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9 April 2010

Department of Primary Industries
Earth Resources Regulation Branch
Level 16
1 Spring Street
MELBOURNE VIC 3000

Attention: Mr Terry McKinley, Earth Resources Regulation

Dear Sirs

KIPPER TUNA TURRUM PROJECT –
ENVIRONMENT PLAN (INSTALLATION) SUMMARY

Further to the acceptance of the Kipper Tuna Turrum Project Environment Plan (Installation), please find attached the associated summary for public disclosure as required in accordance with Regulation 11(7) of the *Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth).*

Should you require any further information, please contact Louise Mayboehm on (03) 9270 3555.

Yours faithfully

David Kudlak
Projects Executive
Esso Australia Pty Ltd
(for Esso Australia Resources Pty Ltd ABN 62 091 829 819)

Attach

KIPPER TUNA TURRUM PROJECT
SUMMARY ENVIRONMENT PLAN (INSTALLATION)

INTRODUCTION

Esso Australia Pty Ltd (Esso) is undertaking a major project – the Kipper Tuna Turrum Project (The Project) – in the Commonwealth waters of Bass Strait which aims to further develop the Kipper, Tuna and Turrum oil and gas reservoirs.

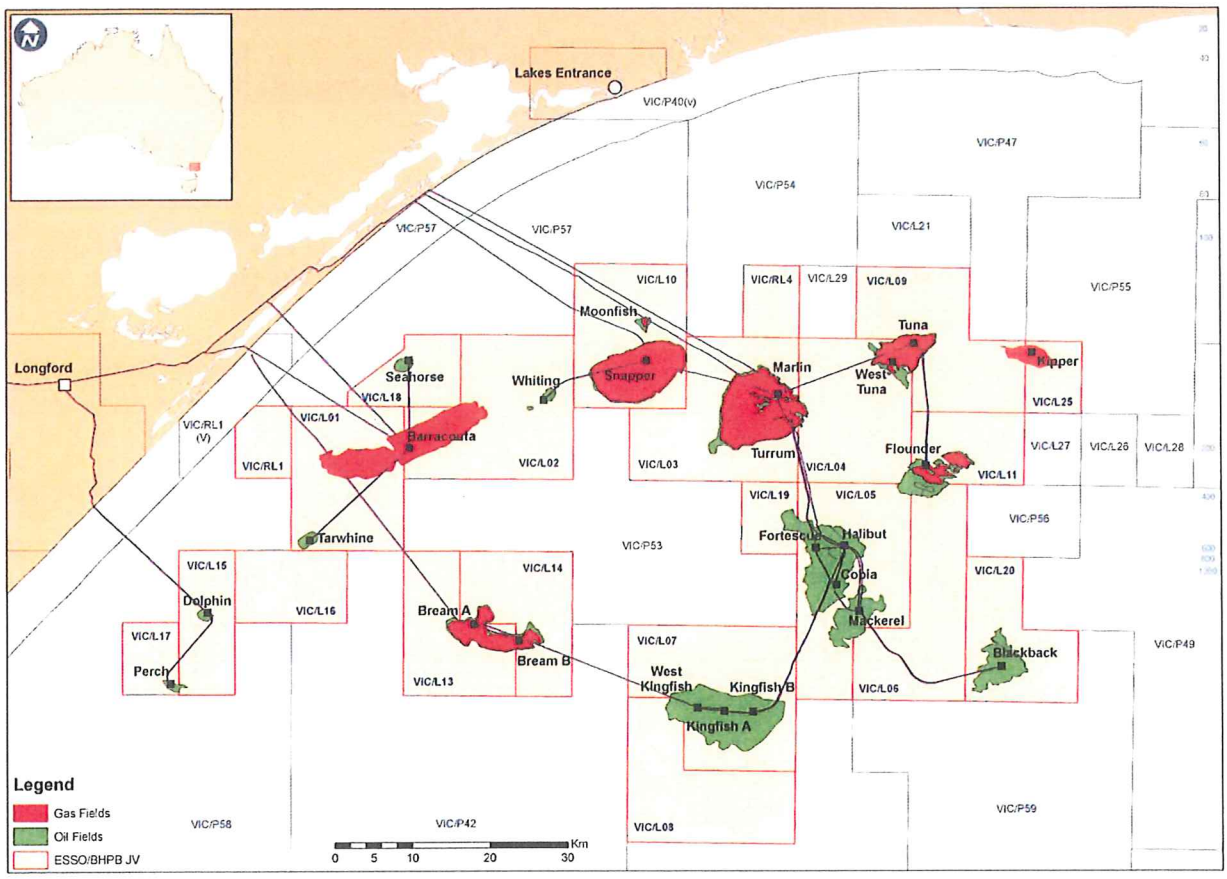
The Kipper resource holds an estimated 620 billion cubic feet of recoverable gas and 30 million barrels of gas liquids. It is located in 100 metres of water approximately 45 kilometres south of Marlo, Victoria.

The Turrum reservoir holds an estimated one trillion cubic feet of gas and 110 million barrels of oil and gas liquids. It is located near the existing Marlin A platform in 60 metres of water, approximately 45 kilometres south east of Lakes Entrance.

The project area is located within the Gippsland Basin of Eastern Bass Strait specifically within the area covered by Production Licences Vic/L03, Vic/L04, Vic/L09, Vic/L10, Vic/L13 and Vic/L25 (Figure1). The proposed developments are illustrated in Figure 2 noted as "Marlin B", "Kipper" and three pipelines depicted in red.

McDermott Australia Pty Ltd (McDermott) formally known as McDermott Industries (Aust) Pty Ltd is the primary contractor for the Project. Offshore marine installation is scheduled to commence in the third quarter of 2010.

Figure 1 – Location of Esso Production Licences and Retention Lease in Bass Strait



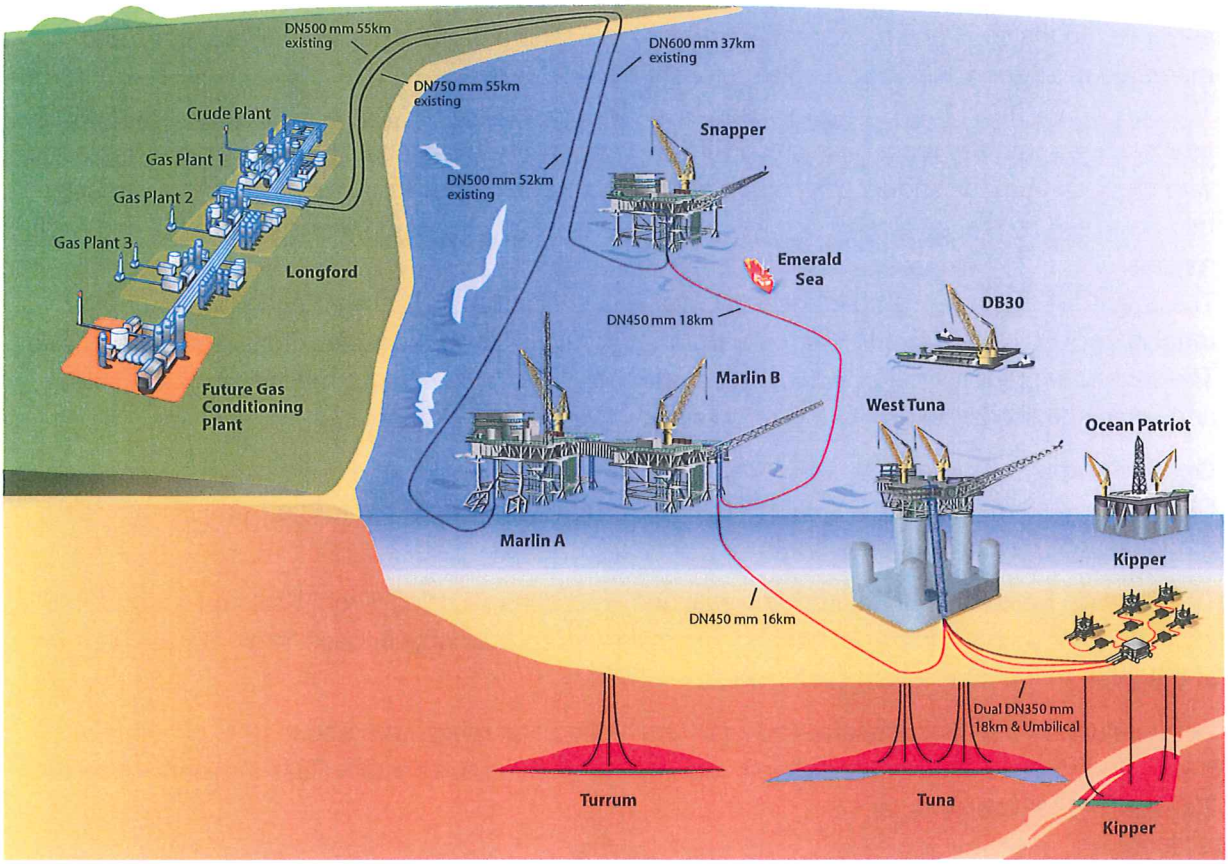
ENVIRONMENT PLAN

Esso conducts routine operations under an approved Bass Strait Environment Plan. Activities included within this plan include on-platform construction, on-platform drilling and routine production operations.

The current Bass Strait Environment Plan does not address installation activities associated with the Project. Therefore, Esso has prepared an Environment Plan to address installation activities including marine transportation, offshore installation, offshore hook-up, pipe dewatering, mechanical completion and offshore pre-commissioning.

This document is a summary of the Environment Plan prepared to address installation activities, which was accepted by the Victorian Department of Primary Industries on 23 March 2010.

Figure 2 – Kipper Tuna Turrum Project Overview



THE ENVIRONMENT

Physical environment

Bass Strait is the region of the continental shelf that separates mainland Australia from Tasmania.

Climate and Meteorology

Wind speeds in Bass Strait are typically in the range of 10 kilometres per hour to 30 kilometres per hour, with maximum gusts reaching 100 kilometres per hour. The wind direction in central Bass Strait is predominately westerly during winter, westerly and easterly during spring and autumn (when wind speeds are highest) and easterly during summer.

Average summer air temperatures in coastal Victoria range from early morning lows of 12°C to 15°C, to afternoon highs of 23°C to 26°C (BOM 2009). Average winter temperatures range from minimums of 4°C to maximums of 15°C in the afternoons.

Average annual rainfall along the coast ranges from approximately 500 millimetres to greater than 1,000 millimetres. Offshore (on Deal Island in central Bass Strait) annual rainfall is comparable (average 714 millimetres) and shows a similar pattern to the coastal region (Lakes Entrance) with slightly higher winter rainfall.

Bathymetry, Geology and Sedimentation

The bathymetry of Bass Strait is concave-shaped, with a shallower rim on the eastern and western entrances to the strait and a deeper centre. A steep inshore profile extends to a less steep and moderate profile concluding with a flat outer shelf plain.

The seabed of Bass Strait is characterised by a variety of sediment types that are associated with tidal currents, with sediment grain size linked to wave energy. Sediments become progressively finer with distance from the shore. Offshore at approximately 35 metres to 40 metres depth an irregular bed colonised by marine growth occurs. Finer, muddy sands occur further offshore in the mid-shelf regions.

The seabed in the project area is essentially flat with gently sloping bathymetry and water depths ranging from 60 metres to 110 metres in the immediate vicinity of the Kipper, Tuna and Turrum fields. The seabed is predominantly calcium carbonate comprised of calcarenite marls and marine shales and sedimentation is likely to be low reflecting low river outflow into the area.

Oceanography

Currents in eastern Bass Strait are tide and wind-driven. Tidal movements in eastern Bass Strait predominantly have a northeast–southwest orientation.

Tidal flows in Bass Strait come from the east and west during a rising (flood) tide, and flow out to the east and west during a falling (ebb) tide. The main tidal components in Bass Strait vary in phase by about three to four hours from east to west.

Temperatures in the subsurface waters of central Bass Strait range from about 13°C in August / September to 16°C in February / March. Surface temperatures in eastern Bass Strait can exceed 20°C at times in late summer.

Bass Strait is a high energy environment exposed to frequent storms and significant wave heights, with highest wave conditions generally associated with strong west to southwest winds. Storms may occur several times a month resulting in wave heights of 3 metres to 4 metres or more. In severe cases, southwest storms can result in significant wave heights of greater than 6 metres.

Biological environment

Bass Strait contains high faunal diversity and species endemicity. Possible causes for this high endemism include the long period of isolation in geological time and climatic barriers; a history of variable exposure and immersion during sea-level changes in the last few million years; the influence of water masses from the west, northeast and south; and the complexity and high biogenic component of the sediment.

Phytoplankton biomass is greatest at the extremities of Bass Strait (particularly in the northeast) where water is shallow and nutrients are high. More than 170 species of zooplankton have been recorded in eastern and central Bass Strait, with copepods making up approximately half of the species encountered (Watson & Chaloupka, 1982).

Bass Strait supports a diverse benthic invertebrate fauna as well as a wide variety of vertebrate species such as fish, birds, seals and whales, which nest and/or feed in Bass Strait regions. Bass Strait also contains a number of species of high commercial and conservation value.

Benthic communities in Bass Strait are varied and are principally determined by the seafloor habitat. The Museum of Victoria conducted an extensive survey of benthic invertebrates in Bass Strait from 1979 to 1983 (Poore et al., 1985; Wilson & Poore, 1987). In general, a highly diverse array of invertebrate groups was found, with several polychaete families, pycnogonids, pericarid crustaceans, opisthobranch molluscs, bryozoans and brachiopods being the most species rich. The main findings included:

- High diversity of invertebrate groups in Bass Strait when compared to equivalent areas of the northern hemisphere.
- Many species are widely distributed across Bass Strait, suggesting heterogenous sediments and many microhabitats.
- Crustaceans and polychaetes dominate the infaunal communities, many of which are unknown species.

As the seafloor of the Gippsland Basin is predominately sandy, marcroalgal communities are not common on subtidal reefs in east Gippsland possibly due to degree of exposure, poor light levels and abrasion by moving sand.

It is estimated that there are over 500 species of fish found in the waters of Bass Strait, including a number of species of importance to commercial and recreational fisheries (LCC, 1993). Fish species that may occur in the project area that are listed as threatened under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)* include the orange roughy *(Hoplostethus atlanticus)* and eastern gemfish *(Rexea solandri)*.

A large number of chondrichthyans (sharks and rays) occur in Bass Strait. Shark species that may occur in the project area that are listed as threatened under the EPBC Act include the great white shark *(Carcharodon carcharias)*, the grey nurse shark *(Carcharias taurus)* and the whale shark *(Rhincodon typus)*.

There are five marine reptiles that occur as migrants along the eastern shores of Bass Strait. These include the loggerhead turtle *(Caretta caretta)*, green turtle *(Chelonia mydas)*, pacific ridley *(Lepidochelys olivacea)*, leathery turtle *(Dermochelys coriacea)* and the yellow-bellied sea snake *(Pelamis platurus)* (G. Gillespie pers. comm. cited in Plummer et al., 2003).

Birds

Bass Strait islands 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 project area in Corner Inlet and on the islands around Wilsons Promontory, and to the east at the Skerries, Tullaberga Island and Gabo Island. Species that nest and breed on these islands include the little penguin *(Eudyptula minor)*, white-faced storm petrel *(Pelagodroma marina)*, short-tailed shearwater *(Puffinus tenuirostris)*, fairy prion *(Pachyptila turtur)*, common diving petrel *(Pelecanoides urinatrix)*, black-faced cormorants *(Phalacrocorax fuscescens)* and the pacific gull *(Larus pacificus)*.

Fifty-eight bird species listed under the EPBC Act may occur, or are likely to occur, within the Gippsland Basin and coastal fringe areas. Many of these species, some of which may be protected by international agreements, may periodically pass through Bass Strait on their way to or from the islands in Bass Strait and the mainlands of Victoria and Tasmania.

Seals

Two Otariid seal species, the Australian fur seal *(Arctocephalus pusillus doriferus)* and the New Zealand fur seal *(A. forsteri)* have breeding colonies in Bass Strait. Both species are listed under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*.

Cetaceans

Twenty seven cetacean species have been recorded in eastern Bass Strait, with the blue whale, southern right whale, humpback whale, sperm whale, bottle-nosed dolphin and common dolphin most commonly recorded.

Introduced marine pests

Marine pests have been introduced to Australia by a variety of human and natural means including ballast water, biofouling, aquaculture operations and aquarium imports. The New Zealand screw shell *(Maoricolpus roseus)* is one exotic marine species known to be introduced to Bass Strait which forms extensive and dense beds on the sandy seafloor.

Areas of conservation significance

The closest Marine Protected Area to the project area is Beware Reef Marine Sanctuary, located approximately 5 km southeast of Cape Conran. Beware Reef Marine Sanctuary is located approximately 35 km north of the project area.

DESCRIPTION OF THE ACTIVITY

The Environment Plan describes the Project from design, construction and installation to commissioning of infrastructure:

- Mobilisation and demobilisation to and from Bass Strait
- Helicopter and marine operations
- Laying of pipelines and umbilicals
- Installation of subsea equipment at Kipper (a central manifold and four coolers with associated connections)
- Installation of a new riser on the Snapper platform, new J-tubes on the Snapper and Bream A platforms, and subsea isolation valves in the Snapper and Bream A pipelines
- Installation of the new Marlin B Platform to be bridge-linked to the existing Marlin A platform

Table 1 outlines the platforms or subsea infrastructure between which pipelines are to be installed, the Licence areas where the construction activity will take place, coordinates, approximate water depth and distance to mainland coastline.

Table 1 - Location details of key offshore infrastructure associated with the project

Location point	License / Lease Area	Coordinate		Water depth (metres)	Proximity to coast (kilometres)
		Latitude	Longitude		
Marlin A platform	VIC/L03	38° 13' 54" South	148° 13' 9" East	59	42
Marlin B platform	VIC/L03	38° 13' 46" South	148° 13' 16" East	60	42
West Tuna platform	VIC/L04	38° 11' 37" South	148° 23' 15" East	61	45
Snapper platform	VIC/L10	38° 11' 42" South	148° 01' 26" East	55	32
Bream A platform	VIC/L13	38° 30' 03" South	147° 46' 15" East	59	46
Kipper	VIC/L09 & VIC/L25	38° 18' 11" South	148° 59' 36" East	95	45

The installation, hook-up and pre-commissioning activity is expected to commence in the third quarter of 2010 and last approximately 18 months.

Mobilisation and demobilisation to Bass Strait

The installation works will be undertaken by an anchored multi-purpose derrick lay barge called the DB30, a Dive Support Vessel called the MV Emerald Sea, a cable lay / dive support vessel, and various support vessels operating from Esso's Barry Beach Marine Terminal and other ports as required.

General helicopter and marine operations

The onshore base for aviation operations will be out of West Sale or other suitable airport facility.

Project related vessels will operate in accordance with applicable Acts and Regulations, the International Convention for the Prevention of Pollution from Ships, 1973 (MARPOL), class and certification requirements.

Laying of pipes and umbilicals

Survey and installation vessels will perform a series of confirmatory surveys during the installation phase. Side scan sonar, echo sounder and a remote operated vehicle will be used for pre-lay and post-lay surveys.

The West Tuna to Marlin B and Marlin B to Snapper pipelines (450 millimetres normal diameter) will be installed as one continuous pipeline during the pipe lay phase of installation.

The looped pipeline from West Tuna to Kipper (350 millimetres normal diameter) will be installed with two pipe lay operations, both initiating from West Tuna and laid to Kipper.

The pipe lay will be from the derrick lay barge which shall set-up on anchor using twelve anchors. A seabed survey array system will be used to accurately position each component into its designated position.

Attendant vessels will move the derrick lay barge anchors along the pipeline route as the pipe lay operation progresses. The anchor management system will use appropriate anchor wire tension and mid-depth buoys if necessary to avoid live pipelines being contacted by anchors or anchor wires.

The pipeline touch-down point will be monitored periodically by remote operated vehicle.

Where the pipelines cross live pipelines, supports will be installed on the seabed either side of the pipeline being crossed. These supports will elevate the new pipeline and provide a minimum 300 millimetre gap between the new and existing pipelines. Concrete mattresses and their associated moulds will be located over the new pipeline in the vicinity of the crossings to ensure stability of the pipeline as necessary.

It is expected that the pipe lay operation will take approximately 60 days subject to weather conditions.

The profile of the sea floor in the area is unlikely to require significant intervention to correct unacceptable pipeline spans. Where pipeline free-span corrections are required, they will be undertaken by installing grout bags.

The grout bags will be deployed onto the seabed and filled until they touch and support the underside of the pipeline. The filling hose will then be disconnected. A non-return valve in the grout bags will prevent the grout from escaping.

The pipelines will be flooded with chemically treated seawater before flooding, cleaning, and gauging tools are pumped toward the Snapper and Kipper ends. The pipeline systems will then be hydro-tested and dewatered using nitrogen and air. The chemically treated water will be discharged overboard. All chemicals proposed for this activity have been assessed to have low environmental impact.

Installation of a new riser on the Snapper platform, new J-tubes on the Snapper and Bream A platforms, subsea isolation valves at Snapper and Bream A pipeline and subsea equipment at Kipper

A new riser will be installed on the Snapper platform connecting the 450 millimetres pipeline to the Marlin B platform. New J-tubes will be installed on the Snapper and Bream A platforms housing the umbilicals for the respective subsea isolation valves.

Subsea isolation valves will be installed at Snapper and in the Bream A gas pipeline. The installation at Bream A will involve leak testing and dewatering of the pipeline.

The treated water from the Bream pipeline will be either routed through the water treatment plant on Bream A prior to discharge overboard, or discharged directly overboard if the treated water does not contain hydrocarbons above 30 milligrams per litre. The treated water will be sampled and tested before being discharged.

The subsea manifold and coolers at Kipper will be installed by the derrick lay barge. A seabed survey array system will be used to accurately position each component into its designated position. Grout bags will be pre-installed around the perimeter of each structure and will be grouted to prevent seabed scour.

Final piping connections between the subsea manifold, coolers, the flow-bases and subsea trees will be installed by a remote operated vehicle and divers.

Installation of the new Marlin B Platform to be bridge-linked to the existing Marlin A platform.

The Marlin B jacket will be launched outside the Marlin A safety zone at a pre-determined location away from live pipelines and other subsea infrastructure. The jacket will be launched from the launch barge through a combination of ballasting of the barge and jacks to push the jacket into the water. Buoyancy tanks fixed to the jacket will ensure the jacket remains floating on the surface of the sea.

Jacket Wet Tow

Once the jacket is launched it will be moved towards the derrick lay barge ready for set-down. With two attendant tugs holding back on the floating jacket the derrick lay barge will winch and position the jacket at its stern.

Jacket Set Down

When the jacket is aft of the derrick lay barge, rigging and a ballasting umbilical will be connected to the jacket in preparation for jacket set-down. The jacket will be upended into the vertical plane through a combination of controlled flooding of selected jacket legs and lifting with the derrick lay barge heavy lift crane. Once the jacket is in the vertical plane the derrick lay barge will proceed towards Marlin A by pulling in on the anchors.

At the Marlin B location, the jacket will be set-down using ballasting and the heavy lift crane in a pre-determined sequence ensuring the jacket is set down in the correct location, within acceptable tolerances.

Primary Pile Driving

Eight primary piles for the jacket will be installed to a depth below mud line of ~19 metres by an underwater hammer suspended from the derrick lay barge crane. The top of the piles continues to ~19 metres above the mud line. Once the pile driving is complete, the annular space between the skirt sleeve and the primary pile will be grouted.

Once grouting of each primary pile is completed, a drilling caisson will be lifted by the derrick lay barge crane on to the primary pile and mated to form a seal connection to allow positive pressure drilling. Two caissons will be used and will be relocated round the eight primary piles as required once insert piling has been completed at each location.

Insert Pile Drilling

With the drilling caisson located on top of a primary pile, a reverse circulation drilling rig will be placed on top of the drilling caisson and a 12 metre water column established to provide for positive pressure drilling of the insert piles through and beneath the primary pile. The positive pressure will ensure the hole does not collapse during drilling.

A 2420 millimetre hole will be drilled to a total depth below the mud line of ~60 metres. During the drilling activity sea water will be circulated through the hole and discharged at the surface.

No drilling muds are required for this operation.

The insert piles will be installed in two sections. The bottom half section will be lowered into the open hole and held in grippers up on the top of the caisson work deck. Concrete spacer blocks will then be individually lowered inside the insert pile (bottom half). The top half of the insert pile will then be fitted up to the bottom half and welded together. The insert pile will be lowered until the top of the insert is just above the grippers on the top of the caisson work deck. Concrete spacer blocks will then be individually lowered inside the insert pile (top half) and the insert pile in turn lowered into the open hole.

A total of eight insert piles will be drilled for Marlin B. It is expected that this operation will take approximately eight weeks.

Following the installation of all modules, construction activities will commence on Marlin B. The activities will consist of general platform based construction works including, structural and pipe welding, cable pulling and terminations.

Pre-commissioning and Commissioning

Pre-commissioning (static and dynamic) of the Bream, Marlin A, Marlin B, West Tuna and Snapper topsides facilities and the subsea systems will commence after Mechanical Completion is achieved and will be performed at different stages in the Project as each system is ready.

Anchors, non-structural equipment and any debris will be retrieved prior to project demobilisation.

Commissioning activities will be conducted under the revised Esso Bass Strait Environment Plan.

ENVIRONMENTAL RISK ASSESSMENT AND MANAGEMENT

A series of environmental risk assessments have been conducted for the Project. The key environmental risks identified include:

- Uncontrolled release of hydrocarbon and chemical spills to the marine environment.
- Discharges of processed hydrocarbons due to rupture of existing operational pipelines.
- Discharges to the seabed and water column associated with:
  - flooding, cleaning and hydrotesting of pipelines
  - grouting materials
  - pile installation drill cuttings and turbidity plume
  - cooling water
  - operation of subsea hydraulically operated flooding valves
  - Remote Operated Vehicle operations.
- Disposal of putrescibles wastes, sewage and greywater from vessels to the marine environment.
- Discharges to the atmosphere associated with operation of internal combustion engines and volatilisation of organic compounds.
- Deck drainage from vessels and barges.
- Disturbance to the benthos resulting from:
  - installation of project infrastructure (platform, pipelines, subsea equipment)
  - excavation of umbilical trenches between Kipper and the West Tuna Platform
  - anchoring of vessels and barges.
- Potential for introduction of invasive marine species.

No extraordinary aspects, hazards or risks were identified through the various risk assessments. Most environmental risks identified were assessed in the "Low" category. Table 2 lists the risks that were ranked as "Lower Range Medium" (a category above the "Low" category) and the associated management and mitigation measures. No risks were assessed to be of a higher risk category.

Table 2 – Environmental Risks, Management and Mitigation Measures

Potential Risk and impact	Management / Mitigation Measures
Potential Risk: Oil or chemical spill resulting from either vessel collision, equipment failure, damage to existing infrastructure due to anchor drag, dropped object or vessel interaction with platform. **Impact:** Potential for promotion of acute or chronic pathology or mortality of marine organisms. Temporary changes to water column biochemistry.	**Prevention:** • Gazetting safety zones around active work area. • AMSA exclusion procedures for marine vessels/ legislated exclusion zones and distance from shipping lanes. • Notices to Mariners. • Procedure for vessel movements within 500 metre facility safety zone as work will be conducted in Area To Be Avoided. • Traffic movement management by platform supervisor. • Platform notification. • Permit to Work if inside safety zone. • Radio communications will be constantly maintained with other vessels operating in the area to advise of the location of the derrick lay barge and dive support vessel to avoid collision. • Ongoing stakeholder consultation to raise awareness of Project activities. • Procedures compliant with navigation and collision prevention regulatory requirements. • Simultaneous operation procedures. Monitoring other activity in the area. • Radar surveillance. • Satellite navigation of the derrick lay barge and dive support vessel assisted by constant visual observation. • Monitoring of weather reports via radio, email or fax and review of expected sea state conditions and tidal information. • Use of AustCoast warnings issued by AMSA, radio contact, and appropriate navigational beacons and lights. • Where extreme conditions make it unsafe to continue operations, Vessel Masters will cease operating and seek safe harbour (or deep water). • Vessel maintenance programmes. • Marine warranty survey certification. • Pre-set up induction meetings between support vessels and barge crews. • Esso-approved installation procedures. • Approved McDermott Australia Pty Ltd Jacket Installation Plan. • Installation and heavy lift plans. • Preventative maintenance system for cranes and slings. Certified crane. Load testing. • Inspections and maintenance of shackles and cables. • Pre-lift checklist. • Load cells to monitor tension in cables. • As built position of crossovers confirmed. Survey of pipeline route to identify location of existing pipelines and subsea infrastructure. • Site survey/drawings detail installed infrastructure. • Mooring analysis for critical set-ups. • Anchoring procedures to minimise anchor drag. • Anchor remains on deck of anchor handling tug when crossing flowline. • Minimum anchor separation distances and anchor chain catenary heights above pipelines. • Anchor lifts and repositioning using anchor handling tugs. • Personnel competence and training. • Safe work practices to be adhered. • Requirement for redundancy, such as anchors from the derrick lay barge as an additional control against unplanned barge movement, when managing physical isolation of hydrocarbon conveying equipment. • Barge management survey system. • Calibrated survey equipment, 100% back-up system, global positioning system on barge, survey equipment on tug boat. • Parachute buoys. • Redundancy in buoyancy system. • Jacket engineered for tow conditions. • Gauges on jacket are checked prior to sail away. • Independent check of jacket design. • Minimum of two operable main engines, bow thrusters and two available steering motors per tow vessel. • Spare tow line. • Engineered mud mats. • Task risk assessment. **Mitigation:** • Personnel to be familiar with Emergency Response Manuals/Plans including Bass Strait Oil Spill Response Plan and Shipboard Oil Pollution Emergency Plan. • Emergency Response Manuals and Oil Spill Contingency Plan exercised regularly. • Installation vessel operations positioned to mitigate dropped objects over existing pipeline. • Chemicals used as hydrotest fluid additives or fill gel, and hydraulic fluids to be assessed for impact on the environment prior to use.

Potential Risk and impact	Management / Mitigation Measures
Potential Risk: Physical disturbance to seabed during installation of umbilical, spool, cooler, jumper and manifold, and discharge of grout and drill cuttings into the marine environment. **Impact:** Smothering and disturbance of sessile marine species. Temporary loss of benthic habitat. Temporary localised increase in turbidity. Temporary adverse and localised impacts on light attenuation. Clogging of filter feeding structures and fish gills. Reduction in photosynthetic potential for phytoplankton when entrained in turbidity plume.	**Prevention:** • Air bags to be used to suspend umbilical ends when transporting toward junction plate connection to minimise impact of umbilicals dragging on benthos. • Procedures for grout transfer operations. • Transfer equipment on preventative maintenance system. • Pressure relief valves within equipment. • Transfer hose adequately rated for required service. • Shut off button available in board derrick lay barge. • Chemicals used as cement additives to be assessed for impact on the environment prior to use. **Mitigation:** • Area survey shows flat and featureless environment. • Volume of drill cuttings is not significant due to maximum drill depth of 65 metres below mudline. • Turbidity plume temporary. • Reduced impact with distance from discharge location. • External surfaces available for recolonisation.

Potential Risk:
Loss of containment of first fill fluids within the modules due to derrick lay barge collision or lift failure.
 	
Impact:
Potential for promotion of acute or chronic pathology or mortality of marine organisms.
 	
Temporary changes to water column biochemistry.
	Prevention:
	• Weather forecast for suitable weather window availability. Review of expected sea state conditions and tidal information.
	• Procedures:
	  ◦ AMSA exclusion procedures for marine vessels/ legislated exclusion zones. Notices to Mariners. Work conducted in Area To Be Avoided.
	  ◦ Adherence to Procedures compliant with navigation regulatory requirements.
	  ◦ Simultaneous operation procedures.
	  ◦ Approved installation procedures which have undergone appropriate risk assessment.
	  ◦ Procedure for vessel movements within 500 metre facility safety zone. Traffic movement management by platform supervisor.
	• Radio communications. Communications will be constantly maintained with other vessels operating in the area to advise of the location of the derrick lay barge and dive support vessel and avoid collision.
	• Radar surveillance
	• Vessel maintenance program.
	• Installation and heavy lift plans.
	• Pre set up induction meetings between support vessels and barge crews.
	• Preventative maintenance system for cranes and slings. Certified crane. Load testing. Shackles inspected/certification.
	• Pre lift checklist.
	• Marine warranty survey certification.
	
	Mitigation:
	• Personnel to be familiar with Emergency Response Manuals/Plans including Bass Strait Oil Spill Response Plan and Shipboard Oil Pollution Emergency Plan.
	• Emergency Response Manuals and Oil Spill Contingency Plan exercised regularly.

IMPLEMENTATION STRATEGY

To ensure that the environmental performance objectives and standards in the Environment Plan are met, an implementation strategy including the following items has been developed:

- Project personnel will undergo environmental awareness training as part of their induction, and environmental responsibilities shall be communicated.
- Operating procedures addressing waste management, fuel and chemical management, and introduction of non-endemic marine species will be implemented.
- Both Esso and McDermott will implement inspection and audit programs in accordance with management system expectations.
- Records of any spills contained on deck and discharges to the marine environment will be maintained.
- Observations of listed marine species will be maintained and reviewed.
- All operating equipment shall be maintained in good working order and subject to inspection, testing and maintenance regimes.
- Communications with commercial shipping will be maintained.
- Emergency response arrangements will be tested.

CONSULTATION AND CONTACT DETAILS

Esso maintains an active stakeholder consultation program that includes regular contact with regulators, businesses, community leaders and interest groups. Project-related consultation activities completed to date have included telephone calls to all identified stakeholders as well as face-to-face meetings and the distribution of a number of project information bulletins.

All queries and comments should be directed to:

Ms Louise Mayboehm
KTT Project - Environment and Regulatory Lead
ExxonMobil Australia Pty Ltd
GPO Box 400

Telephone: **03 9270 3333**

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