tested nationally through AMOSC, including access to trained industry personnel and vets. Something to consider in testing arrangements is what would the incident management look like?

Maritime Emergency sub plans have been finalized and can be found on the Vic Emergency Response Website. The Victorian wildlife plan is still in draft. [redacted] is the best person to talk to when he returns from leave.
[redacted] provided an update on the new structure of the State Maritime Emergency Working Group and the proposed sub groups.
Interest in conducting an exercise at Gellibrand from Mobil Altona Refinery SHE Manger. Still need to discuss with the port authority.
DEDJTR discussed the recent sheen offshore near golden beach. There was confusion with regards to the regulatory notification as DEDJTR had heard from NOPSEMA. DEDJTR queried if there was any follow up from Esso with regards to the sheen. Esso not aware of any follow up

Organisation: South East Trawl Fishing Industry Association **ID** 37

Contact Name: [redacted], [redacted]

Position: [redacted]

215	01-Nov-17	[redacted] (EAPL) phoned [redacted] [redacted] at 11 am, [redacted] busy, [redacted] text message asking if he could call later and was after an opportunity to discuss the projects Esso are planning and would like to discuss how best to manage any potential interactions.	☐	No objections, claims or issues raised	
216	03-Nov-17	Phone call between [redacted] (EAPL) and [redacted] [redacted] to discuss the various projects that Esso have planned in the next 12 months. Fact Sheet also emailed to [redacted] [redacted]. Main issues raised: - amount of consultation - proximity to FIS sites. [redacted] (EAPL) asked for coordinates of FIS sites to confirm separation distance but from the data we have looks about 20nM @ Baldfish which shouldn't have any impact.	☑	ISSUE #1: Level of consultation MERIT #1: Esso have to consult but will try to coordinate projects to limit the number of requests. [redacted] [redacted] to provide coordinate of the FIS sites. ISSUE #2: Proximity to FIS sites MERIT #2: Proximity to FIS location tobe determined however from the data we have looks about 20nM @ Baldfish which shouldn't have any impact.	15-Feb-18
1164	14-Dec-17	[redacted] (EAPL) sent email looking to confirm location of nearest FIS locations to next years drilling campaign.	☑	Follow up with [redacted] [redacted] in 2018 to confirm FIS location	15-Feb-18
1457	12-Jan-18	Email received from [redacted] [redacted]: Please find FIS locations attached. SETFIA operates and maintains several SMS lists for commercial fisherman across three regions. You are interested in the eastern region. Here are a couple of examples (one from today) of the sort of SMS we send. The aim is to minimise the affects of oil/gas works on the fishing industry. SETFIA charges per SMS, the cost allows us to maintain software that sends group SMSs and to maintain the list, the maintenance is a lot of work. There are about 90 contacts on the eastern list. The list covers all sectors, State and C'wealth not just trawl. I suggest we need to meet and would like to do this in Lakes Entrance. This campaign will take some planning to minimise effects on the fishing industry.	☑	ISSUE 1: Proximity to FIS locations. MERIT 1: Not relevant to G&G campaign due to survey timing prior to FIS and distance from FIS locations. Not relevant for CBA due to timing. Needs to be reviewed further for Baldfish. ISSUE 2: Consultation with fishers via SMS. MERIT 2: Yes - EAPL agree consultation important.	15-Feb-18
1461	23-Jan-18	Email sent to [redacted] [redacted] and LEFCOL from [redacted]: Here is our review of the distance to the nearest FIS Locations from the Baldfish drilling and Cobia pipeline repair projects. The Cobia repair (between Halibut, HLA and Cobia CBA) is very unlikely to take place earlier than Dec this year so there will be no impact. (SEE ATTACHMENT) The Baldfish drilling campaign is still scheduled for early Q3. The Baldfish well is between 12 and 16 NM from the FIS location and Hairtail is between 11 and 15 NM. Both the wells are the other side of a shipping lane, so any noise impacts are likely to be low in comparison to the impact from passing vessels. Many thanks for the information on the SMS service, we will be looking to use it to advise fishermen of our activities and to minimise any impact. In the mean time I will keep you updated on the campaign and will look to arrange a meeting with you and [redacted] in the next couple of months.	☐	No objections, claims or issues raised	

1476	09-Feb-18	Email sent from [redacted] (EAPL) to LEFCOL & SETFIA: Hi [redacted], [redacted], I'm in Lakes Entrance next Thursday 15th Feb, would be happy to pop in and give you an update on our planned activities on either the Thursday afternoon or Friday morning. Let me know if this is of interest. Response from [redacted] (SETFIA): Thursday works for me Email from [redacted] (EAPL) to [redacted] (SETFIA) and (LEFCOL): What time Thursday afternoon suits you - would 4pm at the LEFCOL offices work? If there is anything specific you want to know about please let me know or I can give you a general update and we can discuss things as they come up. Response from [redacted] (SETFIA):4pm Thursday good. Pls send a calander invite.	☐	No objections, claims or issues raised

1573	15-Feb-18	[redacted] (EAPL) met with [redacted] (LEFCOL) and [redacted] (SETFIA) at LEFCOLs offices in Lakes Entrance on Thursday 15th Feb. Discussed West Barracouta G&G, Baldfish Drilling, Cobia pipeline repair and Kipper/Pilchard campaigns including the type of activity involved and the timing. [redacted] and [redacted] happy to hear that wells at WBT would probably be in the same PSZ. Asked about fishing activity in the area and [redacted] indicated that if we wanted he could investigate the type, nature and scale of fishing in the area subject to a commercial contract. [redacted] also indicated that PSZ may not be as rigorously complied with as he and oil and gas operators have assumed to date. Discussed if there was an opportunity for industry to develop a video explaining what PSZs are for and for this to be provided to fishermen – agreed to discuss this internally within Esso but noted that it should probably be something that APPEA should look into. Action raise issue of an Industry video with APPEA and internally within Esso. [redacted] raised the value of sending an SMS to all fishermen of campaigns and vessel activity in Bass Strait. [redacted] have been providing regular updates on the [redacted] project and their other assets, it seems to have been well received and as fishermen do not rigorously read navigation warnings and alerts from AMSA it provides an alternate means of raising awareness of the projects and what is happening where. [redacted] was happy to send an SMS for the G&G campaign on approval from Esso, subsequent SMSs will be entail a small cost. Action to be discussed within Esso, with [redacted] to be given go ahead to send G&G SMS text and an ongoing SMS protocol developed, i.e. SMSs to be sent regularly, month before, day before and on completion of activity. Talked about Baldfish and proximity to the FIS locations. [redacted] agreed that the distance from Baldfish Hairtail probably wouldn't have a significant impact on the FIS location. He indicated that he was a bit annoyed that while Oil and Gas operators had been provided with the FIS locations and dates that they hadn't planned their activities better to avoid any overlap. We talked about schedules and use of rigs of opportunity to minimise mobilisation and demobilisation costs and how these can be significant impediments to scheduling these campaigns around third party requests. [redacted] and [redacted] acknowledged how this would be an issue. The FIS work may not occur this year as there has been little statistically significant results obtained to date with this work, the work is arranged by AFMA? And is a significant cost that is sourced from the fishing industry that may be better spent / saved. Potential Blackback decommissioning following the Baldfish drilling campaign was also discussed. The temporary fairways recently announced by AMSA to protect the rig will also provide protection at Blackback. A temporary PSZ will be gazetted at Blackback for this work. Some discussion on whether the fishermen fish in the shipping lanes, thought was that they probably do as its near the drop off. After all the projects add The level of consultation was raised again and [redacted] indicated that he was getting numerous emails and phone calls and that it was taking up a significant amount of his time and that he couldn't and wouldn't always respond. We discussed it was a regulatory requirement and a NOPSEMA expectation that consultation was documented and could be demonstrated hence why [redacted] was	☐	Refer to LEFCOL consultation records regarding ISSUES / MERITS

		being chased for responses. Acknowledged that in some cases it may be frustrating but without being able to provide a response from stakeholders the oil and gas industry had potential difficulty in gaining EP acceptance. A single point of contact within the oil and gas industry would be good but the mechanisms and arrangements for this to be conducted are not currently available. Discussed Cobia pipeline repair, still scheduled for December this year with a DSV from Europe. Another candidate for SMS messages. Discussed Kipper infield drilling and adjacent (Pilchard) development that is being examined. Kipper infield drilling to be contained within existing PSZ, adjacent development may require an additional PSZ will discuss these projects further as they progress. Another candidate for SMS messages and review of fishing intensity. Given the quantity of work and activities going on [redacted] suggested a monthly phone call to advise progress, changes and the dates of key activities taking place. An invite was sent out for this to occur the last Friday of every month starting the 30th March. There are a number of issues raised so we'll need to add these and document our response ISSUE: Development of Video to raise awareness of PSZ and subsea assets – good idea has merits will need to be raised internally within Esso and possibly APPEA		
1580	23-Mar-18	First monthly phone call between [redacted] (EAPL) and [redacted] (SETFIA) following meeting in Lakes Entrance Provided an update of what EAPL are doing in Bass Strait – ongoing production and maintenance, supply vessels out of Barry's Beach and small catermeran supporting ROV inspection out of Lakes Entrance. No significant work scheduled in the next month or so. Drilling campaign at Baldfish / Hairtail still scheduled for July. [redacted] are currently installing anchors for it at [redacted] and following that work Esso will use it at Baldfish, actual dates will firm up over the next few months. Based on above [redacted] saw no need to update the fishing community and we agreed to have another phone call update towards the end of April.	☐	No objections, claims or issues raised

1601	27-Apr-18	Spoke with [redacted] today 27th April. Discussed WBT geotechnical work and that the Dryden may be doing some work at WBT in mid May. Told him we were about to send an email regarding the work but wanted to get the date better confirmed. Indicated that the work would be completed in a week or two and that the Dryden would be stationary with reduced mobility for some time. Discussed and agreed that an SMS message nearer the time would be good. Also discussed rig mobilization to Baldfish and I indicated that nothing was likely before mid June and depending on [redacted] activities it may be delayed till August. [redacted] said that [redacted] were very busy and he was talking to them every few days. Agreed to keep in touch and notify [redacted] when the BTW dates are better defined and when Baldfish dates are clearer. Subsequently got the following SMS from SETFIA on [redacted] (see attachment)	☑	ISSUE: provide [redacted] with WBT geotechnical details and dates such that he can send an SMS message to notify fishermen in Bass Strait MERIT: Esso agree and details will be provided for SMS alert once campaign timing is known.	16-May-18
2000	11-Jul-18	Email received from [redacted] [redacted] (SETFIA): Dear Oil, Gas, Carbon Sequestration and Seismic Survey Companies, The South East Trawl Fishing Industry Association (SETFIA) represents operators, quota holders and wholesalers in the South East Trawl Fishery. This fishery is the main supplier of locally wild-caught fish in Australia and the main supplier of local fish to Melbourne and Sydney. The fishery runs from Barrenjoey Head north of Sydney through southern NSW, Victoria and Tasmania west to Cape Jervis in South Australia. South-East Australia is also an area of strong interest for your companies. SETFIA prides itself on the positive working relationship it has with your industry, works hard to be a good neighbour and in line with your Act tries to help your industry reduce its impacts on the fishing industry where possible. Over the last few years SETFIA has run a 'Fishery Independent Survey' (FIS) in winter every second year. This survey is a key part of setting sustainable quotas. This survey was again planned for July and August this year (2018). SETFIA sent this distribution list several notices of the FIS over the past few years requesting that seismic surveys in particular do not occur in the fishery prior to the FIS because seismic works would likely affect the survey's results. The purpose of this e-mail is to advise your industry that the 2018 FIS is on hold pending a review of its results over the last 10+ years. It may or may not occur again in July and August 2020. SETFIA will advise you as soon as a decision is made. Somewhat disappointingly, we note that several seismic surveys were scheduled in the fishery in the lead up to July 2018 in spite of the advice about FIS timing from SETFIA. However, on a positive note we are currently working well with the operators of the Duntroon, Otway Deep, Dorrigo and Marin seismic surveys to reduce impacts on the fishing industry. Best Regards, [redacted] [redacted]	☐	No objections, claims or issues raised	

2001	20-Jul-18	Phone call between [redacted] (SETFIA) and [redacted] (EAPL) to discuss EAPL activities. First activity will be Baldfish which will take place following [redacted] campaign at Basker Manta. Early date is probably in August and EAPL will know this better once [redacted] have finished at [redacted]. The duration of the [redacted] Basker Manta activities are also unknown but EAPL will try and ask for an SMS message to fishermen about 2 weeks before moving to Baldfish. Baldfish EP was accepted a couple of weeks ago by NOPSEMA. Baldfish campaign will last about 60 days. Second activity will be Blackback P&A campaign this will follow Baldfish and EAPL will look to issue an SMS for this too. Blackback is relatively close to Baldfish and on the edge of the continental shelf. A PSZ will be gazetted and as per Baldfish the anchor chains will need to be avoided by fishermen. Blackback may last 2-3 months. Cobia pipeline repair is still scheduled for December and will be the subject of another SMS message in November, a temporary PSZ will be gazette to protect the divers, ROV and vessel when repairing the pipeline as she will have limited maneuverability. Other projects at West Barracouta and Kipper are being planned with some minor work potentially in 2019 and drilling in 2020. SETFIA had no major concerns with these projects and had completed the paperwork to be added to the EAPL system to enable payment for SMS messages to be processed. There are a number of seismic campaigns taking place in and around the south east area and these have potentially a more significant impact on where fishing can take place. SETFIA have been commissioned to undertake fishing assessments within the seismic areas and have issued some of the seismic operators with detailed reports listing the key fishermen and their contact details who work the areas. A lack of this information has led to Eps being rejected. [redacted] has also been sent recent emails on Prelude and Crux and wanted to know what these were for. We discussed that these were from Shell and were for projects on the NW shelf and would have no impact on SETFIA activities.	☐	No objections, claims or issues raised
2111	17-Aug-18	SMS alert for rig relocation	☐	No objections, claims or issues raised

2110	17-Aug-18	Phone call between [redacted] (EAPL) and [redacted] (SETFIA): Following [redacted] email dated 17 August [redacted] rang him on the 17th August to discuss EAPL activities and SMS arrangements. [redacted] had received [redacted] email re the SMS on the 7th August but has had computer and email / SMS issues. The SMS will be slightly reworded and will be sent to advise the fishing fleet of the rigs move to Baldfish and Hairtail. We discussed the drilling campaign at a high level and that it would likely move to Blackback to work on the wells following Baldfish Hairtail in around 60 days. [redacted] and [redacted] agreed to discuss nearer that move and look to send another SMS to the Eastern fleet. [redacted] indicated that SETFIA are now on the EAPL systems and payment for SMSs should be possible. [redacted] has been working on the proposed CGG seismic campaign that is being planned – this will cover the entire south east fishing area that provides fish to Melbourne and Sydney 18000 km2 and spread over 5 months. This will have a significant impact on the fishermen as fish are known to move away from seismic campaigns, there is a 5% mortality of scallops and it impacts rock lobsters and zooplankton. [redacted] didn't know what power seismic source was being proposed. Discussed Cobia PRP and that a vessel will be in the field for 10 days. [redacted] asked what information he would like and described some of the risks in the EP – noise, sewage, impact to the sea bed, minor release of chemicals, the temporary PSZ. He said that he had heard all he needed and that he had no concerns with the CBA project. [redacted] said that our level of consultation was being questioned by NOPSEMA, particularly the level of detail about the impacts and if he had any questions or would like to know anything else to let EAPL know. [redacted] again said that he had enough information on Cobia and that it was insignificant in comparison to the proposed seismic campaign. [redacted] indicated that he was writing a letter to NOPSEMA regarding the seismic campaign and said that the way EAPL dealt with and consulted with the fishing industry was a good example and one that the operators of the CGG seismic campaign should follow.	☐	No objections, claims or issues raised

Organisation: Australian Marine Oil Spill Centre **ID** 1

Contact Name: [redacted], [redacted]

Position: Deputy General Manager

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
141	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
142	10-Oct-17	Email received from [redacted] enquiring about further details of field / asset sales. [redacted] (EAPL)s and [redacted] have touched based re Esso activities which may interface with AMOS and & look forward to consultation on drilling activity EP / OPEP & opportunity to input.	☑	ISSUE: Requested Esso contact re maintenance of dispersant at BBMT. MERIT: Yes and contact provided.	10-Oct-17
1151	10-Oct-17	[redacted] (EAPL) emailed [redacted] advising no news on field / asset sales. [redacted] / [redacted] (EAPL)s best contacts re dispersant stocks.	☐	No objections, claims or issues raised	
143	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
144	09-Nov-17	[redacted] (EAPL) called land line and mobile and left message re community session	☐	No objections, claims or issues raised	
1181	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2010	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on [redacted] Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2099	06-Aug-18	Email received from [redacted] (AMOSC): I am currently on leave and will be irregularly checking my emails during his time. If your inquiry is time critical / spill response related please call AMOSC's 24/7 duty number on [redacted].	☐	No objections, claims or issues raised	

Organisation: Australian Maritime Safety Authority **ID** 2

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
106	09-Oct-17	Sent Esso Stakeholder Update email to [redacted] (copy in EP Consultation mailbox)	☐	No new objections, claims or issues raised	
1154	12-Oct-17	Email sent to [redacted] from [redacted] (EAPL) regarding stakeholder consultation being underway and looking for formal input.	☐	No objections, claims or issues raised	
1157	15-Nov-17	[redacted] confirmed AMSA received revised coordinates.	☐	No objections, claims or issues raised and Esso agree.	
1180	21-Dec-17	Emailed updated Fact Sheet Response received from [redacted] requesting the ESRI ArcGIS shapefiles for the seabed survey and operational areas.	☑	ISSUE: [redacted] requested the ESRI ArcGIS shapefiles for the seabed survey and operational areas. MERIT: [redacted] (EAPL) emailed shape files to M [redacted] (attached)	21-Dec-17
2011	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Asia Pacific Applied Science Associates (Oil Spill Modelling) **ID** 3

Contact Name: [redacted]

Position: Scientist

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
145	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
1182	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2012	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Australian Fisheries Management Authority **ID** 4

Contact Name: [redacted]

Position: Environment Manager

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
135	13-Jul-17	Sent Esso Stakeholder Update email to [redacted] and petroleum@afma.gov.au (copy in EP Consultation mailbox)	☐	No objections, claims or issues raised	
136	09-Oct-17	Sent Esso Stakeholder Update email to [redacted] and petroleum@afma.gov.au (copy in EP Consultation mailbox)	☐	No objections, claims or issues raised	
1158	12-Oct-17	[redacted] (EAPL) sent email requesting fishing data for Block VIC/P70 7 request for phone conversation.	☐	No objections, claims or issues raised	
1159	12-Oct-17	Response received from [redacted] advising data request is being processed.	☐	No objections, claims or issues raised	
137	13-Oct-17	Email received to update contact to [redacted] (from [redacted] Day)	☑	MERIT: Updated contact details to [redacted] MERIT: [redacted] Day also requested that [redacted] & [redacted] are included on consultation list, which they are.	14-Oct-17
138	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
140	09-Nov-17	[redacted] (EAPL) spoke with [redacted] and she requested we resend the invitation. Invite resent.	☑	ISSUE: [redacted] (EAPL): Invitation resent	09-Nov-17
1178	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
1995	16-Jul-18	[redacted] (EAPL) called AFMA and was told that [redacted] retired 3 weeks ago. AFMA will contact [redacted] with a new contact name and details.	☑	ISSUE: New AFMA contact name and details required MERIT: [redacted] (EAPL) received a phonecall from AFMA with updated name and details	16-Jul-18
2013	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: BHP Billiton Petroleum **ID** 7

Contact Name: [redacted], [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
146	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
147	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
148	09-Nov-17	ACCEPTED invitation	☐	No objections, claims or issues raised	
312	17-Nov-17	Attended the Lakes Entrance Community session	☐	No objections, claims or issues raised	
1186	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2014	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Country Fire Authority (Region 10) **ID** 8

Contact Name: [redacted], [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
149	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
150	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
151	09-Nov-17	[redacted] (EAPL) called land line and mobile and left message regarding community session. Awaiting response.	☐	No objections, claims or issues raised	
1167	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2015	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Commonwealth Department of Environment **ID** 9

Contact Name: [redacted], [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
152	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
153	16-Oct-17	Email received to update contact to [redacted] (from [redacted])	☑	[redacted] (EAPL): Contact name updated	16-Oct-17
154	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
155	09-Nov-17	[redacted] (EAPL) spoke with [redacted] who DECLINED the invitation	☐	No objections, claims or issues raised	
1193	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2016	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: East Gippsland Catchment Management Authority **ID** 10

Contact Name: [redacted], [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
156	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
157	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
158	09-Nov-17	[redacted] (EAPL) called mobile left message re community session	☐	No objections, claims or issues raised	
1168	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2017	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: East Gipplsand Shire Council **ID** 11

Contact Name: [redacted], [redacted]

Position: S[redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
159	19-Oct-17	Sent Stakeholder email sent Email received: This automated interim response confirms that your enquiry has been received	☐	No objections, claims or issues raised	
160	06-Nov-17	[redacted] (EAPL) advised by [redacted] [redacted] (EAPL) that M [redacted] received invitation to Nov 17th Community Session in Lakes Entrance.	☐	No objections, claims or issues raised	
1209	21-Dec-17	Emailed updated Fact Sheet Response received: This automated interim response confirms that your enquiry has been received	☐	No objections, claims or issues raised	
2018	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2094	06-Aug-18	Email received from EGSC: Thank you for taking the time to contact East Gippsland Shire Council. This automated interim response confirms that your enquiry has been received by us and that we will be getting back to you as quickly as possible within the guidelines contained in our response policy <http://www.eastgippsland.vic.gov.au/files/assets/public/documents/corporate_directorate/policies/customer_response_policy.pdf> . Spam and junk mail will not be responded to.	☐	No objections, claims or issues raised	

Organisation: Environment Protection Authority Victoria **ID** 13

Contact Name: [redacted], [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
161	09-Oct-17	Stakeholder update email	☐	No objections, claims or issues raised	
162	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
163	08-Nov-17	Invitation DECLINED	☐	No objections, claims or issues raised	
1211	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2019	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Geelong Ports **ID** 14

Contact Name: [redacted]

Position: [redacted]r

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1216	16-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2020	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Gippsland Ports **ID** 15

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
164	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
165	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
166	08-Nov-17	Invitation ACCEPTED by [redacted] Invitation DECLINED by [redacted]y	☐	No objections, claims or issues raised	
167	16-Nov-17	Attendee changed from [redacted] to [redacted] [redacted]	☐	No objections, claims or issues raised	
313	17-Nov-17	[redacted] Holding attended the Lakes Entrance Community Session	☐	No objections, claims or issues raised	
1217	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2021	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Lakes Entrance Fishermans' Co-op **ID** 17

Contact Name: [redacted]

Position: [redacted]r

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
168	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
170	09-Nov-17	Email received [redacted] and [redacted]ACCEPTED invitation	☐	No objections, claims or issues raised	
317	17-Nov-17	[redacted] attended the Lakes Entrance community session	☐	No objections, claims or issues raised	
1221	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
1478	14-Feb-18	[redacted] (LEFCOL) replied to [redacted] (EAPL): See you here then lads	☐	No objections, claims or issues raised	
1570	15-Feb-18	[redacted] (EAPL) met with [redacted] (LEFCOL) and [redacted] (SETFIA) at LEFCOLs offices in Lakes Entrance on Thursday 15th Feb.	☑	ISSUE: Monthly phone call for update on Esso activies MERIT: Yes has merit and meeting agreed – closed	15-Feb-18
1571	15-Feb-18	[redacted] (EAPL) met with [redacted] (LEFCOL) and [redacted] (SETFIA) at LEFCOLs offices in Lakes Entrance on Thursday 15th Feb.	☑	ISSUE: Amount and degree of consuation - too much MERIT: Yes and acknowledged however the regulatory regime requires it and Esso need to be able to demonstrate that they have consulted. Esso consultation will continue to be scheduled and managed to try and co-ordinate and minimise the amount. No further action required - closed.	15-Feb-18
2022	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Lakes Entrance Scallop Fishing Industry Association **ID** 18

Contact Name: [redacted], [redacted]

Position: President

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
171	19-Oct-17	Sent Stakeholder email sent Bounced Updated name and email address to [redacted] at LEFCOL from [redacted] and resent email	☑	MERIT: Updated contact & resent email.	19-Oct-17
172	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
173	09-Nov-17	[redacted] (EAPL) called land line and left message re community session	☐	No objections, claims or issues raised	
1222	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2023	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Wellington Shire **ID** 20

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
174	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
175	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
176	09-Nov-17	[redacted] (EAPL) called land line and mobile left message re invite [redacted] left message and DECLINED invitation	☐	No objections, claims or issues raised	
1274	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2024	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Security Services **ID** 23

Contact Name: [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
177	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
1229	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2025	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Seven Group Holdings (formerly Nexus) **ID** 24

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
495	09-Oct-17	Sent Esso Stakeholder Update email to [redacted] (EAPL) (copy in EP Consultation mailbox)	☐	No objections, claims or issues raised	
179	20-Oct-17	Thanks for the consultation, we have no concerns regarding your proposed activities but would like to be kept updated as your projects develop. SGHE have no immediate campaigns or projects planned for Bass Strait but this may change in 2018, if and when this occurs we will keep you informed to manage potential interactions.	☐	No objections, claims or issues raised	
180	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
1249	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2026	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2104	14-Aug-18	Email received from [redacted] (SGH): Could you advise / confirm the best emergency contacts for SGHE to use / include in our relevant emergency plans. We currently have The Esso switchboard [redacted] however a recent test indicated that this number has been disconnected LFD Production Control Room [redacted] Are these the best numbers to use in the event we need to contact Esso regarding any offshore emergencies?	☑	ISSUE: Provide [redacted] (SGH) with updated contact details. MERIT: New details provided (see ID_2105)	27-Aug-18
2105	27-Aug-18	Email sent from [redacted] (EAPL) to [redacted] (SGH): Hi [redacted], We've recently moved to 664 Collins Street, Docklands, 3008 and our new switchboard number is (03) [redacted]. Please update your emergency contact list to reflect this change.	☐		

Organisation: Oil Response Company Australia **ID** 25

Contact Name: [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
181	19-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
182	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
183	09-Nov-17	ACCEPTED invitation	☐	No objections, claims or issues raised	
318	17-Nov-17	Did NOT attend the Lakes Entrance community session	☐	No objections, claims or issues raised	
1233	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2027	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Lattice Energy (formerly Origin Energy) **ID** 26

Contact Name: [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
184	09-Oct-17	Stakeholder update email sent Bounced	☑	Identify new contact	18-Oct-17
185	18-Oct-17	Contact name updated to [redacted] from [redacted]. SL to resend email.	☑	Resend email	25-Oct-17
186	25-Oct-17	Contact name updated to [redacted] from [redacted]. Update resent.	☐	No objections, claims or issues raised	
1220	21-Dec-17	Emailed updated Fact Sheet	☑	No objections, claims or issues raised	10-Jan-18
1295	10-Jan-18	Fact sheet resent to correct email address	☐	No objections, claims or issues raised	
2028	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Parks Victoria **ID** 27

Contact Name: [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
187	09-Oct-17	Stakeholder update email sent Contact details updated per request	☑	Update contact details	09-Oct-17
188	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
189	09-Nov-17	[redacted] (EAPL) called land line and left message for [redacted] re invite	☐	No objections, claims or issues raised	
1172	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2029	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Port of Hastings **ID** 28

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
190	10-Oct-17	Stakeholder update email sent Updated contact details received - stakeholder update email resent	☑	Update contact details	20-Oct-17
191	20-Oct-17	Email received requesting additional recipient [redacted] - stakeholder update email resent	☐	No objections, claims or issues raised	
1238	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2030	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Phillip Island Nature Park **ID** 29

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
192	09-Oct-17	Stakeholder update email sent Contact details updated per request	☑	Update contact details	09-Oct-17
193	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
194	09-Nov-17	ACCEPTED invitation	☐	No objections, claims or issues raised	
319	17-Nov-17	Did NOT attend the Lakes Entrance community session	☐	No objections, claims or issues raised	
1237	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2031	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Port Franklin Fisherman's Association **ID** 30

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
195	09-Oct-17	Sent Esso Stakeholder Update email to [redacted](copy in EP Consultation mailbox)	☐	No objections, claims or issues raised	
196	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
197	08-Nov-17	Invitation DECLINED by N [redacted]	☐	No objections, claims or issues raised	
1236	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2032	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Victorian Ports Cooperation **ID** 32

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
198	10-Oct-17	Stakeholder update email sent Bounced	☑	Identify new contact and update details	18-Oct-17
199	18-Oct-17	Victorian Ports Cooperation now in control instead of Port of Melbourne Corporation Updated contact details received - resent stakeholder email	☐	No objections, claims or issues raised	
200	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
201	09-Nov-17	[redacted] (EAPL) called land line and mobile - left message with answering service re invitation	☐	No objections, claims or issues raised	
1264	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2033	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2098	06-Aug-18	Email received from [redacted] (VPC): Thank you for your email. Please note that I am no longer with the organisation.For all Victorian Ports Corporation issues, please contact [redacted]).	☑	ISSUE: [redacted] is no longer the contact for VPC. MERIT: Contact details updated from [redacted] to [redacted]	06-Aug-18

Organisation: Seafood Industry Victoria **ID** 33

Contact Name: [redacted], [redacted]

Position: Executive Director

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
202	09-Oct-17	Stakeholder update email sent	☑	No objections, claims or issues raised	10-Oct-17
203	10-Oct-17	[redacted] responded inquiring whether perhaps there was availability to sit down and discuss the information presented in the email, along with consultation options and where to from here. [redacted] (EAPL) responded: Thanks for your email. Unfortunately I'm not going to be available for a face to face meeting until the week of 23 October. However, my colleagues may be available. Can you please clarify whether you're more interested in the update on current operations or future projects and related consultation? [redacted] responded: I am interested in discussing all of the items you mentioned. Happy to wait until your available. Let's discuss a suitable date and time closer to when you're available.	☑	ISSUE: consultation arrangements between Esso & SIV to be discussed. MERIT: Yes consultation with SIV is important and Esso to arrange meeting with [redacted]	13-Nov-17
204	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
205	08-Nov-17	Invitation ACCEPTED by [redacted]	☐	No objections, claims or issues raised	
1046	16-Nov-17	[redacted] (EAPL) called [redacted] the night before the consultation session and talked to him at the session. He was keen for us to do a fish abundance study in Bass Strait (location, species etc.) but I explained that we get our information from ABARES and that it is sufficient for our purposes at present. He is based in Melbourne and would like to catch up with us again, but we haven't arranged this yet.	☑	ISSUE #1: [redacted] was keen for EAPL to do a fish abundance study in Bass Strait (location, species etc.) MERIT: [redacted] explained that EAPL get our information from ABARES and that it is sufficient for our purposes at present. ISSUE #2: [redacted] is based in Melbourne and would like to catch up with EAPL again MERIT #2: Yes - EAPL agree and will arrange meeting with [redacted]	17-Nov-17

Organisation: Seafood Industry Victoria **ID** 33

Contact Name: [redacted], [redacted]

Position: Executive Director

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
315	17-Nov-17	[redacted] [redacted] attended the Lakes Entrance community session. Discussed with [redacted] seismic campaigns and they raised the issue that seismic campaigns can result in environmental impacts. We also discussed the nature of consultation and the amount of consultation that LEFCOL and SIV are asked to participate in, they said that there is a lot of consultation (too much) and that any means that the oil and gas industry could help reduce or make it more efficient would be gratefully received. Explained EAPL had combined the three projects in a single flyer and taken the opportunity of the operational stakeholder consultation to discuss the various projects to try and minimise the number of different requests for consultation. Also discussed the SIV newsletter which is now quarterly as a means of further disseminating the information to a greater number of fishermen. SIV and LEFCOL were both supportive of this as it may be the only real way in which individual fishermen will know of the various projects.	☑	ISSUE #1: Discussed with [redacted] [redacted] seismic campaigns and he raised the issue that seismic campaigns can result in environmental impacts. MERIT #1: Not relevant ISSUE #2: Discussed the nature of consultation and the amount of consultation that LEFCOL and SIV are asked to participate in, they said that there is a lot of consultation (too much) and that any means that the oil and gas industry could help reduce or make it more efficient would be gratefully received. MERIT #2: Explained EAPL had combined the three projects in a single flyer and taken the opportunity of the operational stakeholder consultation to discuss the various projects to try and minimise the number of different requests for consultation. MERIT #3: Also discussed the SIV newsletter which is now quarterly as a means of further disseminating the information to a greater number of fishermen. SIV and LEFCOL were both supportive of this as it may be the only real way in which individual fishermen will know of the various projects. Provide details of projects for incorporation within SIV newsletter Q1 2018. This action is now being tracked through Corvid 1290.	12-Jan-18
1251	21-Dec-17	Emailed updated Fact Sheet Response received from [redacted] [redacted]: Is this something You would like to inform Victoria fishers of in the new year? We would welcome the discussion of including this in our early March version of PROFISH that is distributed to all Victorian commercial fishers.	☑	ISSUE: PROFISH Consultation MERIT: Yes and forwarded to [redacted] [redacted] (EAPL) for follow up.	27-Dec-17
1289	27-Dec-17	[redacted] [redacted] (EAPL) responded: We would certainly be interested in including our fact sheet in the March edition of PROFISH. We can provide more detail on particular aspects of the planned work, if you think it would be of interest. Please advise what we need to do to proceed.	☑	ISSUE: PROFISH consultation MERIT: Yes EAPL agree & will provide details of projects for incorporation within SIV newsletter Q1 2018.	07-Mar-18

Organisation: Seafood Industry Victoria **ID** 33

Contact Name: [redacted], [redacted]

Position: Executive Director

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1290	08-Jan-18	[redacted] [redacted] responded: With our postage requirements for PROFISH, we could do a double sided A4 insert in the magazine, which is sent out to 700 commercial fishing contacts State-wide. It would be open to you guys to develop the A4 page with the information you want to inform industry of and what comment/response you desire. Then it's a matter of considering whether you want to do the printing and deliver them to us, or whether you provide us with a PDF and we can print them for you. Once we know this then I can give you more insight on cost to do so, the [redacted] will start at $[redacted] if the fliers are printed and delivered. If you want us to do the printing then these costs will need to be factored in on top of this. This sponsorship assists us ensure the magazine is maintained as a useful resource for industry and at free-of-charge. In the coming weeks we will begin our development and input search for the first quarter PROFISH, which will look to be distributed early-mid March.	☑	ISSUE: PROFISH consultation MERIT: Yes EAPL agree & will provide details of projects for incorporation within SIV newsletter Q1 2018.	15-Feb-18
1477	13-Feb-18	[redacted] (EAPL) rang [redacted] [redacted] (SIV) and left message with answering service asking him to call back. Call is in regarding to pricing for printing EAPL fact sheet for inclusion in PROFISH newsletter`	☑	As per our phone conversation last week, please find below options for inclusion of a double-sided A4 insert into the March version of PROFISH, our industry magazine. We would be required to print 750 copies as on review of our distribution list this is how many we post per volume. To print 750 copies, for paper, printing, the costs associated including ink, lease, and SIV Staff time would add on $[redacted] to the original cost, and therefore a total of $[redacted] for us to print, insert and post a double-sided flyer with our March edition of PROFISH. Could you please review this and let me know ASAP if this is something you wish to proceed with.	23-Feb-18
1479	16-Feb-18	[redacted] (EAPL) spoke with [redacted] [redacted] (SIV) about the cost of printing a double-sided A4 fact sheet for inclusion in the March edition of PROFISH. J [redacted] advised he will advise of printing costs next week.	☑	[redacted] (EAPL) received email from [redacted] [redacted] (SIV): As per our phone conversation last week, please find below options for inclusion of a double-sided A4 insert into the March version of PROFISH, our industry magazine. We would be required to print 750 copies as on review of our distribution list this is how many we post per volume. To print 750 copies, for paper, printing, the costs associated including ink, lease, and SIV Staff time would add on $[redacted] to the original cost, and therefore a total of $[redacted] for us to print, insert and post a double-sided flyer with our March edition of PROFISH. Could you please review this and let me know ASAP if this is something you wish to proceed with.	23-Feb-18

Organisation: Seafood Industry Victoria **ID** 33

Contact Name: [redacted], [redacted]

Position: Executive Director

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1575	20-Feb-18	Email sent to [redacted] (EAPL) from [redacted] (SIV): As per our phone conversation last week, please find below options for inclusion of a double-sided A4 insert into the March version of PROFISH, our industry magazine. We would be required to print 750 copies as on review of our distribution list this is how many we post per volume. To print 750 copies, for paper, printing, the costs associated including ink, lease, and SIV Staff time would add on $[redacted] to the original cost, and therefore a total of [redacted] for us to print, insert and post a double-sided flyer with our March edition of PROFISH. Could you please review this and let me know ASAP if this is something you wish to proceed with	☑	ISSUE: PROFISH consultation MERIT: Yes EAPL agree & will provide details of projects for incorporation within SIV newsletter Q1 2018.	21-Feb-18
1605	07-Mar-18	Email sent from [redacted] (EAPL) to [redacted] (SIV): Good afternoon [redacted], Please find attached the double-sided A4 offshore fact sheet for inclusion in the next addition of PROFISH. Please proceed with printing 750 copies and insert into PROFISH for distribution to the fishing industry. Please notify me if you require any further information ([redacted].[redacted]@exxonmobil.com or 92610788).	☐	No objections, claims or issues raised	
1606	07-Mar-18	Email from [redacted] (SIV) to [redacted] (EAPL): thanks [redacted] So I assume that you have accepted the level of sponsorship for this at [redacted]	☐	No objections, claims or issues raised	
1607	07-Mar-18	Email sent from [redacted] (EAPL) to [redacted] (SIV): Yes, we have accepted the cost of $[redacted]0.	☐	No objections, claims or issues raised	
1609	10-Apr-18	Email from [redacted] (SIV) to [redacted] (EAPL): Hi [redacted] With Easter our printing got held up but we expect it to go out in the coming days. It is printed and ready to be inserted.	☐	No objections, claims or issues raised	
1608	10-Apr-18	Email sent from [redacted] (EAPL) to [redacted] (SIV): Good morning [redacted], I'm just following up to see if our Esso Australia Offshore Fact Sheet was included in the March edition of PROFISH?	☐	No objections, claims or issues raised	
1628	16-May-18	Email received by [redacted] (EAPL) from SIV with invoice for inclusion of EAPL fact sheet in SIV newsletter: Hi [redacted], Here's invoice INV-[redacted] for [redacted]00 AUD. The amount outstanding of [redacted].00 AUD is due on 23 May 2018. View and pay your bill online: h[redacted] From your online bill you can print a PDF, export a CSV, or create a free login and view your outstanding bills. If you have any questions, please let us know. Thanks, Seafood Industry Victoria Inc	☑	CLAIM: Invoice INV-[redacted] to be paid in full by EAPL MERIT: PIF by [redacted] (EAPL)	01-Aug-18

Organisation: Seafood Industry Victoria **ID** 33

Contact Name: [redacted], [redacted]

Position: Executive Director

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
2006	01-Aug-18	Email from [redacted] (EAPL) to [redacted] (SIV): Good afternoon, I would like to arrange payment for this invoice could you please contact me so I can pay over the phone with my Company Visa please.	☐	Response from [redacted](SIV): Hi [redacted] I have just spoken with our accountant and unfortunately at present we do not have the facilities to process credit card payments. All invoices need to be paid via EFT	
2088	02-Aug-18	Hi [redacted] Email sent from [redacted](EAPL) to [redacted](SIV): No worries…I will have to arrange for our accounts department to set up PO to arrange payment……this may take a little more time….	☐		
2034	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: [redacted] (Formerly Santos) **ID** 34

Contact Name: [redacted], [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
206	09-Oct-17	Stakeholder update email sent. [redacted] (Santos) requested to be taken off stakeholder list (no operations in Victoria).	☑	Update contact details	19-Oct-17
207	19-Oct-17	Sent stakeholder email sent. Response received and contact names updated	☐	No objections, claims or issues raised	
208	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
209	09-Nov-17	[redacted] ACCEPTED invitation	☐	No objections, claims or issues raised	
316	17-Nov-17	[redacted] [redacted] attended the Lakes Entrance community session	☐	No objections, claims or issues raised	
1196	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2097	06-Aug-18	Email received from [redacted] ([redacted]): Hello, Effective 13/07/2018 please direct any correspondence to the following addresses: For Stakeholder: stakeholder@cooperenergy.com.au	☑	ISSUE: New correspondence email address MERIT: Contact email updated	06-Aug-18
2035	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: South East Trawl Fishing Industry Association **ID** 37

Contact Name: [redacted], [redacted]

Position: Executive Officer

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
213	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
214	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
217	09-Nov-17	Called land line and mobile - no answer	☐	No objections, claims or issues raised	
1248	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
1569	15-Feb-18	[redacted] (EAPL) met with [redacted] (LEFCOL) and [redacted] (SETFIA) at LEFCOLs offices in Lakes Entrance on Thursday 15th Feb.	☑	ISSUE: Use of SMS messages to notify fishermen of activities MERIT: Yes useful means of consultation and will be further discussed in Esso – SMS for G&G campaign issued 21 Feb MERIT: SETFIA has been set up in the EAPL system and that SMS messages will be used to inform fishermen of projects as and when they occur	20-Jul-18
1572	15-Feb-18	[redacted] (EAPL) met with [redacted] (LEFCOL) and [redacted] (SETFIA) at LEFCOLs offices in Lakes Entrance on Thursday 15th Feb.	☑	ISSUE: Fishing studies – use of SETFIA for consultancy work MERIT: Yes and will be discussed within Esso projects to see if it of interest to help determine fishing intensity, fishing techniques and how to minimise interactions.	
1614	08-May-18	SMS received by [redacted] (EAPL) from [redacted] (SETFIA): [redacted] pls can we reschedule today's chat? [redacted] replied to [redacted]: Yes nothing to report from my end - no dates confirmed for any new activities. [redacted] replied to [redacted]: Ok, I'll move a week	☐	No objections, claims or issues raised	
2036	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2109	17-Aug-18	Email received by [redacted] (EAPL) from [redacted] (SETFIA): [redacted] We agreed that there was no need to do anything here didn't we? Thanks, SB	☐		

Organisation: South Gippsland Shire Council **ID** 38

Contact Name: [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
210	09-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
211	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
212	08-Nov-17	Invitation DECLINED by P [redacted]	☐	No objections, claims or issues raised	
1250	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2037	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: State Emergency Service **ID** 39

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
218	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
219	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
220	09-Nov-17	Left message on land line and spoke with [redacted] DECLINED invitation	☐	No objections, claims or issues raised	
1044	17-Nov-17	[redacted] (EAPL) spoke with [redacted] about oil and gas developments explained what condensate was. Discussed the three projects at a high level. No specific issues raised he was just interested to know more about the Oil and Gas industry and what it was doing.	☐	No objections, claims or issues raised	
1247	21-Dec-17	Emailed updated Fact Sheet Response received: Out of office until 20-Dec-17	☐	No objections, claims or issues raised	
2038	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Sustainable Shark Fishing Association **ID** 40

Contact Name: [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
221	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
222	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
223	09-Nov-17	[redacted] (EAPL) spoke with [redacted] MAYBE coming to community session	☐	No objections, claims or issues raised	
1252	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2039	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Tasmanian Seafood Industry Council **ID** 41

Contact Name: [redacted]

Position: [redacted]r

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
224	19-Oct-17	Sent Stakeholder email sent	☐	No objections, claims or issues raised	
1256	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2040	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Maritime Safety Victoria (formerly Transport Safety Victoria) **ID** 42

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
927	16-Nov-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
928	07-Dec-17	Email received from [redacted]: Maritime Safety Victoria has a degree of oversight of vessel operations within state waters extending 3nm from the coast. We issue Notice To Mariners when required and in some cases will issue direction to restrict vessel movements and operations based on safety if there is need to do so.ie activities in the vicinity of drilling operations, survey, works etc. I'll keep reading the newsletter updates. I notice that the operator at Barrys Beach is changing. When it occurs it would be good to have a contact so that we at a minimum can include them on our NTM distribution list and pass their contact onto other agency's who issue NTM.	☑	ISSUE: operator at Barrys Beach is changing, Provide new operator details to TSV. MERIT: Details will be provided	14-Mar-18
1257	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
1581	14-Mar-18	[redacted] (EAPL) sent email to [redacted] (MSV) advising of new operator at Barrys Beach.	☐	No objections, claims or issues raised	
2041	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2093	06-Aug-18	Email received from MSV: I am currently away on leave returning Monday 13 August 2018. I'm on email however if matter is urgent please email: [redacted].vic.gov.au.	☐	No objections, claims or issues raised	

Organisation: Department of Economic Development, Jobs, Transport and Resources **ID** 43

Contact Name: [redacted], [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
225	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
226	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
227	09-Nov-17	[redacted] (EAPL) Spoke with [redacted] DECLINED invitation but will continue ongoing consultation with [redacted]	☐	No objections, claims or issues raised	
1200	21-Dec-17	Emailed updated Fact Sheet Response received: I will be on leave from Monday 18 December 2017 until Tuesday 2 January. 2018. I will respond to your message when I return.	☐	No objections, claims or issues raised	
2002	25-Jul-18	[redacted] (EAPL) received invitation to a meeting with EcoDev / DEDJTR / parks victoria and EPA on 21/08/18. Attendees will be [redacted] (EAPL), [redacted] (EAPL), and possibly the following (they have been invited by [redacted] (DEDJTR) who is organizing it). [redacted] DEDJTR / ecodev [redacted] DEDJTR [redacted] DEDJTR [redacted] DEDJTR [redacted] Parks Victoria [redacted] EPA [redacted] DEDJTR	☐	No objections, claims or issues raised	
2100	06-Aug-18	Email received from [redacted]: Hi, I will be out of the office attending an exercise, returning on Friday 3 August. Email response may be delayed during this time. In case of a maritime incident, please notifiy the DEDJTR State Duty Officer on [redacted].	☐	No objections, claims or issues raised	
2042	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Department of Economic Development, Jobs, Transport and Resources **ID** 44

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
228	19-Oct-17	Sent Stakeholder email sent	☐	No objections, claims or issues raised	
229	26-Oct-17	community session invite sent BOUNCED	☐	No objections, claims or issues raised	
1199	21-Dec-17	Emailed updated Fact Sheet BOUNCED	☑	ISSUE: Fact sheet resent to update email [redacted]	10-Jan-18
1294	10-Jan-18	Response received: I am on leave until mid- December 2018. Please contact [redacted]	☑	ISSUE: Fact sheet resent to updated contact: [redacted]	10-Jan-18
2043	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Department of Economic Development, Jobs, Transport and Resources **ID** 45

Contact Name: [redacted], [redacted]

Position: General Manager

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
231	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
232	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
1198	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2095	06-Aug-18	Email received from [redacted] (DEDJTR): I am out of the office from 31/07/2018 05:30 PM until 20/08/2018 09:00 AM. I am currently on leave, returning 20 August 2018. For any urgent matters,please contac[redacted]@ecodev.vic.gov.au or phone [redacted] [redacted]I am out of the office from 31/07/2018 05:30 PM until 20/08/2018 09:00 AM. I am currently on leave, returning 20 August 2018. For any urgent matters, please contact [redacted]	☐	No objections, claims or issues raised	
2044	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Department of Environment, Land, Water and Planning **ID** 46

Contact Name: [redacted], [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
234	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
235	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
236	09-Nov-17	[redacted] (EAPL) called mobile and left message re invite	☐	No objections, claims or issues raised	
1201	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2045	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: VicPlan Operations Group **ID** 47

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
237	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
238	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
239	09-Nov-17	Spoke with receptionist Linda who DECLINED invitation on behalf of R [redacted]	☐	No objections, claims or issues raised	
1265	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2046	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Victorian Recreational Fishing (VRFish) **ID** 51

Contact Name: [redacted]

Position: [redacted]r

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
240	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
241	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
242	09-Nov-17	[redacted] (EAPL) called land line and left message re invite	☐	No objections, claims or issues raised	
243	15-Nov-17	[redacted] left message DECLINED invitation but still wants to be included in any stakeholder consultation, esp sword fisherman	☐	No objections, claims or issues raised	
1268	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2047	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Victorian Scallop Industry Association **ID** 52

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
244	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
245	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
246	09-Nov-17	[redacted] (EAPL) called mobile and land line and & left message on land line re invite	☐	No objections, claims or issues raised.	
1048	17-Nov-17	The representative from the Victorian Scallop Fishermen's Association was concerned that seismic activity could harm spawning scallops. We explained that the proposed work does not include any high-energy seismic and that there is no scientific evidence of seismic harming scallop populations. We gave him our contact details in case he would like to discuss any further concerns.	☑	ISSUE: The representative from the Victorian Scallop Fishermen's Association was concerned that seismic activity could harm spawning scallops. MERIT: EAPL explained that the proposed work does not include any high-energy seismic and that there is no scientific evidence of seismic harming scallop populations. Gave him EAPL contact details to discuss any further concerns.	21-Nov-17
1270	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2048	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☑	ISSUE: Email received from [redacted] (VSIA): Thats great pitty I can't see none of the detail on the maps. Think I need to get my eyes checked MERIT: Emailed [redacted] high resolution copies of the maps used in the fact sheet (see ID_2103)	08-Aug-18
2103	08-Aug-18	Email sent from [redacted] (EAPL) to [redacted] (VSIA): Thanks for your email. I have attached higher resolution copies of the maps for you to view. Please let me know if they don't suffice.	☐		

Organisation: Wildlife Victoria **ID** 55

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
247	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
248	25-Oct-17	email bounced - updated email address from website. Stakeholder update email resent.	☑	Identify contact and update	25-Oct-17
249	08-Nov-17	community session invite resent to alt email	☐	No objections, claims or issues raised	
1277	21-Dec-17	Emailed updated Fact Sheet Response received: Thanks for contacting the Wildlife Victoria office.	☐	No objections, claims or issues raised	
2049	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2092	06-Aug-18	Email received from WV: Thanks for contacting the Wildlife Victoria office. Important: If you're contacting us about a wildlife emergency, need wildlife advice, or are already speaking to our emergency response service about an ongoing situation, please contact the emergency response service (open 7 days) on[redacted]or by logging a case at https://wildlifevictoria.org.au/wildlife-victoria-rescue#report Please understand that our service can get very busy as we prioritise a speedy response to wildlife emergencies first and foremost. This may mean that we are delayed in getting back to you. If you do not hear from us within a week, please feel free to contact us again, or contact our office directly on [redacted]. Best regards, Wildlife Victoria	☐	No objections, claims or issues raised	

Organisation: ROC Oil Limited (formerly Anzon Retrocom) **ID** 57

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
250	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
251	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
252	09-Nov-17	[redacted] (EAPL) called land line and left message re invite	☐	No objections, claims or issues raised	
1245	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2050	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Oil Basins Ltd **ID** 58

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
255	09-Oct-17	[redacted] (EAPL) spoke to receptionist and OBL have DECLINED invitation	☐	No objections, claims or issues raised	
253	10-Oct-17	Stakeholder update email sent. Contact details updated per request	☐	No objections, claims or issues raised	
254	26-Oct-17	Community session invite sent	☐	No objections, claims or issues raised	
1232	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2051	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Carnarvon Hibiscus **ID** 61

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
256	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
257	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
258	09-Nov-17	[redacted] (EAPL) called mobile left message re invite	☐	No objections, claims or issues raised	
1191	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2052	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Roads and Maritime Services **ID** 62

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
259	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
260	18-Oct-17	Email received with updated org name from Transport for NSW to Roads and Maritime Services	☑	Update contact details	18-Oct-17
1244	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2053	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Department of Primary Industries, Parks, Water and Environment (Tasmania) **ID** 63

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
261	10-Jan-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
1207	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2054	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Parks and Wildlife Service (Tasmania) **ID** 64

Contact Name: [redacted]

Position: [redacted]r

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
262	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
1243	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2055	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Apollo Bay Fishermen's Co-op **ID** 66

Contact Name: [redacted]

Position: Not available

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1175	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2056	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Victorian Bays and Inlets Fisheries Association **ID** 70

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
263	19-Oct-17	Sent Stakeholder email sent	☐	No objections, claims or issues raised	
264	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
265	09-Nov-17	[redacted] (EAPL) spoke with [redacted] DECLINED invitation	☐	No objections, claims or issues raised	
1259	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2057	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Victorian Fishery Association Resource Management **ID** 71

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
266	19-Oct-17	Sent Stakeholder email sent - Bounced	☐	No objections, claims or issues raised	
267	26-Oct-17	community session invite sent - BOUNCED	☐	No objections, claims or issues raised	
268	09-Nov-17	[redacted] (EAPL) spoke with [redacted] DECLINED invitation (and no longer has an email address)	☐	No objections, claims or issues raised	
1262	21-Dec-17	Emailed updated Fact Sheet BOUNCED notes below advise stakeholder no longer has an email address	☐	No objections, claims or issues raised	

Organisation: Victorian Rock Lobster Association **ID** 73

Contact Name: [redacted], [redacted]

Position: [redacted] [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
269	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
270	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
271	09-Nov-17	[redacted] (EAPL) called land line and left message re invite	☐	No objections, claims or issues raised	
1269	21-Dec-17	Emailed updated Fact Sheet Response received: was deleted without being read on Wednesday, December 20, 2017	☐	No objections, claims or issues raised	
2058	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Warrnambool Professional Fishermen's Association **ID** 74

Contact Name: [redacted]

Position: Not available

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
272	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
1276	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2059	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Commonwealth Fisheries Association **ID** 76

Contact Name: [redacted]

Position: Chief Executive Officer

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
273	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
1194	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2060	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Southern Shark Industry Alliance **ID** 77

Contact Name: [redacted]

Position: Executive Director

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
275	08-Nov-17	sent stakeholder update email	☐	No objections, claims or issues raised	
1253	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
1173	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2061	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Eastern Victorian Sea Urchin Divers Association **ID** 79

Contact Name: [redacted], [redacted]

Position: [redacted] [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
274	10-Oct-17	Stakeholder update email sent Bounced	☑	Identify contact and update contact details.	19-Oct-17
276	19-Oct-17	Email address found online - resent stakeholder email	☐	No objections, claims or issues raised	
277	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
278	09-Nov-17	[redacted] (EAPL) spoke with [redacted] DECLINED invitation	☐	No objections, claims or issues raised	
1213	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
1594	09-Apr-18	Email received from [redacted] (EVSUDA) to EAPL: Dear Sirs, As advised I represent the Abalone Industry in East Gippsland. We welcome our ongoing exchange of correspondence. Some of our members have expressed interest in obtaining mappings that might have been undertaken by ESSO in any waters East of Marlo – say out to the state boundary being 3 miles. The purpose to examine the topography of the ocean floor indicating reefs etc that might assist our industry. Can you please assist [redacted]? Many thanks [redacted]	☑	ISSUE: interest in obtaining mappings that might have been undertaken by ESSO in any waters East of Marlo – out to the state boundary being 3 miles. (See ID_1602 for response) MERIT: Not relevant to EP but response required as part of community consultation	01-May-18
1602	01-May-18	Email sent from [redacted] (EAPL) to [redacted] (EVSUDA): Hi [redacted], Thank you for your question. From time to time we undertake small sections of bathymetry for specific projects, usually over a discrete area. That said, we have not done any mapping east of Marlow. We can provide you a link to some mapping available online which may be of some help. Http://fishing-app.gpsnauticalcharts.com/i-boating-fishing-web-app/fishing-marine-charts-navigation.html#9/-38.7697/146.6137	☐	No objections, claims or issues raised	
2062	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Australian Oceanographic Services **ID** 81

Contact Name: [redacted], [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1286	19-Dec-17	Email received from [redacted] in response to ad in "Lakes Times". AOS has two vessels – one at Lakes Entrance, the other at Devonport; for ExxonMobil to consider for offshore work. Each of these vessels carry the correct commercial AMSA Safe Operating Certificates as well as recent audits to IMCA CMID or Polarcus SVIC standard.	☑	ISSUE: Provision of vessels MERIT: No - Not relevant to EP but response to be provided. Forwarded to [redacted] (EAPL) for follow up.	19-Dec-17
1287	19-Dec-17	[redacted] (EAPL) responded: Our Major Programs – Underwater Operations coordinator is [redacted]. She can be contacted on [redacted]	☐	No objections, claims or issues raised	
1170	21-Dec-17	Emailed updated Fact Sheet BOUNCED	☑	Fact sheet resent to updated email address: alevings1@gmail.com	10-Jan-18
2063	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: East Gippsland Estuarine Fishermen's Association **ID** 82

Contact Name: [redacted]

Position: [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
279	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
280	26-Oct-17	community session invite sent - BOUNCED	☐	No objections, claims or issues raised	
281	09-Nov-17	left message on mobile re invite	☐	No objections, claims or issues raised	
1208	21-Dec-17	Emailed updated Fact Sheet BOUNCED	☑	ISSUE: Resent Fact Sheet to updated email [redacted]	10-Jan-18
2064	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Corner Inlet Fisheries Habitat Association **ID** 83

Contact Name: [redacted]

Position: Member

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
282	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
283	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
284	09-Nov-17	[redacted] (EAPL) spoke with D [redacted] DECLINED invitation for himself and [redacted]	☐	No objections, claims or issues raised	
1195	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2065	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Port Phillip Sea Pilots **ID** 84

Contact Name: [redacted], [redacted]

Position: [redacted] [redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1169	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2066	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: National Offshore Petroleum Titles Administrator **ID** 85

Contact Name: [redacted], [redacted]

Position: S[redacted]

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1231	21-Dec-17	Emailed updated Fact Sheet BOUNCED	☑	ISSUE: Resent fact sheet to updated email address: corporate@nopta.gov.au	10-Jan-18
2067	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Bass Oil **ID** 87

Contact Name: [redacted]

Position: Chief Executive Officer

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
285	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
286	26-Oct-17	community session invite sent - BOUNCED	☐	No objections, claims or issues raised	
287	09-Nov-17	[redacted] (EAPL) called land line and left message re invite	☐	No objections, claims or issues raised	
1185	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2068	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: [redacted] **ID** 88

Contact Name: [redacted]

Position: Community member

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1171	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2069	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Water Police **ID** 90

Contact Name: [redacted]

Position: Acting Senior Sergeant

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
289	18-Oct-17	[redacted] suggested using [redacted] - update email sent	☐	No objections, claims or issues raised	
290	22-Oct-17	Contact updated to [redacted] from [redacted]	☐	No objections, claims or issues raised	
291	26-Oct-17	community session invite sent	☐	No objections, claims or issues raised	
292	09-Nov-17	[redacted] (EAPL) left message re invite	☐	No objections, claims or issues raised	
293	10-Nov-17	[redacted] (EAPL) spoke to [redacted] who advised [redacted] ACCEPTED invitation	☐	No objections, claims or issues raised	
1047	17-Nov-17	The water police told us that the swordfish fishing tourist operator numbers in Bass Strait are expanding rapidly. They are looking for support / funding for an awareness campaign regarding our facilities and the 500m safety zones (signage, pamphlets, coastguard personnel). [redacted] (EAPL) was going to look into whether we have any funding available.	☑	ISSUE: Water Police are looking for support / funding for an awareness campaign regarding our facilities and the 500m safety zones (signage, pamphlets, coastguard personnel). MERIT: EAPL to look into whether any funding available. [redacted] (EAPL) sent an email to the Paynesville Volunteer Coast Guard as there are funds left over in this year's budget. She will follow up again but too late now to try get payment in 2017.	11-Dec-17
1140	11-Dec-17	[redacted] (EAPL) sent an email to the Paynesville Volunteer Coast Guard as there are funds left over in this year's budget. She will follow up again but too late now to try get payment in 2017.	☑	ISSUE: Follow up on funding with volunteer coastguard in 2018 MERIT: Yes community benefits but not EP related action	27-Apr-18
1272	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2070	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Mornington Peninsula Shire **ID** 93

Contact Name: [redacted]

Position: Emergency Management Coordinator

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
294	10-Oct-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
1228	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2071	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Department of Agriculture and Water Resources **ID** 99

Contact Name: [redacted], [redacted]

Position: Director Compliance Division

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
295	09-Nov-17	sent stakeholder update email	☐	No objections, claims or issues raised	
1197	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2113	22-Aug-18	10.30am 22 August 2018 telephone conversation between [redacted] [redacted] and the Maritime National Coordination Centre (MNCC) on 1300 004 605. Explained that in December 2018 Esso would be bringing a vessel from the North Sea via Singapore onto a petroleum title area approx. 70km offshore in Bass Strait for a period of approximately two weeks. MNCC stated that they did not need to be either consulted on, or informed of, movement of international vessels outside Australian territorial seas (i.e. beyond the 12NM territorial sea boundary). MNCC confirmed that should the vessel be planning to enter Australian waters the reporting requirement is submission of pre-arrival information through MARS no later than 12 hours prior to arrival (as applicable to all commercial vessels entering Australian waters) and any changes in circumstances during the voyage in Australian waters must be reported as soon as practicable.	☐		

Organisation: CarbonNet **ID** 100

Contact Name: ,

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1142	06-Oct-17	[redacted] (EAPL) provided a very brief overview of activities at meeting and made reference to projects we're looking at undertaking in 2018.	☐	No objections, claims or issues raised	
1189	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	

Organisation: Victorian Fisheries Authority **ID** 101

Contact Name: [redacted], [redacted]

Position: Project Officer, Fisheries Management and Science

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
297	08-Nov-17	stakeholder update email sent	☐	No objections, claims or issues raised	
1260	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2072	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Department of Environment & Energy **ID** 102

Contact Name: DoEE,

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
298	08-Nov-17	stakeholder update email sent	☐	No objections, claims or issues raised	
1204	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2073	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Director of National Parks **ID** 103
Contact Name: DoNP,
Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
299	08-Nov-17	stakeholder update email sent	☐	No objections, claims or issues raised	
1206	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2074	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Department of Defence **ID** 104
Contact Name: DoD,
Position: Australian Hydrographic Office

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1143	14-Dec-17	Stakeholder update email and fact sheet sent	☐	No objections, claims or issues raised	
1203	21-Dec-17	Emailed updated Fact Sheet Response received: Thank you for emailing the Australian Hydrographic Service (AHS). Please accept this email as acknowledgement that your email has been received by the AHS.	☐	No objections, claims or issues raised	
2075	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2089	06-Aug-18	Email received from AHO:	☐		

Organisation: Department of Foreign Affairs & Trade **ID** 105

Contact Name: [redacted], [redacted]

Position: Director, Sea Law, Environment Law and Antarctica Section, International Legal Branch

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
301	08-Nov-17	Stakeholder update email sent. Response - out of office until 10/11/17	☐	No objections, claims or issues raised	
1205	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2076	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2096	06-Aug-18	I am out of the office. For Antarctic and CCAMLR issues please contact [redacted] [redacted]. For all else, please contact [redacted], Director Sea Law section. Thank you Todd	☐	No objections, claims or issues raised	

Organisation: Boating Industry Association of Victoria **ID** 107

Contact Name: BIAoV,

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
303	16-Nov-17	Stakeholder update email sent	☐	No objections, claims or issues raised	
1187	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2077	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Life Saving Victoria **ID** 109

Contact Name: LSV,

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
305	16-Nov-17	stakeholder update email sent	☐	No objections, claims or issues raised	
1224	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2078	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Yachting Victoria **ID** 111

Contact Name: [redacted]

Position: Regional Manager

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
307	16-Nov-17	stakeholder update email sent	☐	No objections, claims or issues raised	
1278	21-Dec-17	Emailed updated Fact Sheet Response received: Out of office until 8-Jan-18	☐	No objections, claims or issues raised	
2079	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Victorian Regional Channels Authority **ID** 112

Contact Name: [redacted]

Position: Harbour Master, Port of Geelong

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
308	16-Nov-17	stakeholder update email sent Response received thanking us for the update	☐	No objections, claims or issues raised	
1266	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2080	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Port of Portland **ID** 115

Contact Name: [redacted], [redacted]

Position: Habour Master, Port of Portland

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
311	16-Nov-17	stakeholder update email sent	☐	No objections, claims or issues raised	
1242	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2081	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Gippsland Times **ID** 116

Contact Name: ,

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
320	26-Sep-17	Esso undertook a series of ads in the Gippsland Times focusing on our economic contribution, investment and community outreach in Gippsland and mentions our exploration program.	☐	MERIT: Esso undertook a series of ads in the Gippsland Times focusing on our economic contribution, investment and community outreach in Gippsland and mentions our exploration program.	
1218	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	

Organisation: Lakes Post **ID** 117

Contact Name: ,

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1141	14-Dec-17	Advertisement appearing this week's Lakes Post (see attachment)	☐	No objections, claims or issues raised	
1219	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	

Organisation: Australian Communications And Media Authority **ID** 118
Contact Name: AC&MA,
Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1144	14-Dec-17	Stakeholder update email and fact sheet sent	☐	No objections, claims or issues raised	
1176	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2082	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Border Protection Command **ID** 119

Contact Name: BPC,

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1188	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	

Organisation: Tuna Australia Ltd **ID** 120

Contact Name: [redacted], [redacted]

Position: CEO

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1145	14-Dec-17	Requested contact details via the Enquiry Form on their website	☑	Send fact sheet	19-Dec-17
1149	19-Dec-17	Contact details received and update email and fact sheet sent as requested.	☐	No objections, claims or issues raised	
1254	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2083	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Australian Southern Bluefin Tuna Industry Association **ID** 121

Contact Name: [redacted]

Position: Research Officer

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1146	14-Dec-17	Stakeholder update email and fact sheet sent	☐	No objections, claims or issues raised	
1183	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2084	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: 3D Oil **ID** 122
Contact Name: 3D Oil,
Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1147	14-Dec-17	Stakeholder update email and fact sheet sent.	☐	No objections, claims or issues raised	
1174	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
2085	06-Aug-18	Email and fact sheet sent from [redacted] [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Panama II Octopus fishing vessel **ID** 123

Contact Name: [redacted]

Position: Octopus Fisherman

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
2086	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Victoria Game Fishing Club **ID** 124

Contact Name: [redacted]

Position: President

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1629	17-May-18	Email sent from [redacted](EAPL) to [redacted] Edwardson (VGFC): Exclusion zone reminder flyer Hi [redacted], As discussed, please find attached an information sheet, which outlines the 500m Petroleum Safety Zone (PSZ) is in place around defined offshore facilities, for entrants in the coming fishing competition. If you require any further information, please let me know. Kind regards, Travis Parnaby	☐	No objections, claims or issues raised	
2087	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	

Organisation: Australian Hydrographic Service **ID** 125

Contact Name: [redacted]

Position:

CorespID	Corresp Date	Summary	F/U	Objections/Claims/Issues/Merits	Closed Out
1825	08-Nov-17	stakeholder update email sent	☐	No objections, claims or issues raised	
1824	14-Dec-17	Stakeholder update email and fact sheet sent	☐	No objections, claims or issues raised	
1822	21-Dec-17	Emailed updated Fact Sheet	☐	No objections, claims or issues raised	
1823	21-Dec-17	Emailed updated Fact Sheet Response received: Thank you for emailing the Australian Hydrographic Service (AHS). Please accept this email as acknowledgement that your email has been received by the AHS.	☐	No objections, claims or issues raised	
2090	06-Aug-18	Email and fact sheet sent from [redacted] (EAPL) to all stakeholders: Dear Stakeholder, Please find attached a fact sheet outlining Esso Australia's upcoming activities in Bass Strait. You will have seen some of this information before, in the fact sheet we sent you in December 2017 and the flyer included in PROFISH in May 2018. This revised fact sheet includes more detail on our upcoming drilling programs, pipeline project and other platform based activities. If you have any questions or concerns, please do not hesitate to contact [redacted] on 03 [redacted] or [redacted]@exxonmobil.com Please reply directly to this email if you would like to be taken off our consultation mailing list and/or regular updates mailing list.	☐	No objections, claims or issues raised	
2091	06-Aug-18	Email received from AHO: Please accept this email as acknowledgement that your email has been received by the AHO. The data you have supplied will now be registered, assessed, prioritised and validated in preparation for updating our Navigational Charting products. These adhere to International and Australian Charting Specifications and standards. These standards may result in some data generalisation or filtering due to the scale of existing charts, proximity to other features, and the level of risk a reported feature presents to mariners.	☐	No objections, claims or issues raised	
2112	22-Aug-18	Email received from AHS: Good Morning, The AHO Data Centre is writing to advise all data suppliers that we experienced technical issues with the email gateway between: 2:00pm Thursday 16th August and 10:30am Friday 17th August (AEST) We would like to take this opportunity to reassure our stakeholders that these issues have been resolved and to recommend that if you did not receive an acknowledgement from us in response to your email during this time, that you resend the information to datacentre@hydro.gov.au	☐		