PRE-DRILLING SITE SURVEYS WA-341-P, AC/P 36, WA-343-P, WA-285-P AND WA-344-P ENVIRONMENT PLAN SUMMARY

Document No.: D020-AD-PLN-10001
Security Classification: Business - Unrestricted

Rev	Date	Description	Prepared	Checked	Line Manager Endorsed	Director / GM Approved
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NOTICE

TABLE OF CONTENTS

1 INTRODUCTION 1
2 DESCRIPTION OF THE ACTIVITY 2
2.1 Location of the activity 2
2.2 Timing of the survey 2
2.3 Survey description 2
3 DESCRIPTION OF THE ENVIRONMENT 4
3.1 Physical environment 4
3.2 Biological environment 4
3.3 Cultural environment 6
3.4 Socio-economic environment 6
4 MAJOR ENVIRONMENTAL HAZARDS AND CONTROLS 7
5 MANAGEMENT APPROACH 11
6 CONSULTATION 12
7 CONTACT DETAILS 13

LIST OF TABLES

Table 3-1: EPBC listed species that may occur within or adjacent to the Project area 4
Table 4-1: Key environmental hazards and control measures 8

LIST OF FIGURES

Figure 2-1: Project location map including boundary coordinates 3

1 INTRODUCTION

INPEX Browse Ltd (INPEX), as operator on behalf of its joint venture partners, is proposing to conduct pre-drilling geotechnical and geophysical surveys within petroleum exploration permits WA-341-P, AC/P 36, WA-343-P, WA-285-P and WA-344-P (the Project) in the Browse Basin, Western Australia (WA).

This document provides a summary of the Environment Plan (EP) that was accepted by the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) in accordance with Regulation 11(1) of the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 and Amendment Regulations 2011 (Environment Regulations). This document has been prepared as per the requirements of Regulation 11 (7) and (8) of the Environment Regulations.

2 DESCRIPTION OF THE ACTIVITY

2.1 Location of the activity

The surveys will be undertaken within petroleum exploration permits WA-341-P, AC/P 36, WA-343-P, WA-285-P and WA-344-P (the Project area), located wholly in Commonwealth waters (Figure 2-1). The Project area is located approximately 400 km north of Derby, Western Australia, and approximately 185 km north-west of the Kimberley coastline, at its closest point.

The geophysical and geotechnical surveys will be centred on potential well locations. Boundary coordinates for the site survey polygons are provided in Figure 2-1.

2.2 Timing of the survey

The survey work is anticipated to commence in 2014. Survey activities will be undertaken 24 hours a day. Each survey (over approximately 3 km^2) is for a short duration and is anticipated to take approximately 7 to 10 days to complete, depending on vessel availability, operational efficiencies and weather conditions.

2.3 Survey description

INPEX plans to conduct a range of vessel based technical surveys to determine seabed and shallow subsurface conditions, to understand the potential hazards to, and identify the optimum configuration and placement of anchor locations for, the semi-submersible mobile offshore drilling unit (MODU) to be used during a subsequent drilling campaign. The information collected will help to determine if any features or conditions exist that may constrain the MODU anchoring positioning.

The technical surveys proposed are considered typical of geophysical and geotechnical surveys currently conducted in Australian marine waters. INPEX proposes to use a variety of survey methods including echo sounding, side-scan sonar, high-resolution seismic and seabed coring.

The surveys will assess of bathymetry, topography and water depth, sediment characterisation and geological contour mapping and identification of seabed obstructions within the Project area.

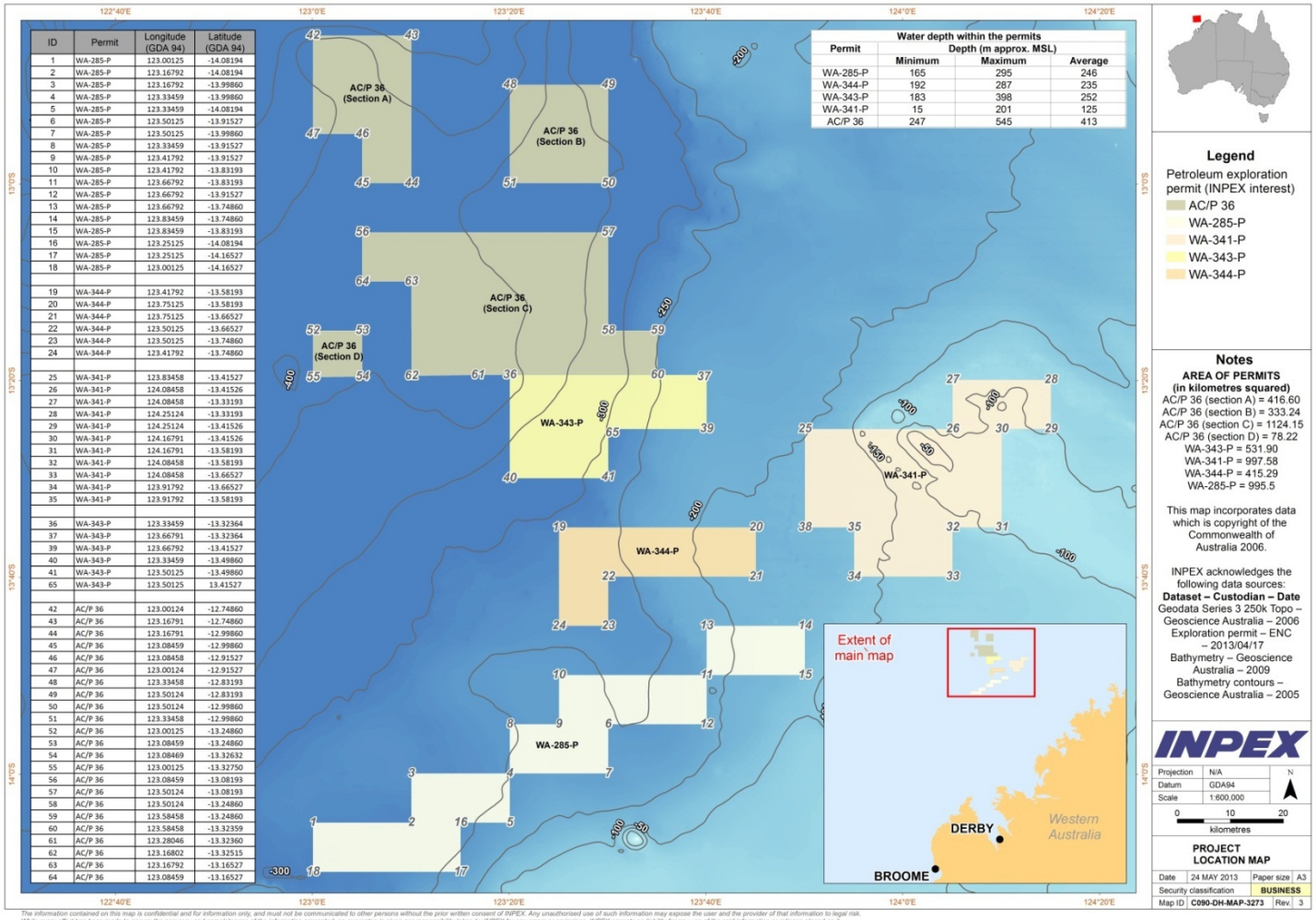

Figure 2-1: Project location map including boundary coordinates

3 DESCRIPTION OF THE ENVIRONMENT

3.1 Physical environment

The Project area is located within the Browse Basin, approximately 400 km north of Derby, WA, and approximately 185 km north-west of the Kimberley coastline, at its closest point. Average water depth within the Project area ranges from 125 m to 413 m.

The broad scale oceanography of Northern Australia is complex, with multiple large-scale currents present in the region, of which the Indonesian Throughflow current system is dominant. This current is generally strongest during the south-east monsoon from May to September.

A number of shoals and reefs exist within the Browse Basin. At their closest points, Heywood and Echuca shoals are located approximately 15 km to the north-east and 40 km to the south-east of the Project area, respectively. Browse Island is the nearest intertidal habitat, located approximately 25 km south of the Project area at its closest point.

3.2 Biological environment

Surveys conducted by INPEX during previous regional studies found very few epibenthic organisms within the Project area. This is likely a consequence of the great depths, extreme currents and mobile sediments (as suggested by the appearance of the seabed) experienced in the Project area, which do not favour the development of diverse epibenthic communities.

As the seabed depth is well below the photic zone, benthic macrophyte communities are not expected within the Project area due to limited light penetration and photosynthetic ability of organisms at these depths. As expected, species richness and abundance for the area was seen to decrease with increasing distance from land and with increasing water depth.

The Timor Province is described as the most strongly defined province for demersal slope fish species in the area and is characterised as having a high level of endemism and species diversity. This continental slope supports more than 418 demersal fish species, of which large proportions are considered to be endemic.

The Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) Protected Matters database (including a 10 km buffer) identified 10 Threatened species and 20 Migratory species (nine of which are also listed as Threatened species) listed as potentially utilising the Project area (Table 3-1).

Table 3-1: EPBC listed species that may occur within or adjacent to the Project area

Scientific name	Common name
Birds	
Calonectris leucomelas or Puffinus leucomelas	Streaked shearwater
Fregata ariel	Lesser frigatebird
Fregata minor	Great frigatebird

Scientific name	Common name
Sula sula	Red-footed booby
Reptiles	
Aipysurus apraefrontalis	Short-nosed seasnake
Various sea snake sp	various sea snakes
Caretta caretta	Loggerhead turtle
Chelonia mydas	Green turtle
Dermochelys coriacea	Leatherback turtle
Eretmochelys imbricate	Hawksbill turtle
Lepidochelys olivacea	Olive ridley turtle
Natator depressus	Flatback turtle
Mammals	
Balaenoptera musculus	Blue whale
Megaptera novaeangliae	Humpback whale
Balaenoptera bonaerensis	Antarctic minke whale
Balaenoptera edeni	Bryde's whale
Orcinus orca	Killer whale
Physeter macrocephalus	Sperm whale
Tursiops aduncus	Spotted bottlenose dolphin (Arafura or Timor sea populations)
Fishes	
Rhincodon typus	Whale shark
Isurus oxyrinchus	Shortfin mako
Isurus paucus	Longfin mako

Scientific name	Common name
Other	
Various pipefish, pipehorse, seahorse	Various pipefish, pipehorse, seahorse

No known breeding grounds or sensitive habitat environments critical to the species outlined in are known to exist within or adjacent to the Project area.

3.3 Cultural environment

The Project area is located within the 'Economic Exclusion Zone and Territorial Sea' Commonwealth Marine Area. The Commonwealth Marine Area encompasses seas 3 to 200 nautical miles from the coast.

The Project area is not located in, or immediately adjacent to, any national heritage, world heritage, wetland of international importance, commonwealth marine areas, commonwealth marine reserve, maritime heritage or indigenous heritage places. However some do exist within the vicinity of the Project area.

3.4 Socio-economic environment

The Project area is traditionally utilised by a range of stakeholders, including traditional Indonesian fisherman, recreational fisherman, commercial fisheries (Commonwealth and state managed), the oil and gas industry, shipping and the department of defence.

The Project area and surrounds are used by one Commonwealth and three State-managed commercial fisheries. These are the North West Slope Trawl Fishery (NWSTF), Northern Demersal Scalefish Fishery, Mackerel Managed Fishery and Northern shark fisheries, respectively.

Currently there are no oil and gas production facilities in operation within the Browse Basin however; the region is subject to considerable exploration activity and numerous wells resulting in finds.

Shell is in the process of constructing a floating LNG facility (Prelude) to be located approximately 20 km to the north of permit WA-285-P and additionally Browse LNG Development has proposed the commercialisation of three fields; Brecknock, Calliance and Torosa, owned by the Browse Joint Venture.

The ports along the north-west coast of Australia such as Dampier, Cape Lambert, and Port Hedland handle large tonnages of iron ore and petroleum exports, with shipping routes throughout the north-west Australian region.

The Royal Australian Air Force Base Curtin air-to-air weapons range training zone are located approximately 100 km south-west of the Project area. As such the Department of Defence can request the Civil Aviation Safety Authority to declare the airspace prohibited or restricted.

It must be noted that INPEX has proposed that once the vessel is on location, a 500 m radius safety exclusion zone will be maintained to control activities and reduce the risk of marine collisions.

4 MAJOR ENVIRONMENTAL HAZARDS AND CONTROLS

INPEX has a risk management process to ensure that activities are undertaken such that risks are managed to As Low As Reasonably Practicable (ALARP) and acceptable levels. The risk assessment has been undertaken for all activities within the Project area, in accordance with the procedures outlined in the Australian and New Zealand Standards AS/NZS ISO 31000:2009 (Risk Management – Principles and Guidelines) and HB 203:2012 (Managing Environment – Related Risk). The process is documented at various levels throughout the organisation and is supported by risk management standards, procedures and tools.

The key environmental hazards and control measures to be applied to the Project are provided in Table 4-1. These are consistent with INPEX's corporate and Project-specific objectives, standards and criteria. All control measures associated with the hazards will be used to reduce environmental risk to ALARP and will be of an acceptable level.

Table 4-1: Key environmental hazards and control measures

Source of risk (Hazard)	Potential environmental impact	Management and mitigation measures
Physical presence		
Physical presence of vessels	Damage or loss of equipment Loss of access within safety exclusion zone	• Maintenance of a 500 m radius safety exclusion zone, as required under the OPGGS Act • Notify marine users by issuing a Notice to Mariners and Maritime Safety Information (MSI) notifications • Consultation with relevant fishing operators • Adhere to relevant standard maritime safety or navigation procedures, as per Navigation Act 2012, Convention on the International Regulations for Preventing Collisions at Sea 1972 (COLREGS) - Part B Steering and Sailing Rules and IFC Environment, Health and Safety Guidelines - Offshore Oil and Gas Development (Section 1.2) - Ship collision.
	Behavioural change to marine fauna Injury or death of marine fauna from vessel strike	• Part 8 of the EPBC Regulations 2000 • INPEX Marine Megafauna Interaction and Observation Procedures
Geotechnical seabed coring	Damage or loss of significant benthic/ epibenthic environment Behavioural change to marine fauna	• Limited spatial and temporal scale of Project activities • Project will be conducted in waters located away from significant/sensitive benthic habitats and communities. • Optimisation of seabed coring program and coring technique based on geophysical data
Introduction of invasive marine species	Reduction in species biodiversity of surrounding environment	• Adherence to all legal requirements and guidance - e.g. the Department of Agriculture, Fisheries and Food (DAFF) Australian Ballast Water Management Requirements - Version 5 • Internal seawater systems will be flushed in accordance with the *National Biofouling Management Guidance for the Petroleum and Production Exploration Industry* • Vessels will have a certified and inspected hull as per DAFF and WA Department of Fisheries (DOF) requirements. • Implementation and strict adherence to INPEX Quarantine Management Standard

Source of risk (Hazard)	Potential environmental impact	Management and mitigation measures
Waste management		
Improper non-hazardous and hazardous waste management	Injury or death of marine biota (ingestion, or entanglement, with litter).	• Compliance with the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* • Vessel contactor waste management plans are required to meet INPEX standards and comply with INPEX Waste Management Standard and DSEWPaC approved INPEX Waste Management Plan • Hazardous chemical pollution prevention strategies, waste management plan and procedures will be in place • Material safety data sheets available for chemical materials on board • Compliance with the INPEX Chemical Selection Assessment and Approval Procedure
Discharges to the marine environment: Planned		
Discharge of sewage, grey water and putrescible waste	Reduction in water quality (i.e. localised increase in nutrient availability leading to phytoplankton blooms)	• Manage and dispose of sewage and putrescible wastes in accordance with MARPOL 73/78 as implemented in Commonwealth waters by the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983*. • Project area is in open ocean and deep water, well away from coastal environments and fauna migration routes
Deck drainage	Temporary and localised reduction in water quality	• Deck spills will be cleaned up as soon as possible and/ or diverted to slops tanks. • Potentially contaminated water shall be drained to slops tanks and passed through a tested and approved oily water separator (MARPOL 73/78 Annex I) • Oily water separators will be constantly monitored for efficient operation to ensure water discharged to the sea is within specification.
Emissions: Planned		
Atmospheric emissions from combustion of fuel	Ambient air quality standards Contribution to global greenhouse gas emissions	• Carry out operational preventative maintenance • Low sulfur diesel (sulfur content with sulfur < 3.5% m/m) will be used • Emissions will be in compliance with MARPOL 73/78 Annex VI

Source of risk (Hazard)	Potential environmental impact	Management and mitigation measures
Light emissions from the vessel.	Light emissions may disturb by attraction, disorientation or repulsion of migratory seabirds, fish and marine turtles.	• Lighting will be kept at the lowest acceptable level for safe operating procedure • HSE inspection of the vessel includes consideration of lighting in terms of safe working conditions and minimising impact on marine fauna.
Sound generated as a result of physical presence vessels.	Increased underwater noise levels causing behavioural change to marine fauna such as fish, reptiles and cetaceans.	• Holding a pre-start meeting where crews are reminded of required procedures for sighting of marine mega fauna during or before survey activities. • Record all sightings of marine mega fauna • Compliance with Part 8 of the EPBC Regulations 2000 –Division 1 Interacting with cetaceans.
Sound generated as a result of geophysical equipment.	Increased underwater noise levels causing behavioural change to marine fauna such as fish, reptiles and cetaceans	• Survey vessel will adhere to EPBC Act Policy Statement 2.1: Interaction between offshore seismic exploration and whales • Location of Project in open ocean, well away from coastal environments and fauna migration routes.
Emissions: Unplanned		
Spill of diesel during refuelling	Temporary and localised reduction in water quality leading to toxic effects on marine biota. Potential oiling of marine wildlife.	• Strict adherence to refuelling and transfer procedures • Vessels will hold Shipboard Oil Pollution Emergency Plans (SOPEP) • Monitor prevailing and forecast weather conditions • NOPSEMA approved Oil Spill Contingency Plan (OSCP) prior to activity commencement. • Incorporate INPEX Chemical Selection Assessment and Approval Procedure when selecting fluids • APASA Oil Spill Modelling Assessment for all seasons .
Spill of diesel resulting from vessel collision		• INPEX will ensure that the vessel contractor manages any spills to marine environment in accordance with the INPEX OSCP • Vessel contractor complies with the COLREGS, Part B – Steering and Sailing (Rules 4–19) • Activate survey vessel SOPEP (as per MARPOL 73/78, Annex 1) for managing spills aboard.

5 MANAGEMENT APPROACH

The Project will be managed in compliance with the Pre-Exploration Site Surveys WA-341-P, AC/P 36, WA-343-P, WA-285-P and WA-344-P Environment Plan accepted by NOPSEMA under the Environment Regulations, other relevant environmental legislation and the INPEX Environment Policy.

The implementation strategy will be undertaken in accordance with the INPEX HSE-MS, which provides a foundation of standards, procedures and tools that support the implementation of the EP in accordance with Regulation 14 of the OPGGS (E) Regulations.

The key components of implementation are:

- Policy: provides a statement of INPEX's Environment Policy which sets the framework for the INPEX HSE-MS under which the Project will be managed to ensure that the environmental impacts and risks of the Project are continuously reduced to ALARP.
- Plan: specific INPEX standards and guidelines to be used to ensure the Project will be managed such that risks are ALARP.
- Do: details roles and responsibilities, training and competency measures, INPEX emergency response framework including incident management, references to the INPEX OSCP and contractor SOPEP, cyclone response and emergency response training which in turn provides for the maintenance for the INPEX OSCP and contractor SOPEP, and provides details on INPEX document control procedures.
- Check: monitoring, audit and management of non-conformance of INPEX environmental performance and the implementation strategy.
- Act: management review of the Project's environmental performance and the implementation strategy.

6 CONSULTATION

INPEX has used well-developed stakeholder engagement procedures in order to consult in an appropriate manner with a variety of stakeholders relevant to the Project, as summarised below:

- convene stakeholder identification and classification workshop
- compile list of stakeholders
- rate stakeholder levels of interest and expectations
- rate stakeholder levels of influence
- determine appropriate method of stakeholder engagement
- finalise and approve stakeholder register.

INPEX has used this process to engage with relevant stakeholders that have an interest in, or the potential to be impacted by, the Project. Stakeholder groups include commercial fisheries and their associations, recreational fishing associations, Commonwealth and State Government departments, industry and business and environmental groups. All stakeholders have been informed of the exclusion zone applied around the vessel and have been provided a map with details of the Project area.

To date, consulted stakeholders have not raised concerns with regards to the Project.

7 CONTACT DETAILS

The main point of contact for further information regarding this EP or the Project is:

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