



Wheatstone Project

Summary Environment Plan – Trunkline Installation Commonwealth Waters

1	11-Dec-2013	Issued For Review			EFLH	NWDY	AXPA	
REV	DATE	DESCRIPTION			ORIG	CHK	APPR	
IP Security	<input checked="" type="checkbox"/> Company Confidential		Total number of Pages (including Cover sheet):				22	
For Contractor Documents	Contract No		Contractor Document No				Contractor Rev.	
Company Document Control No.	Project	Area	Discipline	Type	Originator	Package	Sequence-Sht	Revision
	WS2	0000	HES	PLN	CVX	000	00043-000	1

WHEATSTONE PROJECT

Summary Environment Plan – Trunkline Installation Commonwealth Waters

Document Information

Document Number	WS2-0000-HES-PLN-CVX-000-00043-000	Rev	1
Document Custodian	Nathan Waugh	Department Owner	Andy Turner

Current Revision Approvals

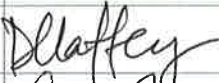
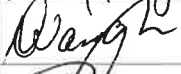

	Name / Title	Signature	Date
Prepared by	Di Claffey		11/12/13
Checked by	Nathan Waugh		11/12/13
Legal	Kathryn Barras		11/12/13

TABLE OF CONTENTS

1.0	INTRODUCTION	4
1.1	Location	4
1.2	Timeframe	4
1.3	Operator Details	4
2.0	ACTIVITY DESCRIPTION	6
2.1	Planned Activity Summary	6
2.1.1	Trunkline pipelay installation	6
2.1.2	Post-Pipelay Survey	7
2.1.3	Post-Pipelay Span Correction	7
2.1.4	Supporting Activities	7
2.2	Emergency Condition Summary	7
3.0	DESCRIPTION OF THE ENVIRONMENT	8
	The EMBA by the petroleum activity (including in the event of an emergency) is described below.	8
3.1	Physical Environment	8
3.2	Ecological and Socio-economic Environment	8
4.0	MAJOR ENVIRONMENTAL HAZARDS AND CONTROLS	14
5.0	MANAGEMENT APPROACH	19
5.1	Roles and Responsibilities	19
5.2	Training and Competency	19
5.3	Monitoring and Reporting	19
5.4	Compliance assurance	19
5.5	Documentation and Records	19
5.6	Environment Plan Review	20
6.0	CONSULTATION	21
6.1	Stakeholder Identification and Analysis	21
6.2	Communication Engagement Plan	21
7.0	CONTACT DETAILS	22

TABLES

Table 1: Protected Areas which occur within the EMBA	9
Table 2: Key Environmental Risks and their Management and Mitigation Measures	15

FIGURES

Figure 1.1: Location of Wheatstone Project Infrastructure	5
---	---

1.0 INTRODUCTION

The Summary Environment Plan – Trunkline Installation Commonwealth Waters (this Plan) summarises the Wheatstone Project Installation Environment Plan – Trunkline Installation Commonwealth Waters (the EP) (Document Number WS2-0000-HES-PLN-CVX-000-00031-000). The EP was accepted by the National Offshore Petroleum Safety Environment Management Authority (NOPSEMA) on 20 November 2013.

1.1 Location

The activities will be performed from the State/Commonwealth water boundary to the location of the Wheatstone Platform along the trunkline route, as represented in Figure 1.1.

1.2 Timeframe

The activities are scheduled to commence in Quarter 1 2014 for a duration of approximately 90 days.

1.3 Operator Details

Chevron Australia Pty Ltd (Chevron) is the proponent for the Wheatstone Liquefied Natural Gas Project. The Joint Venture Participants in the Wheatstone Project are Australian subsidiaries of Chevron, Apache Corporation, Kuwait Foreign Petroleum Exploration Company, Shell, Kyushu Electric Power Company and PE Wheatstone Pty Ltd (part owned by TEPCO).

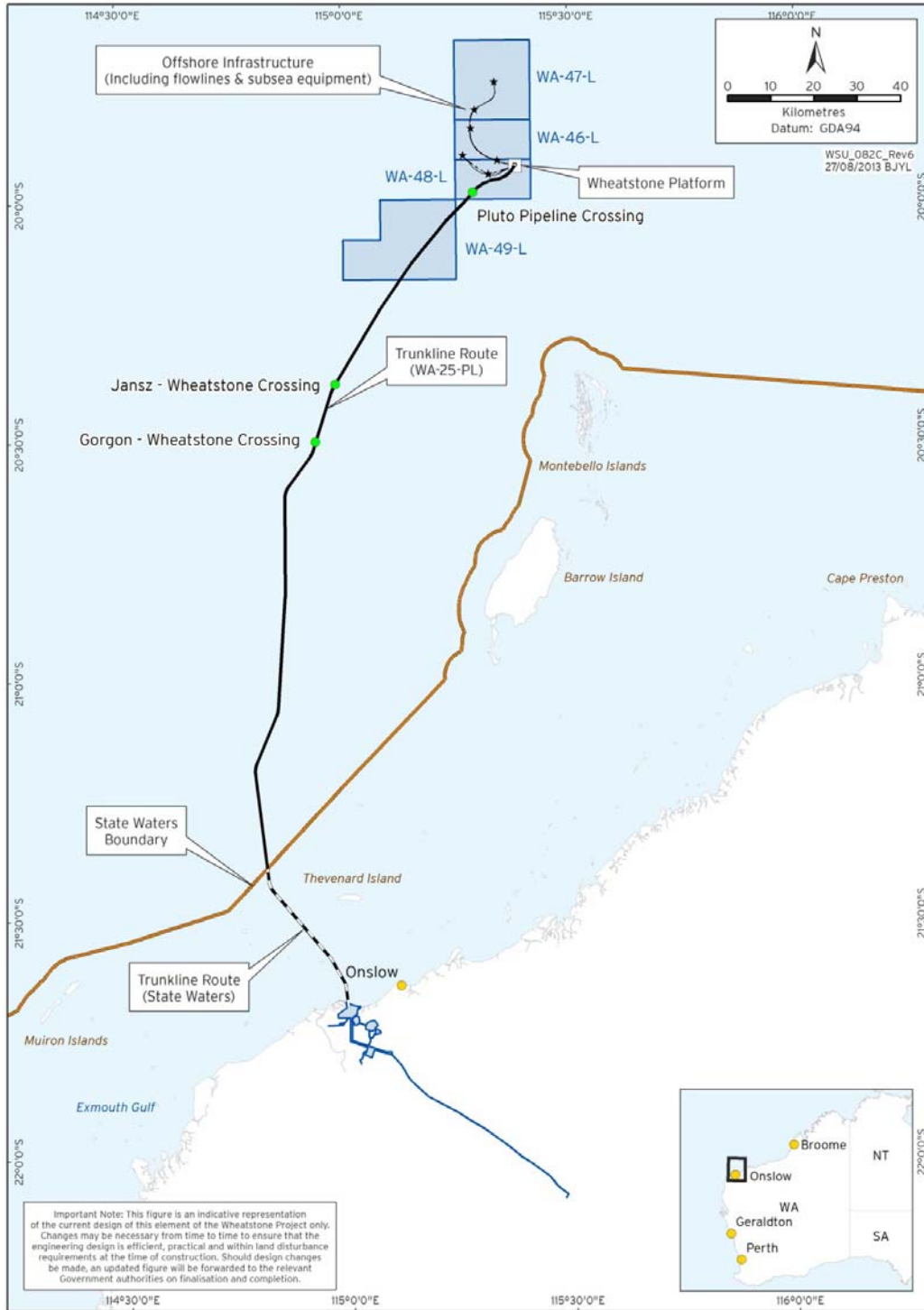


Figure 1.1: Location of Wheatstone Project Infrastructure

2.0 ACTIVITY DESCRIPTION

2.1 Planned Activity Summary

The following activities are associated with the Plan:

- ◆ Trunkline pipelay installation (in Commonwealth waters)
- ◆ Post-pipelay survey
- ◆ Post-pipelay span correction
and
- ◆ Supporting activities.

2.1.1 Trunkline pipelay installation

The trunkline installation activities in Commonwealth waters involve the laying of approximately 183 km of 44 inch diameter, welded carbon steel, concrete coated linepipe, along the trunkline route (from the State waters boundary to the Wheatstone Platform (WP) location) (Figure 1.1).

A Dynamically Positioned Pipelay Vessel will be used for the installation of the trunkline. The dynamic positioning system employed by the vessel assists to maintain the correct position and speed while laying pipe.

Onboard the trunkline installation vessel, single linepipe sections (joints) are connected via internal and external arc welds to form a “double joint”. The double joint is then non-destructively tested before the welded pipe sections are transferred to the firing line, internally cleaned, pre-heated and then welded to the pipe string. Non-destructive testing is again performed before a field joint coating is applied. A start-up head will be attached to the first section of pipe before deployment to the seabed and a lay down head will be installed prior to commencing laydown operations.

The co-ordinates of the trunkline in Commonwealth waters include the following:

Table 1: Summary of Trunkline Coordinates (based on Geodetic Datum of Australia, GDA94)

Description	UTM Zone	Easting (m)	Northing (m)
State/Commonwealth Waters Boundary	50	273 577.626	7 632 600.938
Mid point	50	314 763.260	7 782 634.840
Wheatstone Platform	50	330 860.000	7 795 520.000

2.1.2 Post-Pipelay Survey

The post-pipelay survey activities will be performed along the trunkline route to record the as-laid position of the trunkline, visually inspect trunkline integrity, inspect existing infrastructure at pipeline crossings and identify any post-pipelay spans which may require correction. The post-pipelay survey is performed using Remotely Operated Vehicle (ROV), bathymetric and visual surveys.

2.1.3 Post-Pipelay Span Correction

Where the seabed topography results in the pipeline sitting above the seabed and has the potential to result in excessive stress or fatigue of the pipeline, span correction will be performed. Spans will be rectified using either mattresses or grout bags. The results of the post-pipelay survey will determine the location and number of mattresses or grout bags required.

2.1.4 Supporting Activities

Supporting activities will include vessel bunkering to fuel the trunkline installation vessel, transfer of pipe from the pipe supply vessel to the installation vessel and the transfer of general supplies.

It is anticipated that the trunkline installation vessel will need to be bunkered approximately once or twice over the course of the activities. All other vessels will bunker in state waters and/or ports and will not use the bunkering vessel.

Transfer of pipe to the trunkline installation vessel will need to occur approximately three times a day during the course of installation. The PSVs will be of the offshore support vessel (OSV) type or PSV (Pipe Supply Vessel) type. Approximately five of these vessels will be operating during the trunkline installation, travelling to and from State waters where pipe is loaded from a cargo vessel (note the cargo vessel activities and this transfer are outside of the scope of this Plan).

The transfer of supplies will occur via supply vessels which will transport dry and wet provisions, ship spares and equipment from shore support bases to the vessels as required.

2.2 Emergency Condition Summary

Credible hydrocarbon spill scenarios were identified and assessed. The potential credible spill scenarios for the Trunkline Installation Activities are as follows:

- ◆ Hydraulic oil and chemical spills due to single point failure (<1 m3 for both on-board and overboard spills)
- ◆ Heavy Fuel Oil (HFO) spill due to vessel refuelling from bunkering vessel or trunkline installation vessel (1.2 m3 – quantity in transfer hose)
- ◆ HFO spill due to vessel refuelling from bunkering vessel or trunkline installation vessel (50 m3 – failure of dry break couplings)
- ◆ Marine Diesel Oil (MDO) spill due to vessel collision of survey vessel or supply vessel (200 m3 – maximum single tank)
- ◆ HFO spill due to vessel collision of bunkering vessel or trunkline installation vessel (850 m3 – maximum single tank).

Modelling of these scenarios determined the environment that may be affected (EMBA) in the event of an unplanned emergency condition.

3.0 DESCRIPTION OF THE ENVIRONMENT

The EMBA by the petroleum activity (including in the event of an emergency) is described below.

3.1 Physical Environment

The region is largely characterised by an arid, subtropical climate. Daily temperatures range from 20 °C to 34 °C between the months of October and March in summer, and 15 °C to 26 °C between May and August in winter. The transitional season occurs in April and September. During summer, prevailing winds are from the north-west and south-west, typically varying between 10–13 ms⁻¹. During winter months, north-easterly to south-easterly winds average between 6–8 ms⁻¹ (Chevron, 2010d). The cyclone season runs from Mid-December to April, peaking in February and March (Bureau of Meteorology 2012).

Waters in the region show temporal and spatial variation in water temperature, with a mean sea surface temperature in open shelf waters around 29.3 °C in March dropping to 24 °C in August. Nearshore temperatures in semi-enclosed waters of the NWS may fluctuate through a higher range from 19-30.4 °C (Chevron, 2010c). Tides in the region are semi-diurnal with a spring tide range of 1.9 m.

The large-scale currents predominantly flow southwest through the region influenced by the Indonesian Throughflow and Leeuwin Current (Buchan 1998). Below the surface currents, there are a number of subsurface currents, the most important of which are the Leeuwin Undercurrent and the West Australian Current. Surface currents within the EMBA are largely dominated by moderate to strong east-west surface current patterns from tidal variations.

Offshore waters of the EMBA are characterised by a relatively clear water column. In shallower, nearshore waters turbid conditions are usually the result of tidal, wave action or current- induced re-suspension of sediments and from episodic runoff of adjoining rivers. Elevated turbidity levels (>80 NTU) have been recorded during cyclonic activity.

3.2 Ecological and Socio-economic Environment

A Matters of National Environmental Significance (MNES) search was undertaken for the area enclosed by the boundaries of the EMBA. According to the SEWPac (now Department of Environment [DotE]) Protected Matters database, the following were identified:

- ◆ 2 world heritage properties
- ◆ 3 national heritage properties
- ◆ 4 Commonwealth Heritage Places
- ◆ 27 places on the Register of the National Estate (RNE).

EPBC listed 'threatened' and 'migratory' fauna are known to occur within the reserves including marine turtles, marine mammals, and marine seabirds and migratory shorebirds. For the purposes of this document, regionally important ecological, socio-economic / heritage features within the environment that may be affected have been summarised within Table 1.

Table 2: Protected Areas which occur within the EMBA

Protected Area (Status)	Description and Values	Area/extent of shoreline within EMBA
Commonwealth Marine Areas		
Montebello Commonwealth Marine Reserve (Indicative)	The Montebello Commonwealth Marine Reserve is classed as a Multiple Use Zone (IUCN VI). The Reserve is an area of 3413 km ² 20 km north of Barrow Island and 125 km west of Dampier. The reserve abuts the Barrow Island and the Montebello Islands Marine Parks. Values: Examples of seafloor habitats and communities of the Northwest shelf Province, Ancient coastline ecological feature. Important Marine Species: Foraging areas for migratory seabirds, foraging areas for whalesharks, foraging areas and adjacent to important nesting sites for marine turtles, part of migratory pathway for humpback whales.	2435 km ² (completely covers area)
Ningaloo Commonwealth Marine Reserve (Proclaimed)	The Ningaloo Commonwealth Marine Reserve is classed as a Recreational Zone (IUCN III). The Reserve is an area of 2326 km ² located along the west coast of the Cape Range peninsula. It abuts the Western Australian Ningaloo Marine Park and Ningaloo Coast World Heritage Area. Values: High water quality, Shallow shelf environments & seafloor features, Diversity of habitats support high density and diversity of marine species, major recreational fishing/boating/nature-based tourism destination, long association of Aboriginal people with adjacent coastal marine environment. Important Marine Species: Foraging and breeding areas for migratory seabirds, foraging areas for whalesharks, foraging areas and adjacent to important nesting sites for marine turtles, part of migratory pathway for humpback whales.	2435 km ² (completely covers area)
Gascoyne Commonwealth Marine Reserve (Indicative)	The reserve comprises three areas which are designated different IUCN categories: IUCN category II (National Park); IV (Habitat Protection Zone) and VI (Multiple Use Zone). Values: Provides connectivity between the inshore waters of the existing Ningaloo Commonwealth marine park and the deeper waters of the area. Overlaps three key ecological features, including canyons linking the slope between the Cuvier Abyssal Plain and the Cape Range	Multiple Use: 12668 km ² Marine National Park: 0km Habitat Protection: 172 km ²

Protected Area (Status)	Description and Values	Area/extent of shoreline within EMBA
	Peninsula, the Exmouth Plateau, and continental slope demersal fish communities. Important Marine Species: Provides foraging area for threatened and/or migratory marine fauna including migratory seabirds, hawksbills and flatback marine turtles and whale sharks.	
Shark Bay Commonwealth Marine Reserve (Indicative)	The Shark Bay Commonwealth Marine Reserve is classed as a Multiple Use Zone (IUCN IV). The Reserve is an area of 7443 km ² which abuts the Shark Bay World Heritage Area. Values: Examples of the shallower ecosystems of the Central Western Shelf Province and Central Western Transition provincial bioregions including the Zutydorp meso-scale bioregion. The reserve also provides for connectivity between the inshore waters of the Shark Bay World Heritage Area and the deeper waters of the area. Provides protection to shelf and slope habitats as well as a terrace feature. Important Marine Species: Provides foraging habitat or migratory pathway for threatened and/or migratory marine fauna including seabirds, humpback whales and loggerhead turtles.	185 km ²
State Protected Marine Parks/Management Areas		
Montebello/Barrow Island Marine Conservation Reserves (Registered)	The Montebello/BWI Marine Conservation Reserves comprises three separately vested reserves, the Montebello Islands Marine Park, Barrow Island Marine Park and Barrow Island Marine Management Area. The reserves cover areas of approximately 58,331 hectares (ha), 4,169 ha and 114,693 ha respectively. Values: The reserve provides a diversity of habitats including rocky shores and reef platforms, as well as support benthic communities, flora (i.e. macroalgae and seagrass) and fauna (i.e. burrowing invertebrates and filter-feeding communities). Important Marine Species: Numerous EPBC-listed 'threatened' and 'migratory' fauna are known to occur within the reserves including marine turtles, marine mammals, and marine seabirds and migratory shorebirds.	Barrow marine park: 40 km ² (completely covers area) Barrow marine mgmt area: 1025 km ² Montebello marine park: 570 km ² (completely covers area)

Protected Area (Status)	Description and Values	Area/extent of shoreline within EMBA
Ningaloo Marine Park (Registered 1987, Extended 2004) (Registered)	Ningaloo Marine Park protects the renowned 300 km long Ningaloo Reef, the largest fringing coral reef in Australia. It is the only large reef in the world found so close to a continental land mass; about 100 metres offshore at its nearest point and less than seven kilometres (km) at its furthest. Values: Coral reefs, marine species biodiversity, marine habitat diversity, mangroves, federally protected Mildura wreck at NW Cape. Important Marine Species: Foraging and breeding areas for migratory Seabirds, Foraging areas for Whalesharks, Foraging areas and nesting sites for marine Turtles, part of migratory pathway for Humpback Whales.	1852km2 (completely covers area)
Muiron Islands Marine Management Area (Registered)	A 28,000 ha marine management area at the Muiron and Sunday islands, approximately 15 km north of North West Cape. Values: Shallow shelf environments, diversity of habitats support high density and diversity of marine species. Important Marine Species: Foraging and breeding areas for migratory seabirds and shorebirds, foraging areas and nesting sites for marine turtles, resting area for humpback whales.	286 km2 (completely covers area)
State National Parks/ Nature Reserves		
Montebello/Barrow Island Conservation Reserves (Registered)	Barrow Island is classified as a Class “A” Nature Reserve and it is WA’s second largest island at approximately 23,600 ha. The Montebello/Barrow Island Marine Conservation Reserves include a number of islands, including the Montebello Islands (174 islands), Lowendal Islands (34 islands), Boodie, Double and Middle islands that are vested in the Conservation Commission as Class “C” Nature Reserves and all are managed by the Department of Parks and Wildlife (DPaW).	EMBA includes all of the Montebello/Barrow Island Conservation reserves

Protected Area (Status)	Description and Values	Area/extent of shoreline within EMBA
	<p>Values: No established introduced vertebrates. At least 24 endemic terrestrial species and significant subterranean fauna have resulted from thousands of years of isolation and genetic differentiation.</p> <p>Important Species: No established introduced terrestrial vertebrates. At least 24 endemic terrestrial species and significant subterranean fauna have resulted from thousands of years of isolation and genetic differentiation.</p>	
Cape Range National Park (Registered)	<p>Lying predominantly on the western side of North West Cape Peninsula, Cape Range National Park protects an area of 50 581 ha.</p> <p>Values: Flora and fauna abundance and diversity, elevated rugged limestone range, deep rocky gorges and canyons, karst system forming over 700 sinkholes and caves, pristine beaches and coral reef.</p> <p>Important Species: Endemic and protected subterranean fauna such as troglobites and stygofauna.</p>	54 km
Northern Islands Group (Registered)	<p>Northern group includes the Passage Islands and Sholl Island which are part of the Great Sandy Islands Nature Reserve, a class A nature reserve which encompasses more than 30 islands that extend in a band off the coast between 10 km to 35 km from east of Cape Preston to the mouth of the Robe River.</p> <p>Values and Important Species: The islands are known to be valuable nesting grounds for a variety of seabirds and shorebirds, providing important undisturbed nesting and refuge sites protected from introduced ground predators common on the mainland (CALM 2005). It is possible sandy beaches on the islands may be used as rookeries by turtle species known to nest within the area.</p>	Sandy Island Only: 700 m
Southern Group of Islands	<p>The Southern Group of Islands comprises Muiron, Thevenard, Bessieres, Serrurier, Locker, Airlie Islands and the Rivoli Islands. The marine environment around the islands forms part of</p>	11 Islands

Protected Area (Status)	Description and Values	Area/extent of shoreline within EMBA
(Registered)	the Rowley Shelf. Values and Important Species: The islands are known to be valuable nesting grounds for a variety of seabirds and shorebirds, providing important undisturbed nesting and refuge sites protected from introduced ground predators common on the mainland (CALM 2005). Sandy beaches on the islands may be used as rookeries by turtle species known to nest within the area.	
Jurabi Coastal Park	The Jurabi (reserve 40729) and Bundegi (reserve 40728) Coastal Parks are jointly vested in the Shire of Exmouth and the DPaW as reserves with purpose of Recreation and Coastal Management. Values and Important Species: Samphire flats of significance to migratory birds, troglobytic fauna, turtle and seabird rookeries. Two unique species of subterranean troglobytic fish and Shrimp, turtle & seabird rookeries.	Bundegi 1.5 km Jurabi 24 km
Bernier & Dorre Island Nature Reserve	The Nature reserves are made up of three Islands classified as a Class “A” Nature Reserve: Bernier, Dorre and Koks Island. These islands are managed by the DPaW Values and Important Species: Islands are free of feral predators providing refuge for protected species such as the Banded-hare wallaby, Rufous hare-wallaby, Shark Bay mouse, Western barred bandicoot and Boodie or burrowing bettong.	30 km

4.0 MAJOR ENVIRONMENTAL HAZARDS AND CONTROLS

All aspects of the activity have been subjected to a comprehensive impact and risk assessment to understand the potential environmental risks associated with the activity and ensure risks are reduced to as low as reasonably practicable and are of an acceptable level. The risk assessment was undertaken in alignment with the processes outlined in Australian Standard/New Zealand Standard (AS/NZS) ISO 31000:2009 Risk Management and HB 203:2012 Managing Environment-Related Risk, using the Chevron Integrated Risk Prioritization Matrix.

To ensure the potential environmental risks identified through the risk assessment are managed appropriately, Chevron has developed a range of performance standards (controls) that will be implemented throughout the course of construction of the trunkline. A summary of the major environmental hazards and controls are detailed in Table 2.

Table 3: Key Environmental Risks and their Management and Mitigation Measures

Sources of Risk (Hazards)	Potential Environmental Impacts	Management and Mitigation Measures
Benthic disturbance	<ul style="list-style-type: none"> ◆ Direct disturbance to locally or regionally significant habitat and indirect disturbance to habitat through sediment dispersion and smothering of the benthic habitat. 	<ul style="list-style-type: none"> ◆ Shortening the original route from that described in the EIS/ERMP (Chevron2010a) as far as practical (Chevron 2012d) resulting in a decreased footprint and reduced temporal disturbance to benthic habitats due to a shorter installation period. ◆ Routing to deeper water as close to the shoreline as possible minimises shallower water zones which reduces installation impacts in higher habitat concentrations (and trenching and secondary stabilisation requirements) and the environmental risks associated with these activities. Deeper waters tend to support less concentrated habitats ◆ The trunkline diameter is optimised (smaller diameters would not meet design flowrates and larger diameters would have larger footprints) ◆ Benthic disturbance is confined to the installation route (lateral deviation of +/-10m), the benthic habitat of which is not considered ecologically isolated or regionally significant (in accordance with the EIS/ERMP) ◆
Physical presence of infrastructure	<ul style="list-style-type: none"> ◆ Potential change / disturbance to subtidal ecosystems - offshore outside trunkline route ◆ Potential disruption / disturbance to commercial fishing operators or commercial shipping vessels 	<ul style="list-style-type: none"> ◆ Trunkline will be installed within designed trunkline route and allowable tolerances in accordance with Petroleum Pipeline Licence WA-25-PL ◆ Vessel presence and trunkline installation activities will be notified to AMSA (Commonwealth Waters) as applicable to enable a Notice to Mariners (or similar instrument) to be issued ◆ AHS informed of locations of subsea trunkline/mattresses/grout bags to advise other stakeholders ◆ Consultation will be undertaken with relevant stakeholders

Sources of Risk (Hazards)	Potential Environmental Impacts	Management and Mitigation Measures
Vessel movements	<ul style="list-style-type: none"> ◆ Collision with marine fauna (including cetaceans, whale sharks, turtles) resulting in injury or death ◆ Potential disruption / disturbance to commercial fishing operators or commercial shipping vessels 	<ul style="list-style-type: none"> ◆ All vessels will comply with the 'no approach zone' distances for at risk marine fauna as defined in Chevron's Wheatstone Project Conservation Significant Marine Fauna Interaction Management Plan (CSMFIMP) ◆ The Marine Fauna Observation (MFO) training will include the requirements of the CSMFIMP for all vessels to comply with the 'no approach zone' distances for marine fauna ◆ All vessels will have a trained observer (trained in marine fauna observation) on duty during daylight hours ◆ All vessels will establish an approach zone, inside which a speed limit of 5 knots and restrictions on navigation paths, will be enforced, in accordance with the CSMFIMP ◆ The Project induction will include relevant requirements of the CSMFIMP, including the requirement for all vessels to remain outside the 'no approach zone' distances for marine fauna. All relevant vessel crew to attend the project induction
Underwater noise	<ul style="list-style-type: none"> ◆ Physiological damage to marine fauna (physical and perceptual). ◆ Disruption to behaviour patterns of marine fauna (including indirect impacts such as displacement or injury of prey species). 	<ul style="list-style-type: none"> ◆ All vessels will comply with the 'no approach zone' distances for at risk marine fauna as defined in Chevron's Wheatstone Project CSMFIMP ◆ The MFO training will include the requirements of the CSMFIMP for all vessels to remain outside the 'no approach zone' distances for marine fauna. ◆ All vessels will have a trained observer on active duty during daylight hours. ◆ Vessels engines, transponder and thrusters (DP system) will be maintained as per vessel planned maintenance program throughout installation activities.
Introduced marine pests (IMP)	<ul style="list-style-type: none"> ◆ Introduction of IMP along the trunkline route. 	<ul style="list-style-type: none"> ◆ Vessels will have Department of Agriculture, Fisheries and Forestry (DAFF) clearance to operate in Australian waters, and records of submission of Quarantine Pre-Arrival Report (QPAR) to DAFF prior to entry. ◆ All required vessels will implement the DAFF Australian Ballast Water Management Requirements ◆ All vessels to maintain a current anti-fouling coating that complies with the requirements of Annex 1 of the International Convention on the Control of Harmful Anti-Fouling Systems on Ships ◆ In accordance with the Introduced Marine Pest Risk Assessment Process (IMPRAP) all

Sources of Risk (Hazards)	Potential Environmental Impacts	Management and Mitigation Measures
		required vessels will have completed a vessel risk assessment as per the IMPRAP and high risk vessels (as assigned through the IMPRAP) will be inspected and cleared by an IMP Inspector and approved by DoF
Solid waste	<ul style="list-style-type: none"> ◆ Temporary and localised reduction in water quality associated with increase in nutrients ◆ Temporary and localised reduction in water quality. Ingestion by or entanglement of marine fauna 	<ul style="list-style-type: none"> ◆ Offshore discharge of food wastes will occur only if macerated (< 25 mm) at > 3 nm and/or un-macerated at > 12 nm from land from when vessel is moving, in accordance with MARPOL 73/78 ◆ Vessels > 100 T (or certified for > 15 persons on-board) will have a Waste Management Plan, in accordance with MARPOL 73/78 ◆ Vessels > 400 T (or certified for > 15 persons on-board) will incinerate or transfer waste to shore for disposal ◆ Wastes designated as hazardous or dangerous goods will be identified, packaged, segregated, handled, stored, transported and tracked in accordance with MARPOL 73/78 and applicable International Maritime Dangerous Goods requirements
Liquid Waste	<ul style="list-style-type: none"> ◆ Temporary and localised reduction in water quality 	<ul style="list-style-type: none"> ◆ Offshore discharges in accordance with MARPOL 73/78 ◆ Oily bilge water will be contained onboard and disposed of at a licensed facility or discharged to marine environment only when concentration < 15ppm and vessel is moving ◆ Spill kits will be provided on all vessels and personnel will be aware of their location and use
Unplanned events - Loss of containment of Hydraulic oil, HFO, or MDO: <ul style="list-style-type: none"> ◆ Single point failure ◆ Transfer/refuelling ◆ Vessel collision 	<ul style="list-style-type: none"> ◆ Potential Incidental to Moderate impacts to a range of ecological and socio-economic receptors 	<ul style="list-style-type: none"> ◆ Spill kits will be provided on all vessels and personnel will be trained in their use and maintenance. Spare spill kit inventory stored on board ◆ Dry break away couplings will be installed and maintained on all transfer / refuelling hoses ◆ Operational procedures outlining controls including, visual monitoring, maintenance of radio communications, environmental and weather limitations, and sufficient lighting, during bunkering activities ◆ Automatic stop on transfer pumps when there is loss of fuel hose pressure ◆ Vessels will be fitted with fenders and functional DP systems ◆ Vessel presence and trunkline installation activities notified to the AMSA

Sources of Risk (Hazards)	Potential Environmental Impacts	Management and Mitigation Measures
		(Commonwealth Waters) as applicable to enable a Notice to Mariners (or similar instrument) to be issued ♦ All vessels meet design criteria approved to classification design requirements (i.e. ABS) ♦ Vessel master qualified to required STCW requirement
Unplanned events – Spills: ♦ Response technique risks ♦ Post-spill aerial surveillance activities	♦ Potential temporary and localised contamination of the marine environment ♦ Post-spill aerial surveillance activities potentially impacting on marine fauna	♦ Vessels undertake Shipboard Oil Pollution Emergency Plan (SOPEP) drills as per detailed EP requirements ♦ OSORP implemented as per detailed EP requirements ♦ Current SOPEP onboard and spill response equipment available and maintained on all vessels in accordance with Protection of the Sea (Prevention of Pollution from Ships) Act 1983 ♦ Response techniques implemented and terminated as described in the EP

5.0 MANAGEMENT APPROACH

The implementation strategy identifies the systems, practices and procedures to be used to ensure the environmental impacts and risks of the activities are reduced to ALARP and are acceptable, and the environmental performance objectives and standards are met. The implementation strategy is split between planned operational activities and unplanned event response, enabling roles and responsibilities to be clearly defined and to provide a clear chain of command for both.

The implementation strategy is to be enacted in accordance with Chevron Australia's Operational Excellence Management System. Chevron's Operational Excellence Management System is aligned to ISO 14001:2004 and key components of the management system are described in the subsections below.

5.1 Roles and Responsibilities

Accountabilities and responsibilities are defined for personnel involved in the projects implementation for both planned activities and unplanned events.

5.2 Training and Competency

All personnel are required to attend environmental inductions and training relevant to their role for the activities. Environmental training specific to the activities is described in the strategy and includes induction requirements, environmental roles and responsibilities and spill response / emergency management training and Marine Fauna observer training. Training records will be maintained and will include copies of certificates and attendance sheets. Further spill response related training requirements are listed with respect to desktop spill response exercise as well as a SOPEP or similar spill drill.

5.3 Monitoring and Reporting

The implementation strategy outlines the requirements for the following: emissions and discharges, routine external reporting and non-routine reporting (including internal incident reporting and investigations and external incident and near misses reporting).

5.4 Compliance assurance

A multi-tiered environmental compliance assurance program will be implemented for the duration of the activities described in the detailed Plan, including tools, processes and procedures to deliver and verify compliance with the detailed Plan. Assurance activities will include both Chevron-led and contractor-led audits and inspections. Chevron-led audits and inspections will be undertaken as required and in accordance with Chevron's ABU Compliance Assurance Process and the Health, Environment and Safety Audit Schedule for the Project.

5.5 Documentation and Records

Chevron Australia's ABU Operational Excellence Management System (OEMS) has dedicated information management tools and processes to ensure critical information is developed, accessible and maintained by the workforce. Wheatstone documentation shall be managed in accordance with this Process, and specifically via the Project's Document Management System. Accordingly, all documentation and records demonstrating compliance against environmental performance objectives and standards will be effectively maintained and retained for the life of the Project and not less than five years.

5.6 Environment Plan Review

Chevron's Management of Change process will be followed to document and assess the impact of any changes to the activities described in the detailed EP. These changes will be addressed to determine if there is potential for any new or increased environmental impact or risk not already provided for in the detailed EP. The detailed EP will be re-submitted to NOPSEMA for approval in accordance with Regulation 17 of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (OPGGS(E)R).

6.0 CONSULTATION

Chevron prepared a Stakeholder Consultation Plan specific for this activity. The Stakeholder Consultation Plan describes:

- ◆ stakeholder identification and analysis
- ◆ communication engagement plan, comprising the level and trigger of engagement, type of engagement, and frequency
- ◆ stakeholder engagement log, including any issues raised and Chevron responses
- ◆ full text of consultation.

6.1 Stakeholder Identification and Analysis

Relevant stakeholders were identified through a stakeholder analysis process to ensure persons or organisations that may be affected by the drilling program activities (planned and unplanned) have been consulted. Stakeholders that may be potentially affected were identified by reviewing:

- ◆ social receptors within the environment that may be affected
- ◆ previous consultation undertaken for the Gorgon Project
- ◆ applicable legislation to identify regulatory agencies
- ◆ correspondence received from writing to all commercial fishing license holders in State and Commonwealth fisheries which overlap the Chevron active permit areas.
- ◆ relevant agencies or organisations who may be involved in the event of a spill.

6.2 Communication Engagement Plan

Once the stakeholder analysis was completed, a Communication Engagement Plan was developed to determine the following, for each stakeholder:

- ◆ the level of engagement required
- ◆ the type of engagement required
- ◆ when engagement would be undertaken and
- ◆ the frequency of communication.

The Communication Engagement Plan covers both initial and ongoing stakeholder engagement and covers both planned activities and unplanned events. Chevron is to maintain communications with identified stakeholders as required, ensuring that they are informed of any aspects of the drilling program that may affect their respective activities within the area.

7.0 CONTACT DETAILS

Further information associated with the proposed activities may be obtained from:

Andy Turner
Wheatstone Upstream HES Manager
Phone: +61 8 9216 4952
Fax: +61 8 9413 6885
Email: andy.turner@chevron.com